K LINE EFFLUENT

Effluent Solutions

Low cost, transportable, modular effluent dispersion system

EASY. EFFECTIVE. EFFICIENT.

Proudly distributed by:

Philmac®

The connection you can trust.

INTRODUCTION TO RX PLASTICS & PHILMAC

RX Plastics is New Zealand's leading manufacturer of irrigation products, pipe and effluent dispersal systems.

With over 30 years' experience, RX Plastics has a strong innovation focus and dedication to high quality thermoplastic solutions for water transport and dispersion.

The RX Irrigation and Effluent solutions are proudly distributed in Australia by Australian manufacturer and distributor, Philmac.

As members of the Aliaxis group of companies, RX Plastics and Philmac have access to a worldwide presence and 15,000 employees dedicated to the development and supply of special plastic pipe and fitting products.

Philmac has over 80 years' experience in the design and manufacture of world leading compression fittings and valves for polyethylene pipelines for the global market. The K-Line Irrigation and Effluent solutions are supported by Philmac's local distribution centres, Australian contact centre and dedicated sales team.

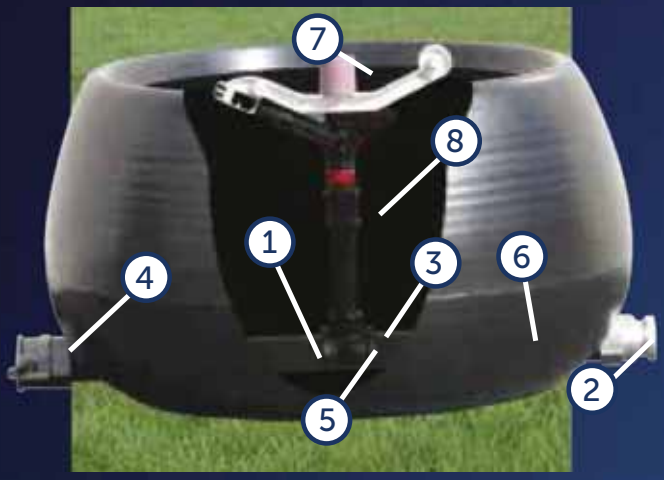
WHAT IS THE K-LINE EFFLUENT SOLUTION?

K-Line Effluent is a revolutionary, specially formulated flexible tubing and unique patented pod sprinkler system designed to provide a cost effective and efficient method for effluent dispersion.

The heart of the system is a series of highly durable patented transportable pods. Made from advanced thermoplastics, the pod protects a sprinkler that is firmly attached to the exceptionally strong and flexible polyethylene (PE or poly) K-Pipe that resists kinking, abrasive soils, freezing, UV light and the stresses of transporting the K-Line system.

K-Line is a low pressure transportable and modular effluent dispersion system designed to distribute green water with a slow, efficient absorption method similar to rain – saving time, labour and effectively utilising effluent waste. The low application rate helps to remove the risk of ponding and run-off allowing better soil absorption. The K-Line system can be easily shifted by an ATV/quad bike or similar tow vehicle in minutes. K-Line's modular design can adapt and grow with your needs.

K-LINE MAX^{70} EFFLUENT COMPONENTS



1 **RX PP Riser**
for 800mm x 50mm thread, both ends

2 **Male Camlock**

3 **Tapping Saddle**
63mm x 25mm with insert top

4 **Female Camlock**

5 **3 x U Bolts**
6 x Nits
6 x Washers
4 x Spacers

6 **2 x Saddle**
63 mm saddle

7 **7025 S Senninger**
5.56 – 9.53mm nozzles specifically for effluent applications

8 **1 x RXHS 25**
RX Hex socket 25mm
1 x RXPPR 25
RX Poly Riser 25mm

Number	Element	K-Line Standard	K-Line Mid	K-Line Max
1	LD Pipe or Riser	40/45mm LDPE	40/45mm LDPE	800 x50mm PP riser
2	Male Camlock	N/A	N/A	2" males x FI BSP
3	Tapping Saddle	40 or 45mm KLTPS	40 or 45 KLTPS	63 x 25mm tapping saddle
4	Female Camlock	N/A	N/A	2" Females x FI BSP
5	U-Bolt	UBSS3240	UBSS3240	UBSS63
6	Saddle	N/A	N/A	2 x 63mm Tapping saddles
7a	Sprinkler	Naan5022	Senninger 5023	Senninger 7025
7b	Sprinkler	Senninger compact	N/A	Senninger 8025
8a	Riser with socket	Naan Adaptor	Mid Adaptor	Sen70. adaptor
8b	Riser with socket	N/A	N/A	Sen80. adaptor

