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K-LINE™ IRRIGATION SOLUTIONS

**3 Pod DIY Pack,
with Naan 427
Sprinkler**

**Installation and
user manual**

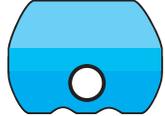


by **alixis**

1: View the K-line installation video

Please review the K-LINE® Installation video on the USB drive to become familiar with the K-LINE® System.

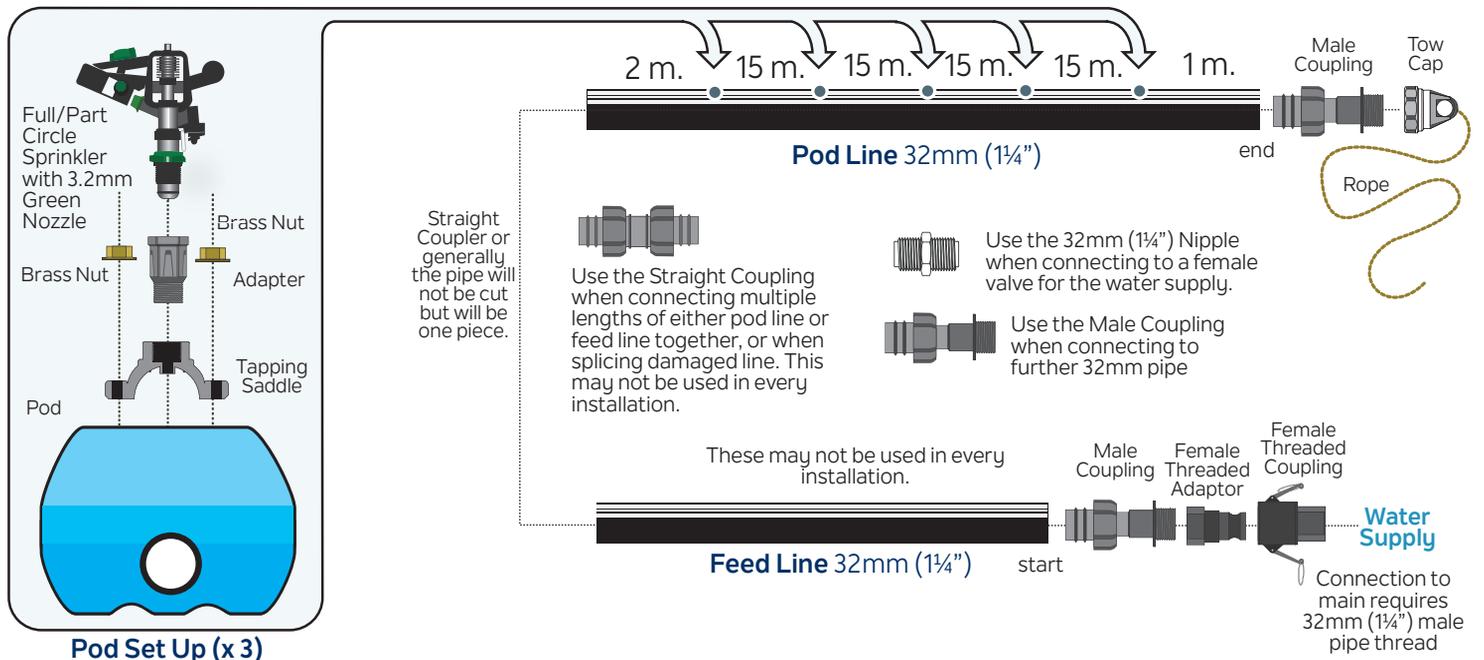
2: Identify system components

 32mm Tapping Saddle (3) KLTPS32	 Adjustable Full/Part Circle Sprinkler Green Nozzle (3) NAAN427	 32mm K.PIPE® (66m.) 3 Pod Pack K.PIPE32.3PP.066	 Male Coupling (3) KLMC32	 Straight Coupling (1) KLSC32	 Installation USB (1) USB.KLFPACK
 Sprinkler Adaptor (3) NAAN-ADAPTOR	 Tow Cap (1) RXTC32	 Female Threaded Adaptor (1) CAM32A	 32mm Hex Nipple (1) RXHN32	 14mm Spade bit w/limiter x 13mm Hex (1) KLTL14.DRILL	 13mm metric deep socket x 3/8" (1) KLTL.3.8.13SOCKET
 K-LINE® Pod (3) KLSTD.POD	 Brass Nuts (6) KLSP-BRASS NUT	 Female Threaded Coupling (1) CAM32D	 Drill head Adaptor 3/8" drive x dirll head (1) KLTL.DRILL.ADAP	 Rope (2 m.) KL-ROPE	 PTFE Thread tape (1) CT

