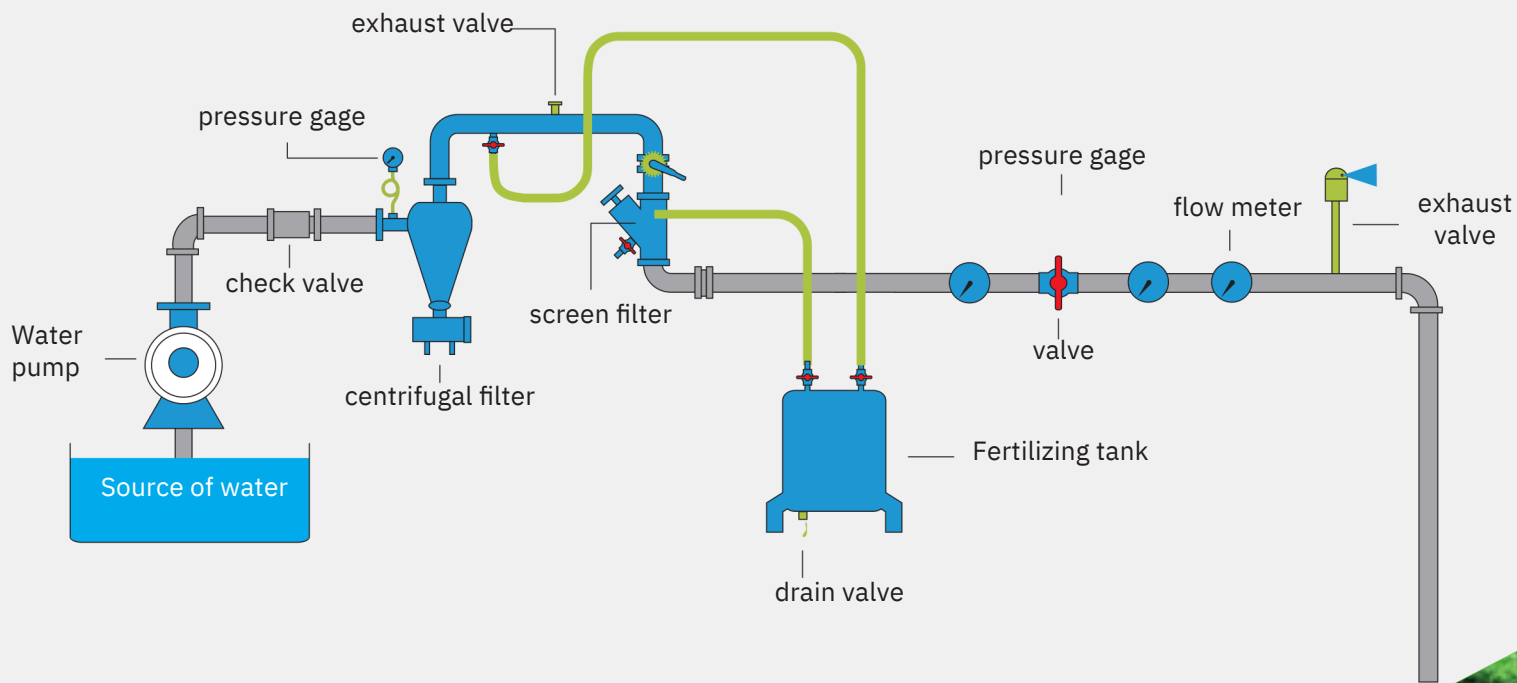




**PKYDRIP**

# Irrigation Solution Brochure

Cultivating Smarter Agriculture with  
IoT Technology



## Automatic Drip Irrigation System Diagrammatic Sketch



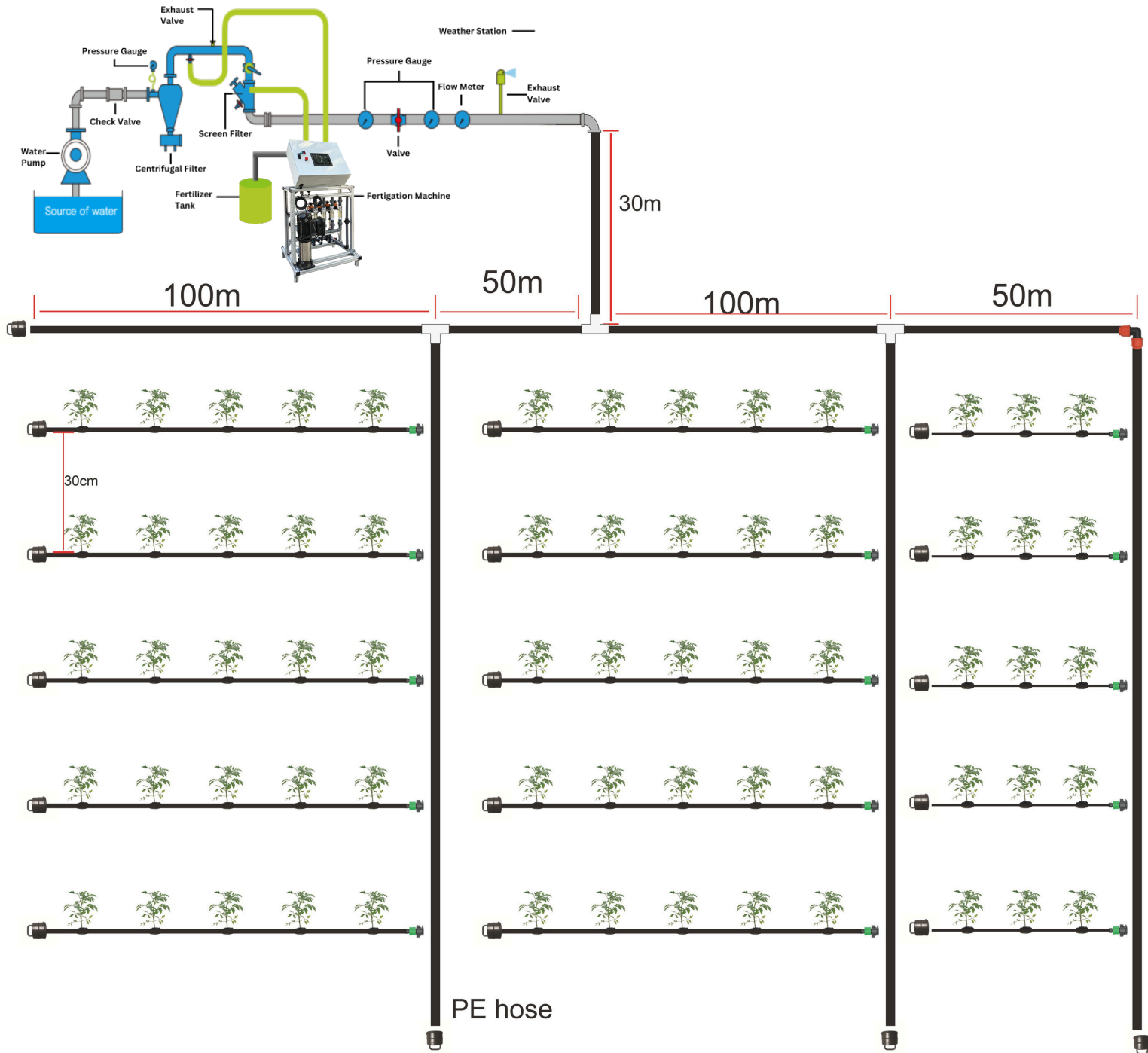
# Drip Irrigation Program

Drip irrigation is a highly efficient and precise watering method that delivers water directly to the plant roots through a network of pipes, emitters, and valves. This system reduces water waste, minimizes evaporation, and ensures optimal moisture levels for plant growth. Our company provides a one-stop solution, covering everything from system design, equipment procurement, pre-shipment testing, to installation guidance.