NB: Tow Hooks, Sprinkler Nozzle colour, Pipe fittings, Stock guards and camlocks to be added
NB: Max pods come with manifold complete (i.e. camlocks, tapping saddle, riser). Sprinkler and adaptor need to be chosen.

Senninger 8025

Pressure (Bar)	2.50	2.75	3.00
#36 Nozzle (14.29mm)			
(m^3/hr)	11.99	12.57	13.14
Diameter (metres)	47.7	48.9	50.1
#38 Nozzle (15.08mm)			
(m^3/hr)	12.93	13.55	14.15
Diameter (metres)	48.3	49.6	50.8
#40 Nozzle (15.88mm)			
(m^3/hr)	-	15.19	15.88
Diameter (metres)	-	50.2	51.4

Senninger 5023

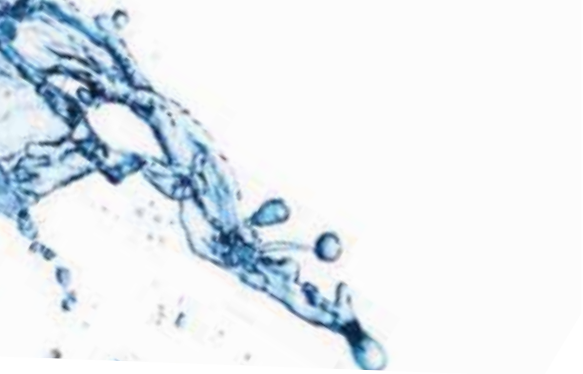
Pressure (Bar)	2.00	2.50	3.00
#15 Nozzle (5.95mm)			
(m^3/hr)	1.9	2.1	2.3
Diameter (metres)	24.6	27.0	29.0
#16 Nozzle (6.35mm)			
(m^3/hr)	2.1	2.4	2.6
Diameter (metres)	25.0	27.0	30.0
#17 Nozzle (6.75mm)			
(m^3/hr)	2.4	2.7	2.9
Diameter (metres)	25.0	28.0	30.0

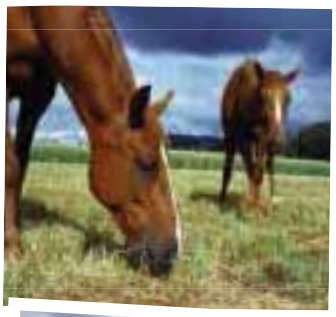
Senninger 7025

Pressure (Bar)	2.50	2.75	3.00
#20 Nozzle (7.94mm)			
(m^3/hr)	3.67	3.85	4.03
Diameter (metres)	38.3	39.4	40.5
#22 Nozzle (8.73mm)			
(m^3/hr)	4.43	4.63	4.82
Diameter (metres)	38.9	40.6	42.2
#24 Nozzle (9.53mm)			
(m^3/hr)	5.15	5.39	5.62
Diameter (metres)	40.2	41.9	43.6

Naan 5022

Pressure (Bar)	2.00	2.50	3.00
Green (3.2mm)			
(m^3/hr)	0.57	0.64	0.70
Diameter (metres)	22.0	22.5	23.0
Blue (3.5mm)			
(m^3/hr)	0.66	0.74	0.81
Diameter (metres)	23.0	23.5	24.0
Black (4.0mm)			
(m^3/hr)	0.85	0.94	1.03
Diameter (metres)	23.5	24.3	25.0





PRODUCT LISTING

PRODUCT NO.	DESCRIPTION
K-LINE EFFLUENT PODS COMPLETE WITH SENNINGER SPRINKLERS	
KLMAX8025SEN	K-line Max Effluent Pod Senninger 8025
KLMAX7025SEN	K-line Max Effluent Pod Senninger 7025
KLMID5023SEN	K-line Mid Effluent Pod Senninger 5023
PIPE	
LD40100	K-Line 40mm X 100m LD POLYPIPE
LD40150	K-Line 40mm X 150m LD POLYPIPE
LD45125	K-Line 45mm X 125M LD Polypipe
KPIPE6340	Coils 63mm K-Pipe

* Freight - for all pod/pipe orders freight into store is an additional charge.
# Indicates the product is not a stock item, and will be ordered in by request.
Product codes without a symbol indicates the product is available as a stock item from the local Philmac branch.
Note that this is to be treated as a guide only, and stock status may differ between Philmac state distribution centres in line with local market preferences.