3: Tools that may assist with installation

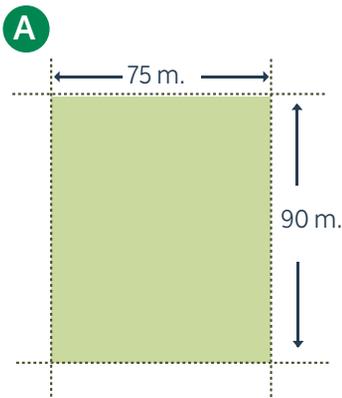
 Adjustable pipe wrench	 Large channel lock pliers	 Rubber mallet	 3/8" Ratchet wrench	 Socket extension 3/8" x 150mm KLTL3.8.150EXTN	 Tie-down hook & rope (optional)
 Cordless drill	 1 1/4" to 2" poly pipe cutters (or hacksaw)	 Water	 Measuring wheel or 50m tape(s)	 Marker flags or tent pegs	 20mm wrench (optional)
					 30mm wrench (optional)

4: K-Line system overview

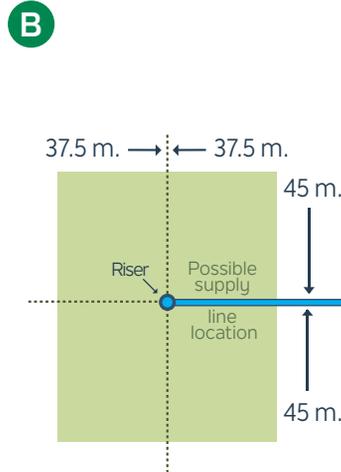


5: Plan you irrigation system layout*

Field shapes and dimensions may not match this ideal layout. K-LINE'S signature flexibility allows for adaptation to other field dimensions. See the additional "Sample Designs" at the end of this manual.

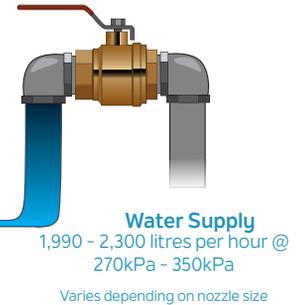


Determine the area of the field to be irrigated.
Up to approx. 0.675 hectares.



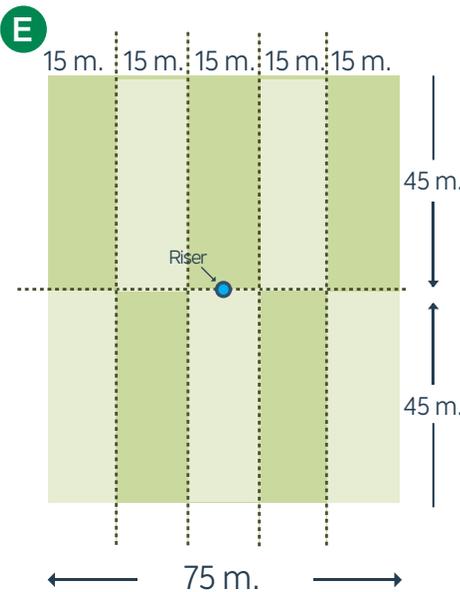
Determine the center of the field. This is the location of the riser.

Determine the supply line route from the water supply to the center of the field. The water supply line should be 32mm (1¼") or larger from the water source, beginning at a point where sufficient flow rate and pressure are available.



Consider your supply line. Supply line options include:

1. Buried (underground) PVC or polyethylene plastic pipe.
2. Lay-flat tubing (above ground), similar to fire hose, available from your irrigation dealer.
3. K.PIPE® Irrigation tubing (above ground). K.PIPE® is highly durable and specifically formulated to remain flexible, is freeze resistant, and has excellent UV resistance.



