

EFLOW INSTALLATION GUIDE

WATER REUSE DISPERSAL SYSTEM

EFLOW KITS FAMILY

CNL XR EFLOW



CNL XR START UP KIT CNL XR ADD ON KIT

SUITS:

Treated Wastewater and Greywater reuse on slopes/gradations with vegetation that promotes aggressive root growth.

FEATURES:

Copper oxide impregnated diaphragm (XR) resistance to root intrusion.

Anti drainage dripperline (CNL) eliminates draining and refill effect.

Pressure compensated (PC) ensuring total uniformity of water along the laterals.

DRIPPERLINE:

Netafim Unibioline CNL XR
Flow rate: 1.6 L/Hr
Spacing: 0.4m
Tube: 16mm Purple
Wall: Heavy Wall dripperline
PC: Pressure Compensated

AS XR EFLOW



AS XR START UP KIT AS XR ADD ON KIT

SUITS:

Treated Wastewater and Greywater reuse for vegetation that promotes aggressive root growth.

FEATURES:

Copper oxide impregnated diaphragm (XR) resistance to root intrusion.

Anti Siphon (AS) prevents contaminants from being drawn into the dripper.

Pressure compensated (PC) ensuring total uniformity of water along the laterals.

DRIPPERLINE:

Netafim Unibioline AS XR
Flow rate: 1.6 L/Hr
Spacing: 0.5m
Tube: 16mm Purple
Wall: Heavy Wall dripperline
PC: Pressure Compensated

EFLOW



START UP KIT (NON XR) ADD ON KIT (NON XR)

SUITS:

Treated Wastewater and Greywater reuse on slopes/gradations.

FEATURES:

Anti drainage dripperline (CNL) eliminates draining and refill effect.

Pressure compensated (PC) ensuring total uniformity of water along the laterals.

DRIPPERLINE:

Netafim Unibioline CNL
Flow rate: 1.6 L/Hr
Spacing: 0.4m
Tube: 16mm Purple
Wall: Heavy Wall dripperline
PC: Pressure Compensated

EFLOW

WATER REUSE DISPERSAL SYSTEM

EFLOW DRIPPERLINE DIVERSION PACKAGE THAT ALLOWS THE REUSE OF DOMESTIC HOUSEHOLD WATER TO IRRIGATE GARDEN AND TURF AREA

HOW THE EFLOW SYSTEM 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.

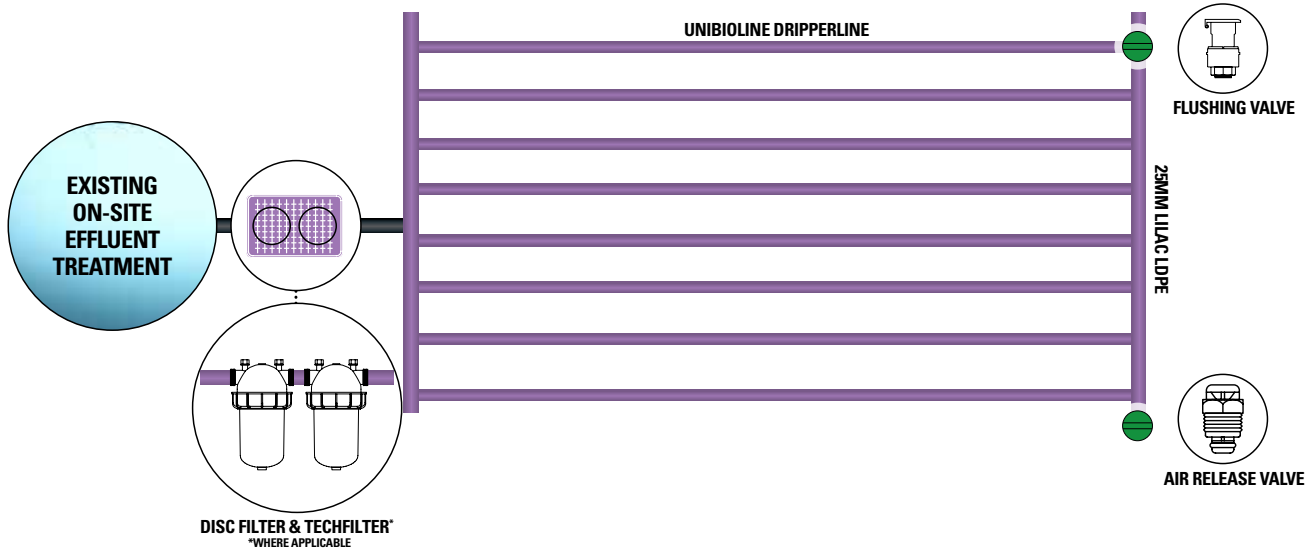
THE EFLOW ADVANTAGE

- 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 kits feature Netafim UniBioline dripperline with innovated features such as Anti Drainage* (CNL) holding water within the dripperline during system shut-down (available only in EFlow CNL XR & EFlow Kits). All EFlow kits are Pressure Compensating (PC) dripperlines, giving you direct water distribution and reduced wasted run-off on slopes.