EXAMPLES OF SHIFTING THE K-LINE MAX^{70}

Layout of the system

The shift pattern is quite different compared to a K-Line™ Irrigation system. With an irrigation system it is important to shift the system when it is running. This is not practical when the system is filled with effluent.

The K-Line™ Max70 lines are therefore shifted when they are not running. The K-Line™ Max70 lines themselves should be made with either 50mm or 63mm K-Pipe™ tubing and should match the K-Line™ Max70 pod. This allows the same M & F fittings at each end, so the lines can be connected to the submain at either end of the line with the male adaptor. The K-Lines need to be pulled directly from one end to the other. Because the lines are short and have only a few pods, this process is very easy. The process works for paddocks of all shapes and sizes.

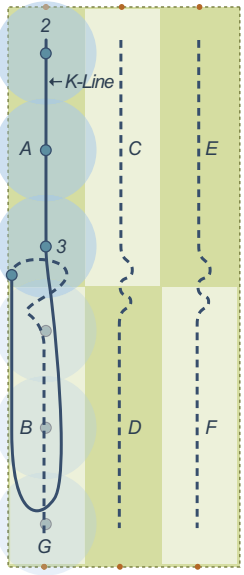
The simple process is as follows:

Go to the submain valve point (1) to isolate the system.

Remove the tow hook from the line end (2).

Uncouple the feedline from the first K-Line™ Max70 pod (3), then connect the tow hook onto the K-Line Max70. Tow (dead pull) towards point (G). The K-Line™ will end up in position (B). Unhook, then re-couple the K-Line™ back at the feedline. Repeat this shifting process for the line until the field has been irrigated completely (position F).

When the field has been irrigated completely, disconnect the sprinkler lines from each other and also from the feed line, tow the sprinkler line into a new paddock and you're ready to start the disposal rotation again.



Shifting rotation within a typical paddock (3 pods).

Line moves:
A to B,
B to C,
C to D,
D to E,
E to F.

WHICH K-LINE SYSTEM SUITS MY NEEDS?

Selection of a suitable K-Line pod system and a successful installation is very much dependent on the degree of separation of solids from the liquids. The higher the level of filtration achieved, the smaller the pod and sprinkler nozzle required.

For example, the K-Line Std Effluent pod has nozzle selection of 4.0mm therefore the separation of solids would need to be better than 3.0mm.

Please use the table below to help ensure you choose the right system for your application.

System	Requirements	Benefits			
	Minimum Filtration	Palatability	Distribution	Application Rate	Nutrient Management
 **K-Line™ Std Naan 5022** 430 x 230mm The K-Line™ standard has a Naan 5022 sprinkler with a 4mm nozzle and therefore requires the best liquid quality.	  Weeping Wall or Solid Separator AND Storage 	Optimum	Optimum	Optimum	Optimum
 **K-Line™ Mid Senninger 5023** 560 x 290mm The K-Line™ mid has a Senninger 5023 sprinkler and a nozzle up to 6.35mm, therefore it can handle a slightly less liquid quality.	  Two Pond Storage	Optimum	Optimum	Optimum	Excellent
 **K-Line™ Max70 Senninger 7025** 860 x 590mm The K-Line™ Max70 has a senninger 7025 sprinkler and a nozzle up to 9.53mm. It can therefore handle a lower liquid quality.	  Two Pond Storage	Good	Excellent	Optimum	Good
 **K-Line™ Max80 Senninger 8025** 860 x 590mm The K-Line™ Max80 has a senninger 8025 sprinkler and a nozzle up to 15.88mm. It can therefore handle the lowest liquid quality.	 Pumping Sump with Stone Trap AND Storage 	Good	Excellent	Optimum	Good

Simply scan the code with your smart phone to see how easy it is to move the K-Line Pod System.