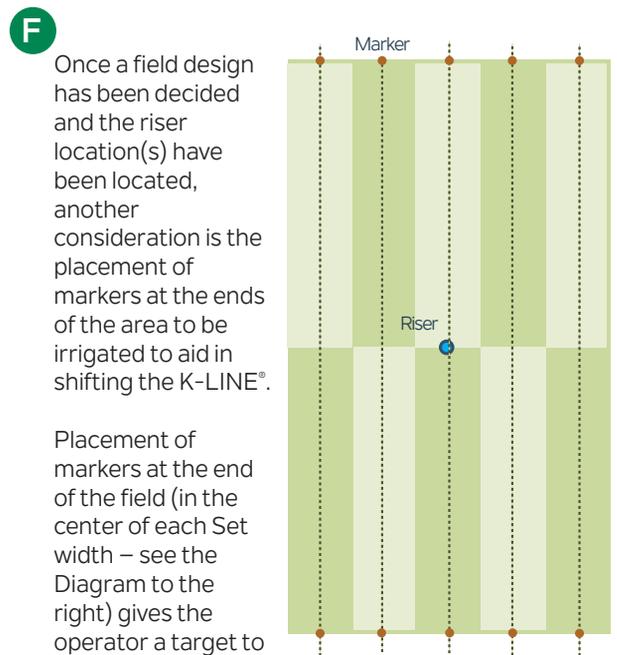
Determine Shift/Set Widths.

Shift/Set widths are recommended to be between 12 m. and 15 m.

The material included in a 3 pod kit allows for a field length of up to 90 m.

K-LINE'S great flexibility of design allows for numerous options in laying out a field. K-LINE® is adaptable in its ability to have more than one riser location. Sprinkler/pod lines can be curved to adjust to field shapes, obstacles, or terrain. Sprinkler nozzles are easily changed for adjusting application rates. Shifting more than once per day allows a larger area to be covered quickly. Extended irrigation sets can apply that long, slow rain that fills the soil profile and encourages a stronger, deeper and more efficient, and resilient, root system.

We have included many examples in our "Sample Designs" that are included in this kit to help identify irrigation opportunities for your situation. Call your K-LINE® supplier for any questions.



Once a field design has been decided and the riser location(s) have been located, another consideration is the placement of markers at the ends of the area to be irrigated to aid in shifting the K-LINE®.

Placement of markers at the end of the field (in the center of each Set width – see the Diagram to the right) gives the operator a target to aim for when shifting the K-LINE® (especially beneficial when becoming accustomed to shifting the K-LINE® or in irregularly shaped fields).

Markers are often brightly colored (fluorescent yellow, orange, or red) markers that can be attached to a fence; that offer excellent visibility.

* Generalised layout for 3 pod systems. Other pod numbers will alter the layout proportionally.

6: K-Line irrigation layout of the pod line

A Rolling out the Pod Line

Roll out the 32mm tubing 3-4 m. past the final marker to keep the end from rolling back during pod installation.



DO NOT ALLOW IT TO TWIST! The triple white line should face up for the entire length of the tubing.

***Hint:** It helps to put a heavy object on the ends of the K.PIPE® Tubing when rolling it out to keep the tubing in place and prevent it from rolling up behind you. The tubing will relax once rolled out and allowed to sit in the sun.

B Measuring pod placement

Using the measuring wheel or tape, mark out the pod positions with flags or tent pegs and confirm the pod positions.

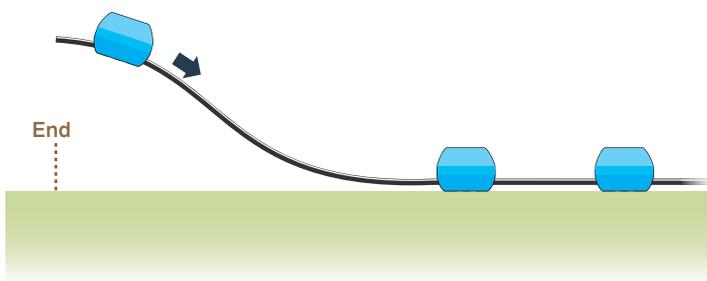


Note: Sprinkler/pod spacing is determined by field length and may differ if your area to be irrigated is less than 70m, (3 pod pack). For your K-LINE® Pod Irrigation Kit, recommended spacing up to, but not more than 15m. Dealer engineered K-LINE® layouts are usually between 12m and 15m.

