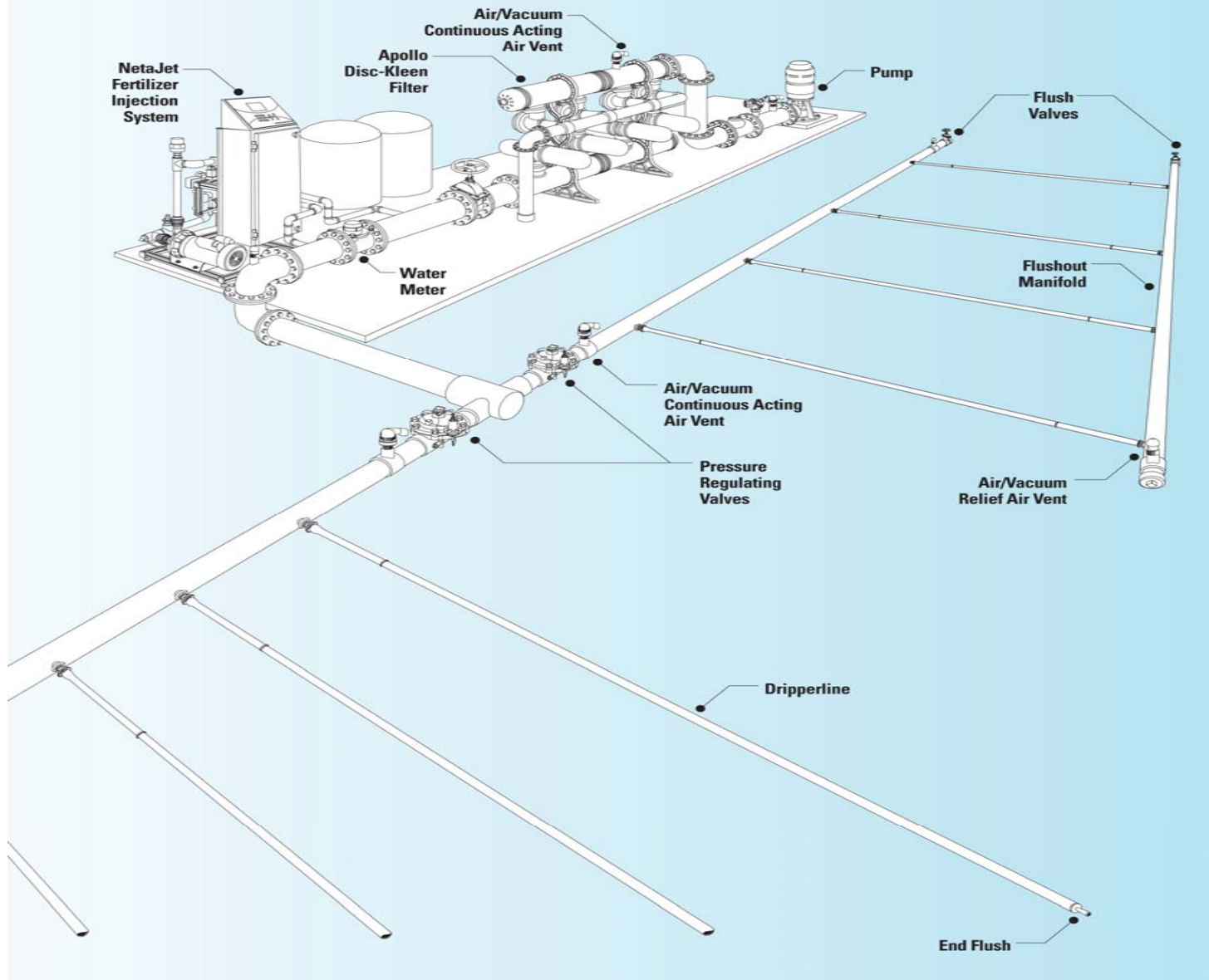


# Selecting System Components

# NETAFIM USA DRIP IRRIGATION SYSTEM LAYOUT



# Key Components list

Laterals

- The right tube for the site – flow, spacing and wall thickness.