# Overall Design

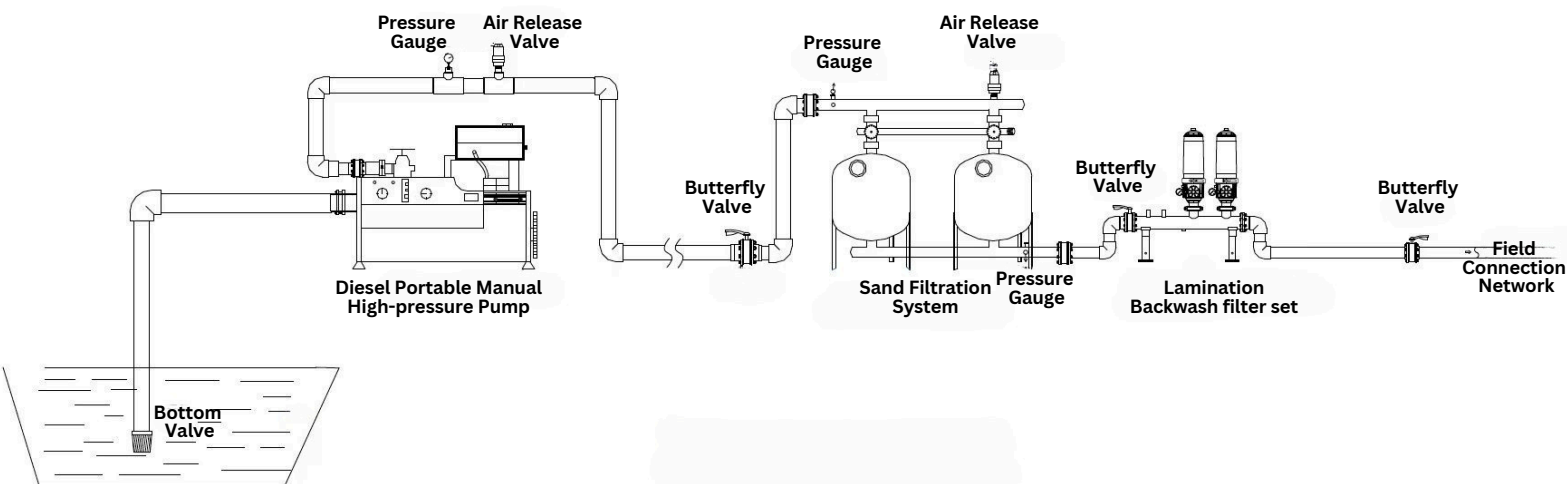
Automatic Drip Irrigation System Diagrammatic Sketch For Agriculture Crop (drip tape/drip pipe)



## Key Components

### Part1 Water Supply & Filtration

- **Water Source** – Can be a well, reservoir, rainwater collection tank, or municipal water supply.
- **Pump** – Ensures sufficient water pressure for uniform distribution.
- **Filter System:**
  - Sand Filter (for large-scale systems) – Removes suspended solids.
  - Disc Filter – Provides finer filtration to prevent clogging.



**Instruction: Install according to site conditions**

### Part2 Fertigation System

- Our Fertigation System is an advanced solution that combines irrigation and fertilization, delivering precise nutrient management for agricultural and horticultural applications. Featuring cutting-edge sensors, the system continuously monitors and adjusts pH, EC (electrical conductivity), and nutrient levels, ensuring optimal plant health and growth.



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or Google Play



## Key features

- **Multi-channel** fertilization for simultaneous nutrient application.
- **Customizable** scheduling for fully automated operation.
- **IoT Enabled:** Seamlessly connects to the cloud, enabling real-time data synchronization and remote control of the machine, water pumps, valves, and more. It allows users to monitor the operational status, water pressure, and other key metrics in real time. In case of abnormalities or faults, the system sends timely alerts and activates protection mechanisms. Additionally, it tracks water and fertilizer usage, providing insightful analysis to help users optimize future irrigation and fertilization plans.
- **Compatibility** with various irrigation methods, including drip, ebb-and-flow, and sprinkler systems.