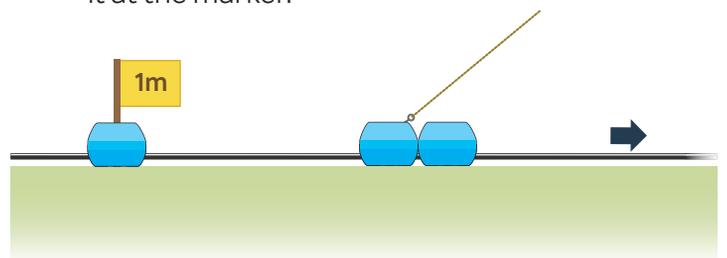
If you need assistance, call your supplier or contact RXP customerservice@rxplastics.co.nz.

7: Placing the pods

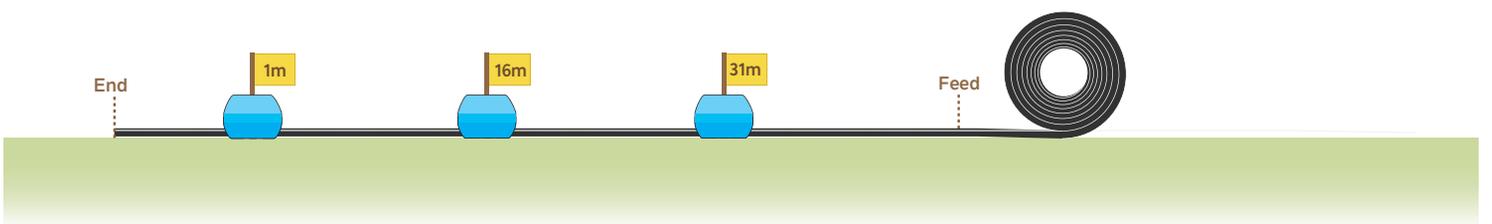
A Slide the pods onto the K.PIPE® tubing.



B Use the Tow Rope and Hook to pull all of the pods to the first marker. Unhook a pod, leaving it at the marker.

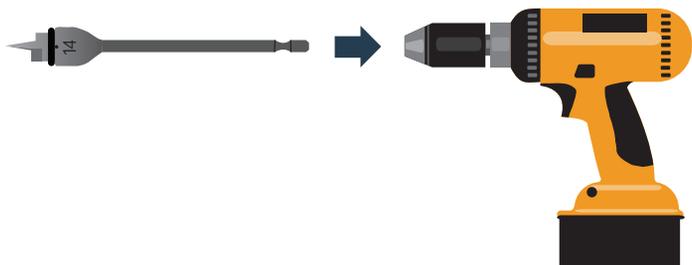


C Continue on to the remaining markers, leaving a pod at each.

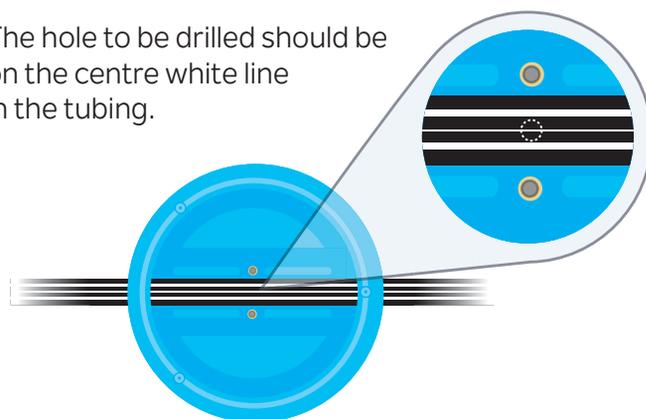


8: Tapping saddle installation

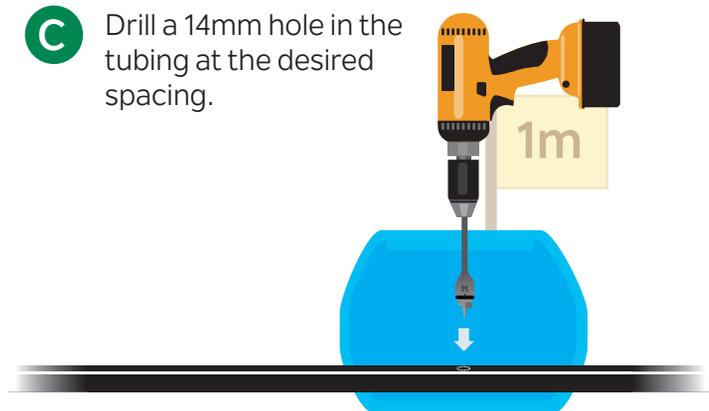
- A** Install the included K-LINE® spade drill bit w/limiter into a 13mm deep socket, extension and drill adaptor into a cordless drill.



