

K-Line™ Max⁸⁰ Effluent

For efficient effluent dispersal



K-Line Irrigation N.A.
4270 Hollywood Rd
St Joseph, MI 49085
Free 866-665-5463
www.k-linena.com

K-Line™ Max⁸⁰ Effluent



Whether you are distributing water or wastewater, K-Line Irrigation has the solution for you. With a large selection of strong supporting brands, K-Line Irrigation can assist, whatever your requirements.

We've got what you need

K-Line Irrigation has a wide range of products to support your water and wastewater distribution.



K-Line's portable stock tanks have the same flexibility as the irrigation system. The tanks can be easily towed from paddock to paddock



Polyethylene Pipe (Polypipe)
K-Line has a range from 32mm - 50mm to suit many needs.
Pipe is rated 75 psi - 110psi.

What is K-Line™ Irrigation?

- K-Line™ Irrigation is a flexible hose line sprinkler system originally designed for irrigation. However, the low application rate makes the K-Line™ Irrigation system well suited to effluent distribution. At the heart of the system is a series of tough plastic pods protecting a sprinkler, firmly attached to special K-Line™ low density polyethylene tubing.
- K-Line™ provides an excellent method of liquid dispersal options from the many variable effluent sources
- K-Line™ systems are all designed to operate at low pressure
- K-Line™ provides a number of product choices which give you maximum flexibility in a customized effluent dispersal system for your farm
- K-Line™ will suit any paddock shape, size or terrain
- K-Line™ is easily moved by any ATV or small tow vehicle
- K-Line™ is a low application rate system

Farmer Benefits

- Low capital cost
- Ease of installation, use and shifting
- Tailor application to staff availability
- Low application rate to remove the risk of ponding and runoff, allowing better filtering by the soil of bacteria, resulting in better compliance to requirements
- Better retention of nutrients lowers fertilizer requirements
- Control of application with automated timers
- During busy times, (e.g. calving) effluent irrigation can be avoided
- Best possible use of the nutrients in farm dairy or feedlot effluent

Production Benefits

- Farmers say that K-Line™ provides them with greater pasture growth rates
- K-Line™ provides a more uniform application compared to travelling irrigators
- More palatable pasture compared with effluent applied by a travelling irrigator
- Trials show the losses of phosphorus and bacteria to drainage water are only 5-7% of the losses compared to a travelling irrigator when soil is near field capacity
- It also shows nitrogen levels in the drainage are minimized to almost zero (figure 1)

Drainage from a 'Mole and Tile' drained paddock after effluent application

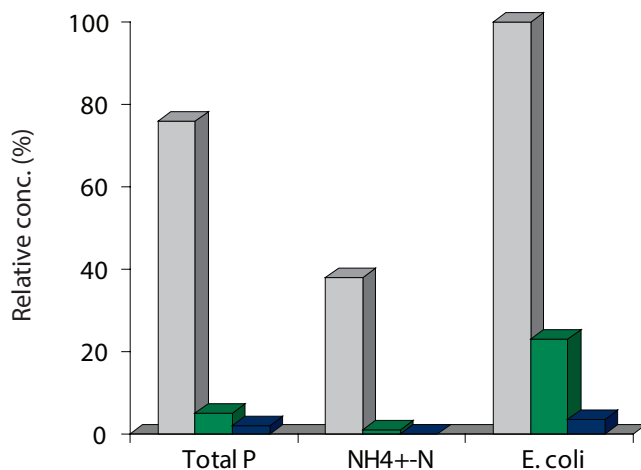


Figure 1.

- Rotating twin gun
- K-Line™
- K-Line™, intermittent pumping

Why use K-Line™ Max⁸⁰ Effluent?