## Part3 Water Distribution System

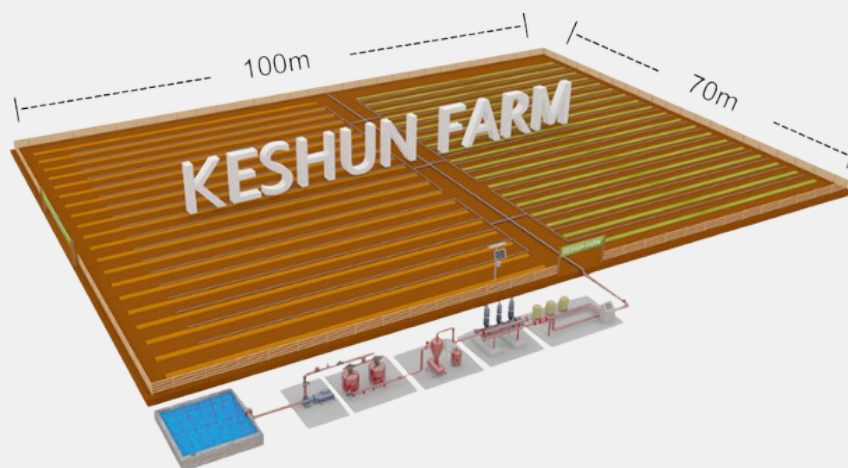
- **Mainline & Sub-main Pipes** – Usually PVC or HDPE pipes, transporting water from the source to the irrigation zones.
- **Drip Lines** (Drip Tape or Drip Tubing) – Polyethylene pipes with built-in drippers at regular intervals.
- **Drippers** (Emitters):
  - Pressure-compensating emitters – Maintain consistent flow even with pressure variations.
  - Adjustable emitters – Allow users to control individual plant watering.
  - Inline emitters – Pre-installed within drip tubing for uniform irrigation.

# Case Study



## 1. Site Overview

- Total Area: 1.5 acres ( $\approx 6,070 \text{ m}^2$ )
- Plot Dimensions: 100m (length)  $\times$  70m (width)
- Topography: Flat
- Crop: Apple Trees
- Water Source Location: South of the plot



## 2. System Layout

### (1) Irrigation Zoning & Water Flow

1. Divided into Two Rotation Groups (East & West)
  - The entire plot is split into two irrigation zones (East and West).
  - Each zone is controlled by solenoid valves and irrigated alternately to optimize water pressure and distribution.
2. Branch Road in the Middle
  - A central branch road runs north-south, dividing the field into East & West sections.
  - The main pipeline follows the branch road, ensuring efficient two-way water distribution.
3. Mainline & Sub-main Pipes
  - Mainline extends from the water source (South to North) along the branch road.
  - Sub-main pipes branch out eastward and westward from the mainline.
  - Pipes are made of HDPE or PVC, with proper pressure regulation.

# Case Study



## (2) Water Supply & Filtration System

### 1. Water Source

- Water is pumped from a well/reservoir. A pump station ensures adequate pressure for uniform irrigation.

### 2. Filtration System

- Sand or Disc Filters prevent clogging of drip emitters.
- Pressure Regulators maintain a consistent pressure.

### 3. Fertigation System

- Venturi Injector injects nutrients into the irrigation system.
- pH & EC Sensors monitor fertilizer concentration and water quality.

## (3) Drip Irrigation Network

### 1. Drip Lines (Inline Drippers) for Each Row of Apple Trees

- Drip lines are installed along each tree row, ensuring direct root-zone irrigation.
- Dripper Flow Rate: 4-8 L/h per tree (adjustable based on tree age & climate).
- Spacing: Drippers are spaced based on apple tree planting density.






### 2. Solenoid Valves for Automatic Control







- Installed at the entrance of each irrigation zone (East & West).
- Can be remotely controlled or automated based on soil moisture sensors.