Unibioline has a clever System Protection Unit with a life time guarantee against root intrusion for turf applications. Plus Unibioline dripperline has the largest filtration surface area than any other system on the market, greater filtration equals uninterrupted flow and greener results.

INSTALLATION GUIDE



SURFACE INSTALLATION

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.

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.



SUB SURFACE - TRENCHING



SUB SURFACE - VIBRATORY PLOUGH



SUB SURFACE - RIPPING



SURFACE - BACKFILLING

SUB-SURFACE DRIPPERLINE INSTALLATION TECHNIQUES (CONTINUED)

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.

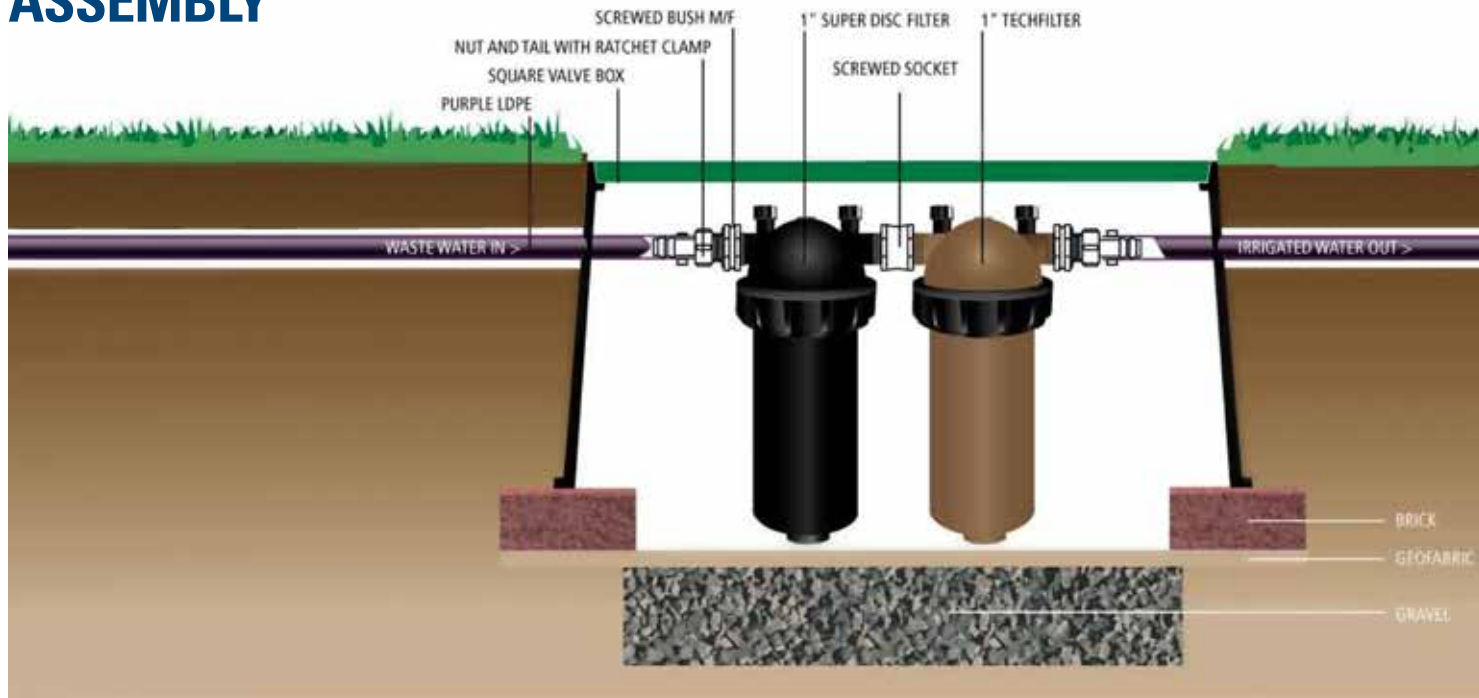
VIBRATORY PLOUGH

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.