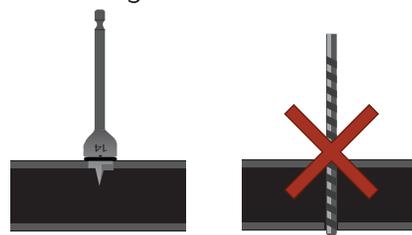
- B** The hole to be drilled should be on the centre white line in the tubing.



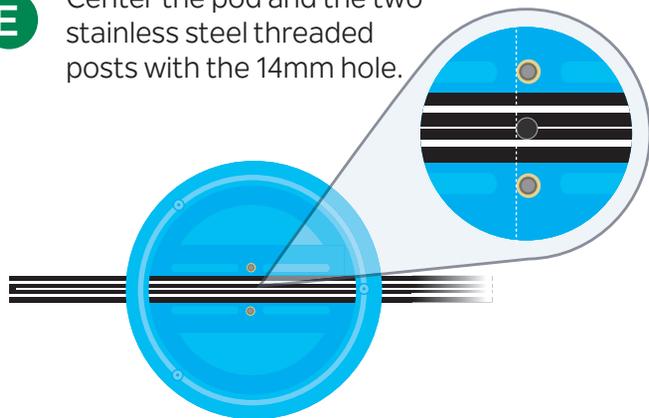
- C** Drill a 14mm hole in the tubing at the desired spacing.



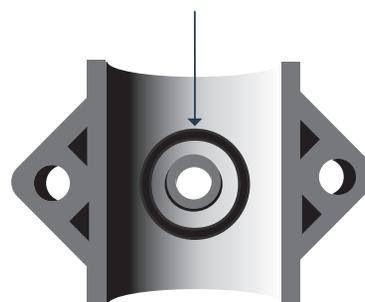
- D** **Caution: Do not use a 3rd party drill bit.** The K-LINE® Bit has a limiter attached to it to prevent the bit from being inserted too deeply and puncturing the opposite tubing wall. After drilling, remove the tubing chaff from each hole.



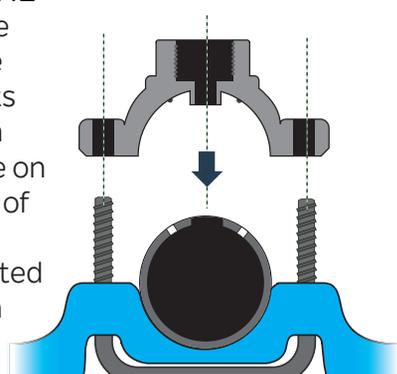
- E** Center the pod and the two stainless steel threaded posts with the 14mm hole.



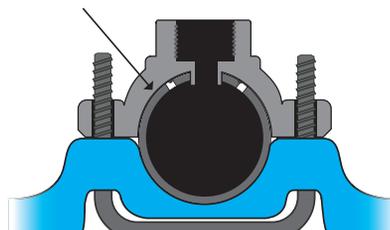
- F** Make sure that the rubber O-ring is in the groove on the underside of the K-LINE® Tapping Saddle.



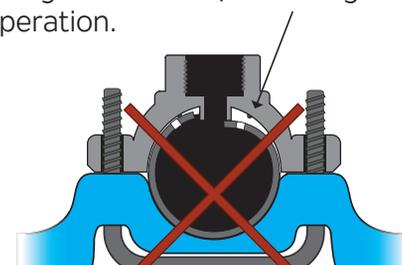
- G** Push the K-LINE® tapping saddle down over the threaded posts and be certain that the nipple on the underside of the tapping saddle is inserted into the 14mm hole.



The K-LINE® tapping saddle should sit snugly over the tubing without a gap.