- Low rate of application
- No leaching or run-off
- No ponding
- Cost effective
- 3 pods to replace a travelling irrigator
- Large nozzle to eliminate blockages
- Easily separated by cam locks and shifted individually
- Low maintenance
- Meets all governmental requirements

Senninger 8025 S Sprinkler

- The 80 series full-circle sprinklers distribute effluent over a large diameter, for higher volume systems
- Senninger sprinklers can achieve application rates down to as low as .08" per hour. This reduces the risk of ponding and run-off and other forms of preferential flow. The soil has time to filter nutrients and bacteria
- Outlasts and costs less than brass or aluminium sprinklers
- Built for strength and durability using high-impact, engineering-grade thermoplastics and top quality stainless steel components
- Built-in hex wrench for easy in-the-field maintenance
- Standard lower bearing pipe thread: 1 1/4" male thread
- 25° angle for maximum distance of throw
- Single nozzle design minimizes clogging

Sprinkler Operation

- Special Senninger 8025 sprinklers have a range of nozzles down to 3/8" in size. However the selection of 3/8" is only required when a very low application rate is required
- The figure to the right shows the flow rate and diameter of throw of the recommended K-Line™ Max⁸⁰ sprinkler nozzles
- Complete flow rates: 23.6 - 91.8 gpm



K-Line™ Max⁸⁰ Effluent components



- | | |
|---|---|
| <p>1 RX PP Riser for 31.5" x 2" thread, both ends</p>  | <p>5 3 x U Bolts
6 x Nuts
6 x Washers
4 x Spacers</p>  |
| <p>2 Cam 2"A - Male</p> | <p>6 2 x Plassim Saddle 63mm saddle</p>  |
| <p>3 Plassim 63mm x 1" with insert top</p>  | <p>7 8025 S Senninger 3/8" - 5/8" nozzles specifically for effluent applications</p>  |
| <p>4 Cam 2"D - Female</p> | <p>8 1 x RXHS 32 RX Hex socket 32mm
1 x RXRB 32 x 1" RX Hex Reducing Bush 1 1/4" x 1"
1 x RXPPR 1" RX Poly Riser 1"</p> |



Pod comes completely assembled, all you need to do is connect camlocked pipe to cam locks.

Figure 2. Pressure and flows of the Senninger 8025

Pressure (PSI)	40	45	50
#36 Nozzle (9/16")			
(GPM)	55.5	58.9	62.1
Diameter (feet)	161	166	170
#38 Nozzle (19/32")			
(GPM)	59.9	63.5	66.9
Diameter (feet)	163	168	172
#40 Nozzle (5/8")			
(GPM)	67.1	71.1	75.0
Diameter (feet)	165	170	174

System components

- The K-Line™ Max⁸⁰ pod comes complete with 2" female and male camlocks
- K-Line™ provides a 63mm K-Pipe™ x 130 feet that is M&F (male and female) camlocked (2" connectors)
- With this combination, the lines can be connected in any order to the pods
- To ease shifting, K-Line™ also provides end tow units with 2" cam locks

Spacing and Pipe System

- Special 63mm K-Pipe™ tubing complete with M&F (male and female) camlocks come pre-fabricated to instantly connect to your new K-Line™ Max⁸⁰ effluent pods
- The special K-Pipe™ is designed to be flexible but highly resilient to stresses or bending during the shifting process

K-Line™ Max⁸⁰ Effluent

What You Need.

Happy Farmer!



Happy Cows!



K-Line™ Effluent



Pump System



Cows Enter Shed



Dairy Shed



Stone Trap

The process starts with a visit from your consultant to plan the K-Line™ Irrigation Effluent System. The consultant will examine the shape and size of your property, land dispersal area, the quality and quantity of the effluent supply, effluent rotation and the soil types involved.

Your requirements, together with hydraulic analysis, pressure requirements, pump sizes, power systems and budget will determine the options. The K-Line™ Max⁸⁰ minimum requirements are a suitable stone trap and sump to draw from. The system typically consists of a pump, main line, sub main and K-Pipe feed line.

Assembly is so simple, many people choose to install the sub main, feed and sprinkler lines themselves.