K-Line Effluent System Features	Benefit
Low capital cost	Low capital cost to get up and running.
Easy to do	Ease of installation, use and operation – making it an ideal DIY project.
Multi-terrain	Suits all types of terrain.
Low pressure	Low pressure requirements.
Nutrient dispersion	Best possible use of nutrients in farm dairy effluent.
Low application rates	Removes the risk of ponding, allowing improved filtering by the soil of bacteria resulting in better compliance with local council requirements.
Improved pasture	More palatable pasture for livestock compared to effluent applied by travelling irrigator.
Expandable	Modular system that can grow with your needs.
Movable	Transportable and able to cover a large area by shifting using a quad bike or ATV.
Economical	Low maintenance costs as the only moving parts are the sprinklers, pipe, pumps and valves.

WHAT'S AVAILABLE IN THE K-LINE RANGE?

K-Line Standard (Std) Pod Effluent range

(430 x 230mm) offers the **Naan 5022 sprinkler** with nozzle sizes of 3.2 to 4.0mm, with a maximum spacing of up to 15m, a recommended working pressure of 2.0 to 3.0 bar, flow rate of 570 to 1030 Litres/hour and diameter of 22 to 25m. Sprinklers are colour coded for easy identification. This system requires the best liquid quality available (i.e. highly filtered/separated).

K-Line Mid Effluent pod range

(560 x 290mm) provides a slightly larger pod meaning greater stability during transport offering a **Senninger 5023 sprinkler** with nozzle sizes of 5.95 to 6.75mm, with a maximum spacing of up to 25m, a recommended working pressure of 2.0 to 4.5bar, flow rate range of 1900 to 2900 litres/hour and a diameter range of 28 to 35.0m. Sprinklers are colour coded for easy identification. This system requires slightly less liquid quality than the above Std Pod range.

K-Line Max Effluent pod range

(860 x 590mm) is the largest pod size offering even greater stability during transport and ability to house even larger sprinklers, with two options:

- **Max^{70} with Senninger 7025 sprinkler** with nozzle sizes of 7.94mm to 9.53mm, with a maximum spacing of up to 40m, a recommended working pressure of 2.5 to 3.0 bar, flow rate range of 3670 to 5620 litres/hour and a diameter range of 38.3 to 43.6m. Sprinklers are colour coded for easy identification.
- **Max^{80} with Senninger 8025 sprinkler** with nozzle sizes of 9.53 to 15.88mm, with a maximum spacing of up to 40m, a recommended working pressure of 2.5 to 3.0 bar, flow rate range of 5450 to 15,880 litres/hour and a diameter range of 39.5 to 51.4m. Sprinklers are colour coded for easy identification.

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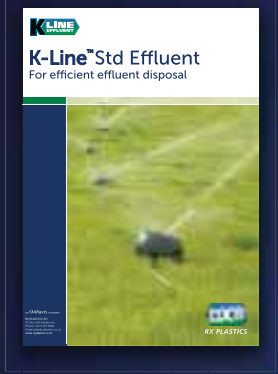
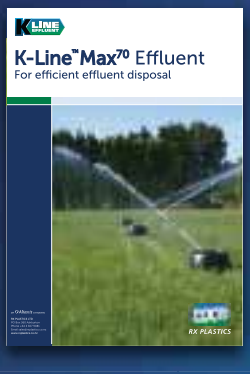
RESOURCES AVAILABLE

The following resources are readily available via the Philmac website at **www.philmac.com.au** as well as a selection of videos on the product in use.



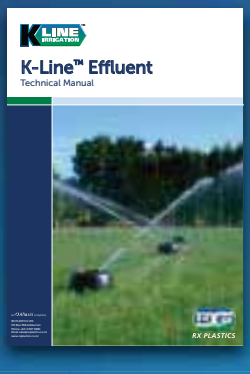
K-Line Std Effluent brochure

K-Line Mid Effluent brochure



K-Line Max^{70} Effluent brochure

K-Line Max^{80} Effluent brochure



K-Line Effluent Technical Manual

Available From:

Ph: 1800 755 899
Fax: 1800 244 688
www.philmac.com.au

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