Pump

- Water! Volume and pressure

Filtration – Disc or Media

\*screens increase level of risk

- Disc or Media – water type / quality MUST be known.

Valves

- Allows cycling and pressure control

Air vents / Vacuum breakers

- Air out to improve system performance and air into prevent suction of mud into drippers.

# Key Components list

Injection Equipment

- Three reasons – Feed, Treat and Maintain

Flow Meter

- If it can't be measured .....

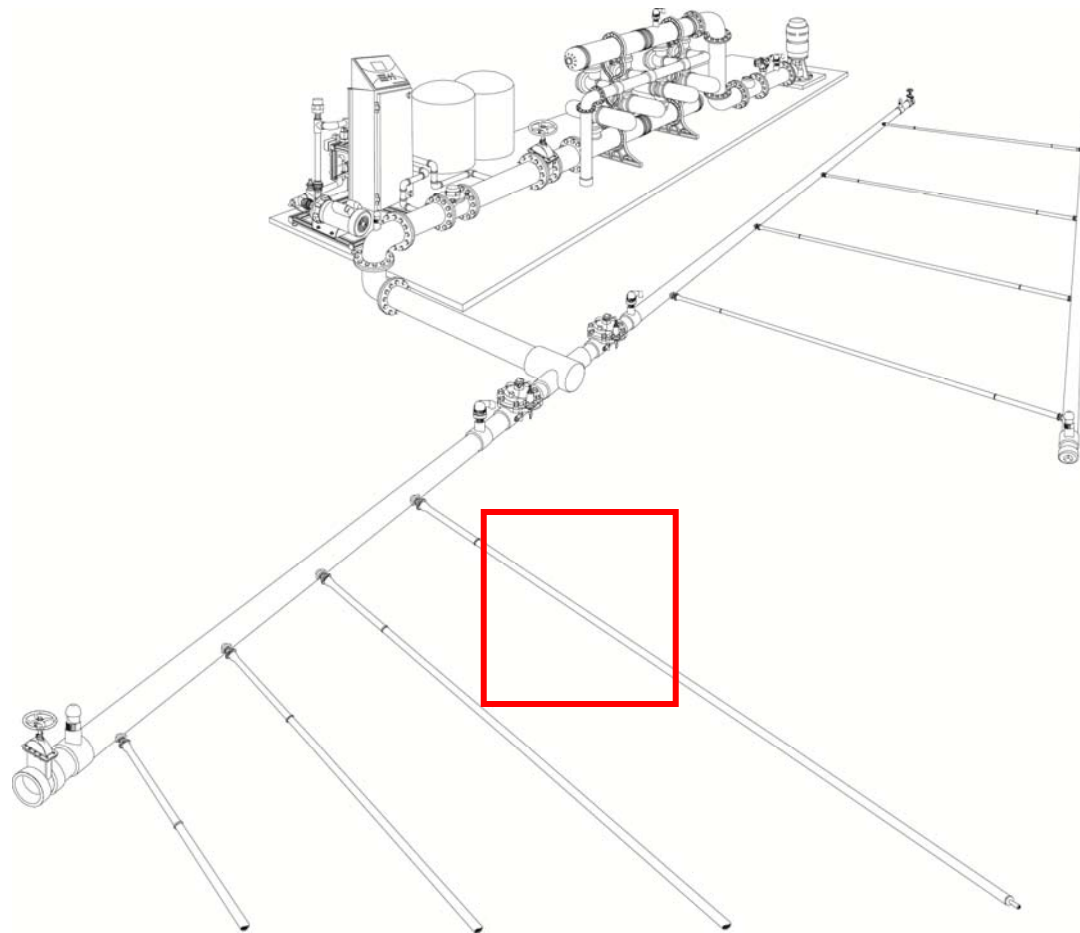
Pressure Gauges

- System Health

Automation

Makes sure the system operates according to the plan and “tells” on itself when it doesn't!