### 3. Control & Monitoring Sensors

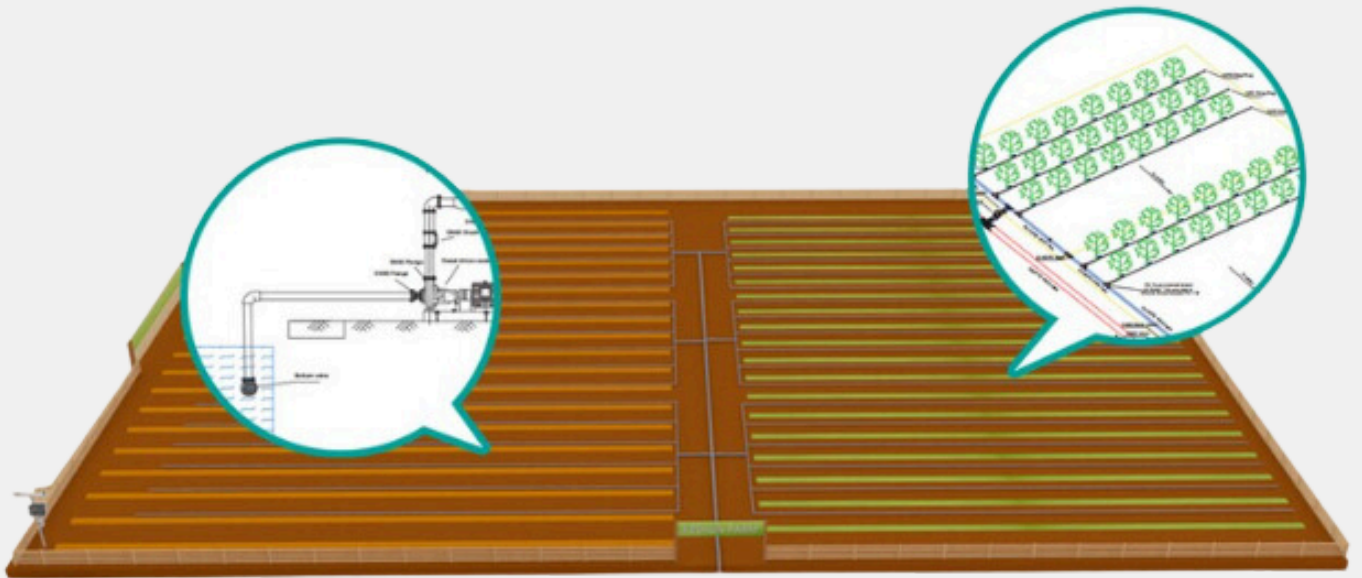
- Soil Moisture Sensors placed in both zones to optimize watering schedules.
- Flow Meters to monitor water usage and detect leaks.

# Product required for the program

Product name	Item No.	Specifications	Photo	Description
Water pump with diesel powered	PKCYB03	60cum/h	 <p>Water Inlet caliber: 3inch Water outlet caliber: 3inch Head: 30m Flow: 60CUM/h 1h Calibration power: 9.8KW 12h Calibration power: 8.47KW Calibration speed: 2300r/min</p>	<p>1. combination of the meter and motor in flexible way. 2. Easy carrying and wide application in various excvavtors, land levellers, pavers, road rollers, etc. 3. Cast iron pump body finished with anti-corrosion pain.</p>
Centrifugal reverses filters	PKLS112	60cum/h		<p>1. Automatic back-flushing: when the pollutant contents of filtering layer reaches extreme values, the flow pattern within the filter is changed, the automatic back-flushing is happened, and the sewage automatically drains into the sewer. 2. Automatic operation: whole system runs automatically and it saves labor too. 3. Saving expense: the operation cost is very cheap. 4. Long service life: it can reach above 30 years.</p>
Disc filter	PKFD03120BBB	3inch BSP		<p>Made from virgin modified polypropylene (PP), the filter body is strong, durable, and resistant to pressure and impact.</p>
Sand filter	PKFSS070-2	60cum/h		<p>This type of sand filter is highly effective in removing both organic and inorganic impurities, making it ideal for filtering water from sources such as rivers and ponds.</p>
Fertigation System	PKFM04-I	4 fertilizer channels		<p>10-inch high-brightness LCD Touchscreen High-power multistage pump Automatically adjusts fertilizer input based on EC values Valve control: Supports wired or wireless control of multiple field solenoid valves Connects with multiple sensors for advanced monitoring and control. Control modes: touchscreen, web browser, mobile APP.</p>