ASSEMBLY



FILTER ASSEMBLY

The 25mm Arkal Disc Filter is used to protect the system from contamination of debris. It has a 130 micron filtration 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. A Techfilter is not required for EFlow CNL XR and EFlow AS XR kits.

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, tees are to be installed after the filtration system (Tees are provided in the 'Add-on' kit only).

The filter system is to be contained within the rectangular valve box provided.

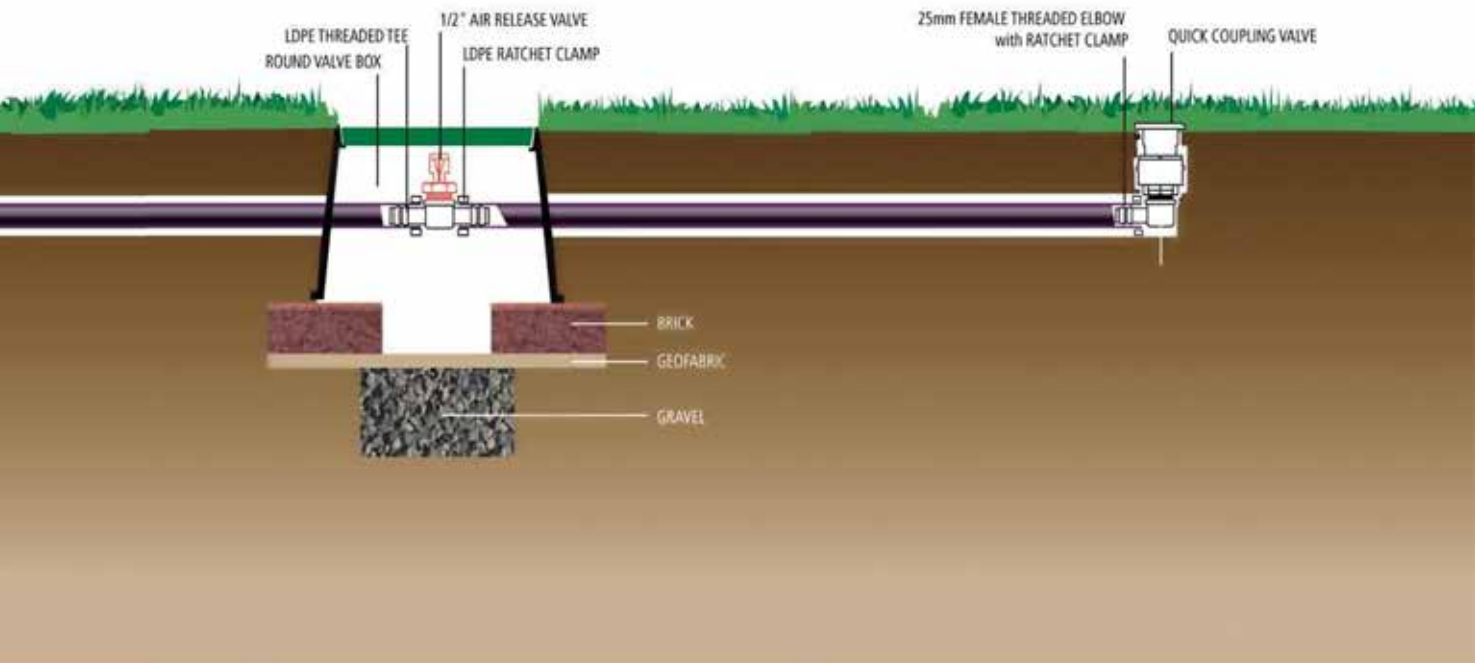
ZONE ASSEMBLY

1. 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.
2. Attach the 25mm End Connectors to the end of the header assembly using a 25mm ratchet clamp.
3. Using the punch tool, insert holes into the 25mm LDPE at lateral spacings. With the 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.
4. Using 25mm LDPE, install the Flush Manifold opposite the header assembly.
5. Repeat the installation of Start Connectors between the dripperline and LDPE for the Flush Manifold.
6. 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 15mm 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

COMPLETING INSTALLATION

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

1. The cartridges in both the Disc filter and Techfilter are installed.
2. When turning on the system for the first time check for leaks being careful not to allow any debris into the dripperline
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.

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.

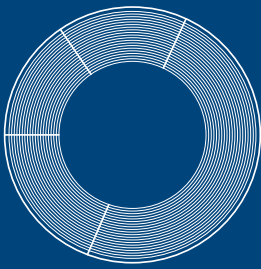
MANUAL FLUSH VALVE

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 16mm ratchet clamp to attached dripperline joiners. This will prevent debris or soil contamination occurring.