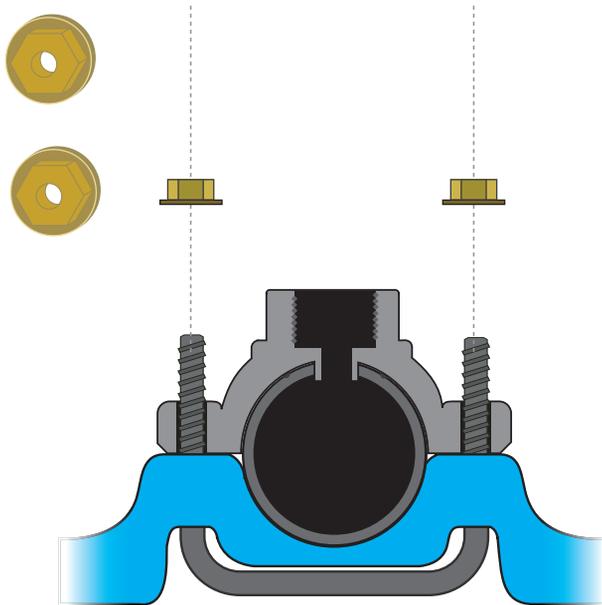


A gap might indicate that you are pinching the tubing on either side of the hole causing water to spray out into the pod during operation.

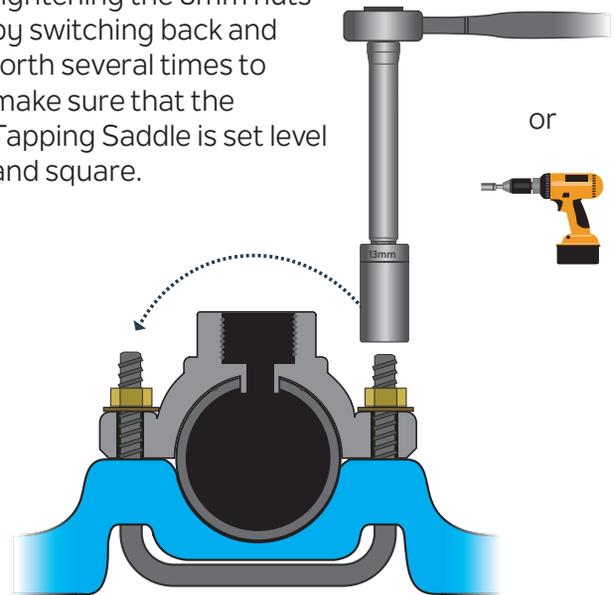


8: Tapping saddle installation (continued)

H Hand tighten a 8mm brass flange nut onto each post.

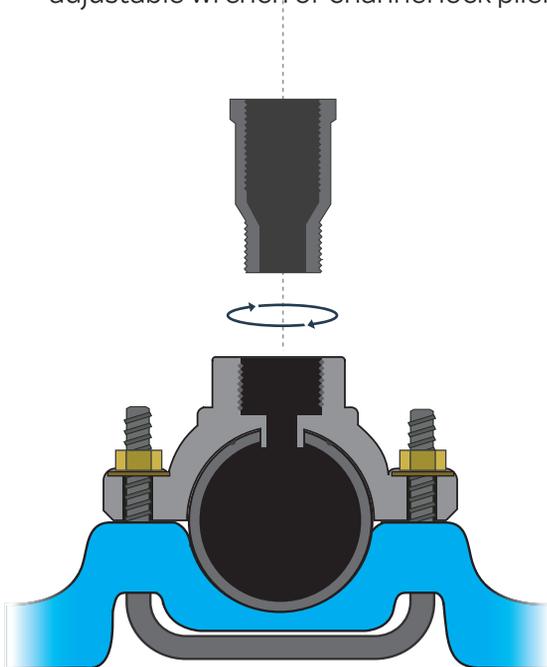


I With a 13mm socket (with 150mm or longer extension) and ratchet or speed brace alternate tightening the 8mm nuts by switching back and forth several times to make sure that the Tapping Saddle is set level and square.

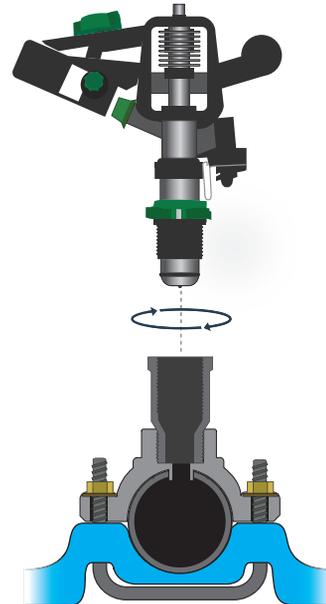


9: Impact sprinkler installation

A Hand start the adaptor into the K-LINE® tapping saddle (careful not to cross thread), then finish tightening with an adjustable wrench or channel lock pliers.