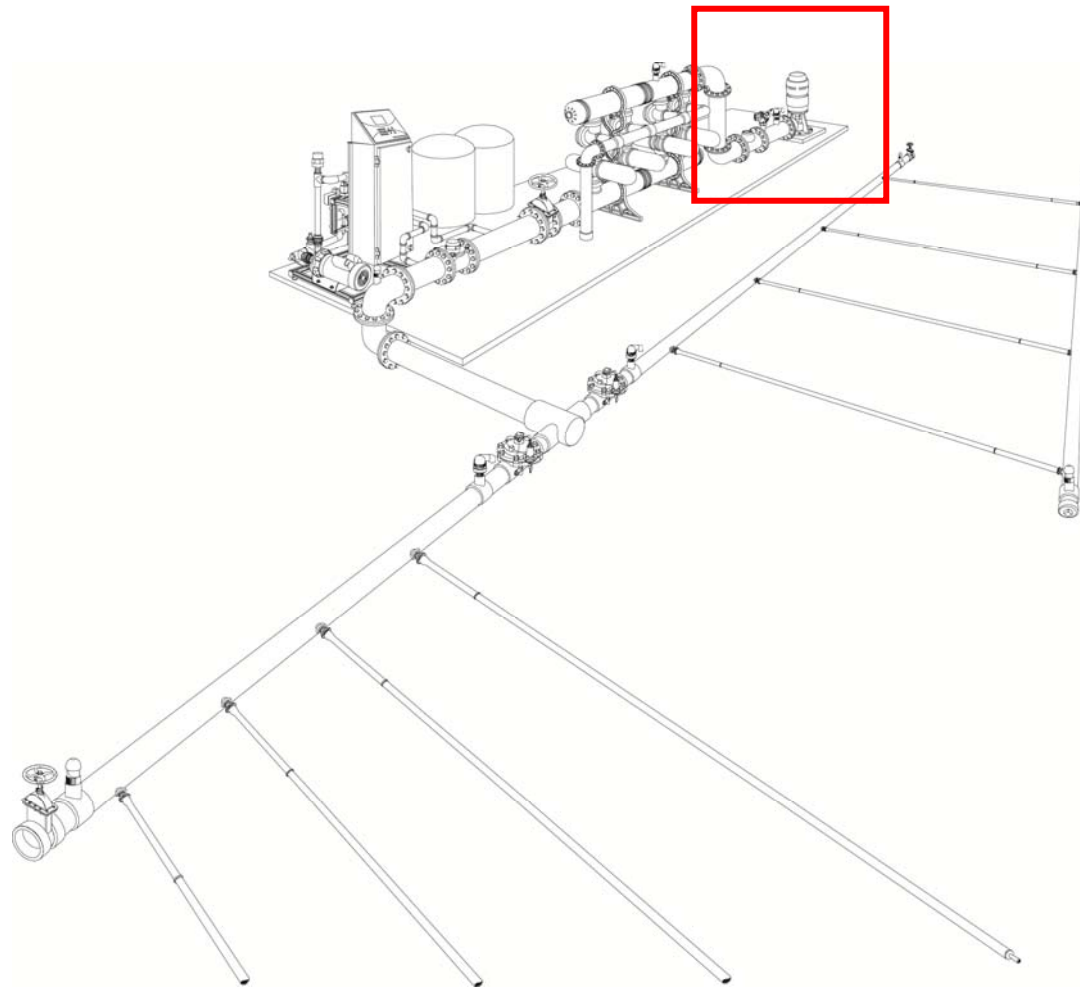
# Driplines / Laterals



# Laterals

- Flat or Undulating Terrain – Typhoon / Streamline or DripNetPC / UniRam
- Flow, Length of Run & Pressure for Id choices - .630, .875, .990, 1 1/8" or 1 3/8"
- Wall thickness – Longevity & resistance to damage
- Flow Rate and inline spacing – meeting application rate or available water
- Lateral spacing – Meeting cultural practices
- Depth – Plant type, soil and rodent / insect pressure, germination