layflat hose	PKP3030	3inch		<ol style="list-style-type: none"> <li>1. Scientific design, strong fastness and good sealing.</li> <li>2. Convenient connection, easy disassembly, strong flexibility, easy recovery, beautiful and practical.</li> <li>3. In addition to connecting PE and other pipelines, it can also be used for U-PVC, steel pipe and other connections, and has a wide range of applications.</li> <li>4. Complete specifications can meet the needs of various applications.</li> </ol>
PE layflat hose as delivery tape	PKFH0103	3inch		<ol style="list-style-type: none"> <li>1. Environmental friendly and smell-less</li> <li>2. High tensile strength, resistant to corrosion</li> <li>3. High impact resistance</li> <li>4. Lightweight and flexible</li> <li>5. Easy to carry and install in the field</li> <li>6. Storage duration lasting for 10 year</li> <li>7. Anti-UV for longer life span.</li> </ol>
PVC Ball valve	PKFM4030	3inch		<ol style="list-style-type: none"> <li>1. installation and operation is easy, the weight is light</li> <li>2. The fluid resistance is small, no vibration and noise</li> <li>3. Each valve have been done pressure test in the factory, so the leakage rate is low.</li> <li>4. Quality: after high temperature, the using life is long for at least 10 years</li> <li>5. Handle is very novel and popular for many people.</li> </ol>
Steel clip	PKKG01	3 inch		<ol style="list-style-type: none"> <li>1. Whole stainless steel and resistant to corrosion;</li> <li>2. Positive sealing integrity;</li> <li>3. Easy assembly and disassembly;</li> <li>4. High strength and reliable;</li> <li>5. Good welding and physical performance</li> </ol>
End plug for drip line	PKTP0117	Dn17		Used for watering row crops & vegetable farms or gardens. To connect lengths of 16mm drip tape. Drip Tape Lock fittings twist onto drip tape and are reusable.
Connectors for drip line	PKCT0117	Dn17		<p>16MM IRRIGATION PIPE BARB CONNECTOR is used to connect 16mm Drip Tape and layflat hose</p> <p>Reusable: Just unscrew</p> <p>Quick &amp; Easy Installation &amp; Removal</p> <p>High Quality Plastic with Maximum UV Protection</p>

PE layflat hose as delivery tape	PKFH0103	3inch		<p>1 Environmental friendly and smell-less  2 High tensile strength, resistant to corrosion  3 High impact resistance  4 Lightweight and flexible  5 Easy to carry and install in the field  6 Storage duration lasting for 10 year  7Anti-UV for longer life span.</p>
Puncher	PKPF0215	DN15		<p>This hole punch for lay flat hose of irrigation .  It is convenient to use and keep . The cutting metal end is durable ,which can make holes from Dn15.</p>
Water pressure meter	PKTS6010	0-10bar		<ol style="list-style-type: none"> <li>1. Excellent load-cycle stability and shock resistance</li> <li>2. All stainless steel construction</li> </ol>
Suction pipe	PKBWG01	3inch		<ol style="list-style-type: none"> <li>1. corrugated hose with smooth cover.</li> <li>2. distance average between each ripple.</li> <li>3. no flaw, poison, smell.</li> <li>4. flexible, soft, bend naturally</li> </ol>
Layflat emitter drip	PKDT0116303020	16mm 0.30mm 30cm 2.0L/H 2000 meter		<ol style="list-style-type: none"> <li>1.Uniformity of drip: channel guaranteed the stable and uniform flow rate, and the pipe line could build in a very long range.</li> <li>2.Congestion proof drip head: equipped with a screen net, to prevent clogging.</li> <li>3.Long usage life: aging resistant material to prolong the service time.</li> <li>4. Drip head closely bonded with the pipe line: the drip head is embedded in the dripline to guarantee the performance.</li> <li>5.Can be built over a long distance.</li> </ol>



## Our Services

We provide a one-stop solution for drip irrigation and fertigation systems, ensuring efficient water and nutrient management for agricultural and horticultural applications. Our services include:

- **Site Assessment** – Evaluate the site based on the data provided by the customer, ensuring the most suitable system design.
- **CAD Design & Construction Drawings** – Create detailed CAD designs and corresponding construction drawings tailored to the specific project requirements.
- **Product List & Material Planning** – Issue a comprehensive product list, specifying all necessary components for the project, including pipelines, valves, filters, fertigation units, and control systems.
- **Integration & Pre-Shipment Testing** – Provide integration and testing of irrigation controllers, smart sensors, solenoid valves, and other devices, ensuring a plug-and-play experience for customers upon delivery.
- **After-Sales Support** – Provide technical assistance, troubleshooting, and long-term system maintenance guidance to ensure optimal system performance.

Our expertise in precision irrigation, fertigation automation, and smart agriculture solutions guarantees an efficient, reliable, and easy-to-manage irrigation system tailored to customer needs.



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