B Hand start the impact sprinkler (careful not to cross thread), then finish tightening with a 20mm open ended wrench or channel lock pliers.

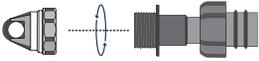


Repeat Steps 8 and 9 for each pod in the line.

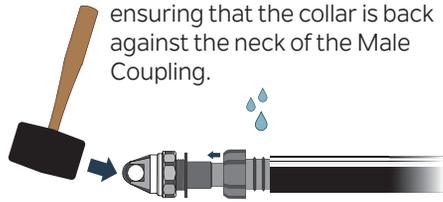
10: K-Line fittings installation onto the lines

A Attach the Male Coupling and Tow cap to the end of the Pod Line, as follows:

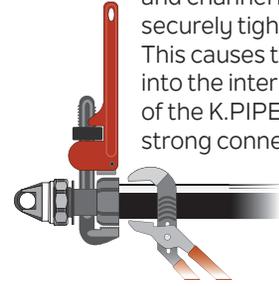
① Assemble the Male Coupling and Tow cap together, and tighten with a pipe wrench and channel locks.*



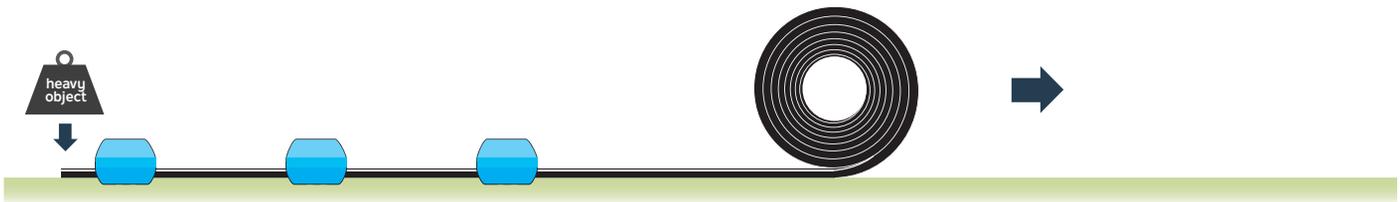
② Moisten the barbed end of the Male Coupling with water. Drive the Male Coupling and Tow cap into the K.PIPE® Tubing with a rubber mallet ensuring that the collar is back against the neck of the Male Coupling.



③ Hand tighten the collar of the Male Coupling onto the tubing, then finish by using a combination of pipe wrenches and channel locks to securely tighten the collar. This causes the barbs to bite into the interior and exterior of the K.PIPE® tubing for a strong connection.

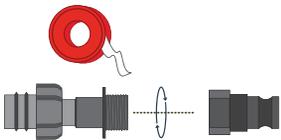


B Roll out the remainder of the 32mm tubing, this will be the **Feed Line**. In a 3 pod system it should be approximately 33m if your area to be irrigated is 60m wide. If your area to be irrigated is less than 60m, then the **Feed Line** should be at least long enough to run from the riser in the center of the field to the edge of the field.



C Attach the Male Coupling and Female Threaded Adaptor to the Start of the Feed Line, as follows:

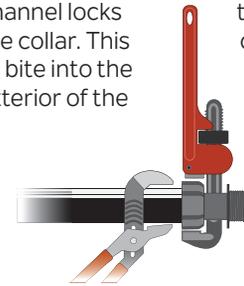
① Assemble the Male Coupling and Tow cap together, using thread tape on the threads to seal the connection, and tighten with a pipe wrench and channel locks.



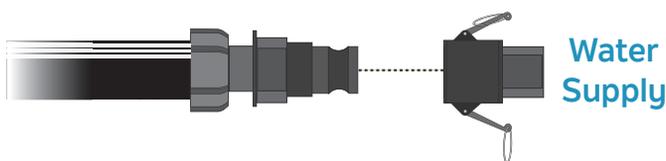
② Moisten the barbed end of the Male Coupling with water. Drive the Male Coupling and Tow cap into the K.PIPE® Tubing with a rubber mallet ensuring that the collar is back against the neck of the Male Coupling.