General principles of effluent application would suggest that an application of 1/2" per day would be a maximum, with an application area of 20 A. /100 cows considered as best management practice.

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 while it is running. This is not practical when the system is filled with effluent. The K-Line™ Max⁸⁰ lines are always shifted when they are not running.

The K-Line™ Irrigation Max⁸⁰ lines themselves should be made with either 50mm low density pipe or 63mm K-Line tubing and should match the K-Line™ Irrigation Max⁸⁰ pod. This allows the same M&F fittings at the ends, so the lines can be connected to any of the lengths of K-Line tubing.

The K-Line™ line needs to be pulled directly from one end to the other because the lines are short and only one pod. This process is very easy. The process works for paddocks of all shapes and sizes.

The simple process is as follows:

Move the single pod up to 165 feet (ensure that no overlap occurs). Work in a 165 x 165 grid until the paddock is complete. When the field has been irrigated completely, disconnect the K-Line™ Max⁸⁰ pod from the feed line, tow the sprinkler line and the feed line into a new paddock and you're ready to start the dispersal rotation again.

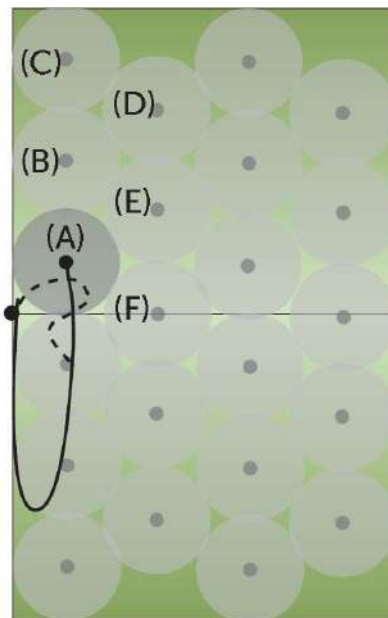


Figure 3
Shifting rotation within a typical paddock (single pod)
Line moves;
A to B
B to C
C to D
D to E
E to F...

Best management practice

For a 1/2" application, run the system for three to four hours. It is recommended that the effluent dispersal area should be 20 A. /100 cows as best management practice.

Selection Criteria for your K-Line™ Max⁸⁰ System

Selection of a suitable K-Line™ effluent pod and a successful installation is very much dependent on the degree of separation of the solids from the liquids.

For the K-Line™ Max⁸⁰ Effluent pod the nozzle selection is from 3/8" - 5/8". Successful separation of the solids for the K-Line™ Max⁸⁰ effluent pod system requires only a good stone trap and a pumping sump.



		Requirements		Benefits			
		Minimum Filtration	Palatability	Distribution	Application Rate	Nutrient Management	
<p>K-Line™ Std Naan 5022 9" H x 15" W The K-Line™ Standard has a Naan 5022 sprinkler with a 5/32" nozzle and requires the best liquid quality.</p> 	 Weeping wall or  Solid Separator  & Storage	Optimum	Optimum	Optimum	Optimum		
<p>K-Line™ Mid Senninger 5023 11" H x 22" W The K-Line™ Mid has a Senninger 5023 sprinkler with a nozzle up to 1/4". It can handle a slightly lower liquid quality.</p> 	 Two Pond Storage 	Optimum	Optimum	Optimum	Excellent		
<p>K-Line™ Max⁷⁰ Senninger 7025 18" H x 32" W The K-Line™ Max⁷⁰ has a Senninger 7025 sprinkler with a nozzle up to 3/8". It can handle a lower liquid quality.</p> 	 Single Pond Storage	Medium	Excellent	Optimum	Good		
<p>K-Line™ Max⁸⁰ Senninger 8025 18" H x 32" W The K-Line™ Max⁸⁰ has a Senninger 8025 sprinkler with a nozzle up to 5/8"mm. It can handle the lowest liquid quality.</p> 	 Pumping Sump with Stone Trap	Satisfactory	Excellent	Optimum	Okay		

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