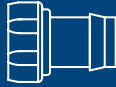
EFLOW START-UP KIT CONTENTS



- EFLOW CNL XR START-UP KIT**
200M Uniboline CNL XR
1.6L/Hr Flow Rate 0.4m Spacing
- EFLOW AS XR START-UP KIT**
200M Uniboline AS XR
1.6L/Hr Flow Rate 0.5m Spacing
- EFLOW START-UP KIT (NON XR)**
200M Uniboline CNL
1.6L/Hr Flow Rate 0.4m Spacing


Standard Kit **x5**

CNL XR & AS XR Kits **x3**




25mm FBSP x
25mm Nut & Tail

x16



25mm Ratchet Clamp


x1



25mm Super Filter 120 Mesh


Standard Kit **x1**

CNL XR & AS XR Kits **N/A**




25mm Techfilter

x5




16mm LDPE Joiner

x1



16mm x 3/4"
FBSP Threaded Elbow

x1




Budget Punch Tool

x40




16mm Ratchet Clamp

x1




15 mm MBSP
Bermad Vacuum Breaker

x1




25mm x 1/2"
FBSP Threaded Tee

x2




25mm LDPE Joiner

x2



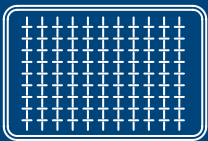
25mm LDPE End Plug

x1




150mm Round Valve Box

x1




Rectangular Valve Box

x1




20mm Quick
Coupling Valve

x1



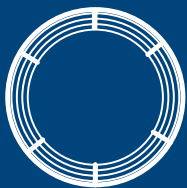
20mm Plastic
Quick Coupling Key

x30



Straight Take-off

x1



50m x 25mm LDPE Lilac
(Supplied separately)

EFLOW ADD ON KIT CONTENTS




- EFLOW CNL XR ADD ON KIT**
200M Unibioline CNL XR
1.6L/Hr Flow Rate 0.4m Spacing
- EFLOW AS XR ADD ON KIT**
200M Unibioline AS XR
1.6L/Hr Flow Rate 0.5m Spacing
- EFLOW ADD ON KIT (NON-XR)**
200M Unibioline CNL
1.6L/Hr Flow Rate 0.4m Spacing




x15

25mm Ratchet Clamp




x2

25mm LDPE Joiner



x2

25mm LDPE End Plug




x1

15mm MBSP
Bermad Vacuum Breaker




x40

16mm Ratchet Clamp



x5

16mm LDPE Joiner




x1

25mm x 3/4"
FBSP Threaded Elbow




x1

150mm Round Valve Box




x1

25mm x 1/2"
FBSP Threaded Tee




x30

Straight Take-off




x1

25mm LDPE Tee



x1

50m x 25mm LDPE Lilac
(Supplied separately)



x1

20mm Quick
Coupling Valve



GRAVEL/SAND



SANDY LOAMS



LOAMS



CLAY LOAM



LIGHT CLAYS



MEDIUM/HEAVY CLAY

SOIL TEXTURE	SOIL STRUCTURE	DISPERSAL RATE		AREA REQUIRED	DRIPPER LENGTH	
		WEEKLY	DAILY		1L/DAY	0.5M SPACING
		MM	MM	MM2	MM	MM
GRAVEL/SAND	Structureless Massive	35	5.00	200	400	200
SANDY LOAMS	Weakly Structured	35	5.00	200	400	200
SANDY LOAMS	Massive	35	5.00	200	400	200
LOAMS	Highly / Moderately Structured	28	4.00	250	500	250
LOAMS	Weakly Structured or Massive	28	4.00	250	500	250
CLAY LOAMS	Highly / Moderately Structured	25	3.50	285	570	285
CLAY LOAMS	Weakly Structured	25	3.50	285	570	285
CLAY LOAMS	Massive Structured	25	3.50	285	570	285
LIGHT CLAYS	Strongly Structured	20	2.90	345	690	345
LIGHT CLAYS	Moderately Structured	20	2.90	345	690	345
LIGHT CLAYS	Weakly Structure or Massive	20	2.90	345	690	345
MEDIUM/ HEAVY CLAY	Strongly Structured	15	2.14	467	934	467
MEDIUM/ HEAVY CLAY	Moderately Structured	15	2.14	467	934	467
MEDIUM/ HEAVY CLAY	Weakly Structured or Massive	15	2.14	467	934	467

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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