③ Hand tighten the collar of the Male Coupler onto the tubing, then finish by using a combination of pipe wrenches and channel locks to securely tighten the collar. This causes the barbs to bite into the interior and exterior of the K.PIPE® tubing for a strong connection.



D Attach the Camlock Female Threaded Adaptor to the Water Supply Line using the supplied Camlock Female Threaded Coupling.



This completes the K-LINE® installation.



Also supplied is a 32mm nipple and 32mm male coupling to assist with connection to your water supply.

K-Line Troubleshooting Guide

Symptom	Possible cause/solution
Partial or poor distribution from sprinkler	<ul style="list-style-type: none"> plugged nozzle - remove nozzle, check for obstruction obstruction in tubing - remove hook cap and flush line improper pump pressure - check pump damaged tubing leaking water - make square cuts to remove the damage, install Straight Coupling saddle improperly mounted on tubing - remove and mount according to pages 5 and 6, step 8
Pods rolling over during shifting	<ul style="list-style-type: none"> towing vehicle is too far from K-Line - keep 1-1.5m from the pod while shifting
Connectors coming loose	<ul style="list-style-type: none"> improper tightening of the K-Line connectors - cut off and discard 80mm of old scarred tubing when repairing (make sure you have a square cut), then use pipe wrenches to more firmly tighten the connectors - see page 7, step 10A
Water stream hits inside of the pod	<ul style="list-style-type: none"> tapping saddle is improperly tightened down - reposition tapping saddle and tighten down evenly, see pages 5/6 step 8
Feed Line loop gets too tight	<ul style="list-style-type: none"> Feed Line is too short - add more tubing or narrow the width of the irrigated area
K.Pipe tubing gets kinked	<ul style="list-style-type: none"> shifting the K.Pipe without water running when temperatures are hot - straighten the kinked K.Pipe tubing and use a rubber mallet to lightly pound the tubing back into shape

Performance Chart

Impact sprinkler options with 15m between sprinklers and a 15m shift width

Nozzle Color & Size	Operating Pressure	Output per Sprinkler (m /hr *)	Total Water Required for 3 Sprinklers	Water Application Rate mm/Hour	Total Applied Water in 24 hr. Set	Average Application Rate Per Week <small>Based on 8 Shifts with Continuous Running</small>
Green nozzle supplied as standard						
 Green - 3.2mm	250 kPa.	0.642 m /hr	1.93 m /hr	2.5 mm	69 mm	60 mm
	270 kPa.	0.668 m /hr	2.00 m /hr	2.6 mm	71 mm	62 mm
	300 kPa.	0.706 m /hr	2.12 m /hr	2.7 mm	75 mm	65 mm
Nozzles below are optional sprinkler nozzles available from a K-LINE® Dealer						
 Orange - 2.8mm	250 kPa.	0.504 m /hr	1.51 m /hr	1.9 mm	54 mm	47 mm
	270 kPa.	0.524 m /hr	1.57 m /hr	2.0 mm	56 mm	48 mm
	300 kPa.2	0.550 m /hr	1.65 m /hr	.1 mm	59 mm	51 mm
 Red - 3.0mm	250 kPa.	0.576 m /hr	1.73 m /hr	2.2 mm	61 mm	53 mm
	270 kPa.2	0.598 m /hr	1.79 m /hr	.3 mm	64 mm	55 mm
	300 kPa.2	0.630 m /hr1	.89 m /hr	.4 mm	67 mm	58 mm
 Blue - 3.5mm	250 kPa.2	0.742 m /hr	2.23 m /hr	.8 mm	79 mm	69 mm
	270 kPa.	0.770 m /hr	2.31 m /hr	3.0 mm	82 mm7	1 mm
	300 kPa.	0.812 m /hr	2.44 m /hr	3.1 mm	87 mm	75 mm
 Black - 4.0mm	250 kPa.	0.962 m /hr2	.89 m /hr	3.7 mm	103 mm	89 mm
	270 kPa.	0.998 m /hr	2.99 m /hr	3.8 mm	106 mm	93 mm
	300 kPa.	1.048 m /hr	3.14 m /hr	4.0 mm	112 mm	97 mm

* m /hr = litres/hr x 1000

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