# Pump & Water supply



# Pumps & Water supply

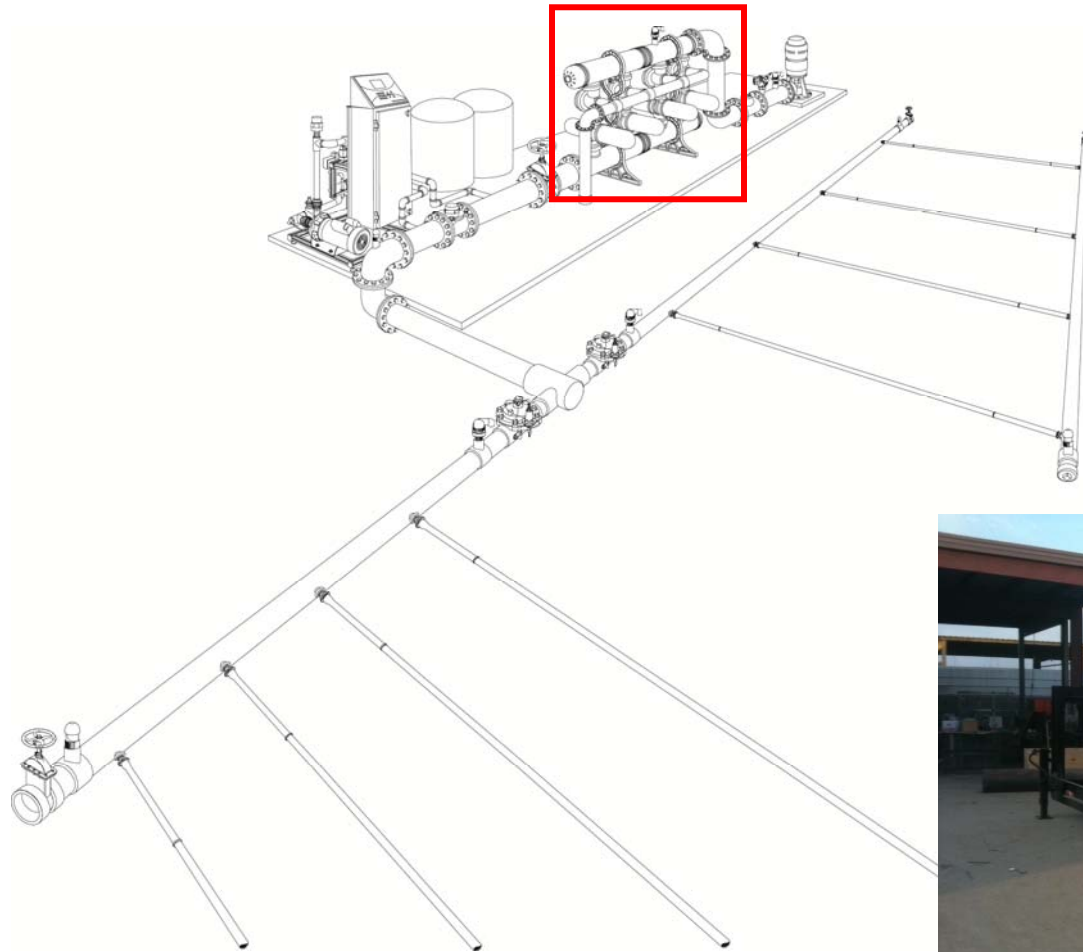
The **water supply** dictates the amount of area that can be irrigated. Think ET – Evapotranspiration – we need to meet peak ET.

The **pump** must be able to apply that water to the irrigated acres within a 24 hour period.

Running 24 hours per day every day leaves no time for breakdowns and or maintenance!!!!



# Filtration



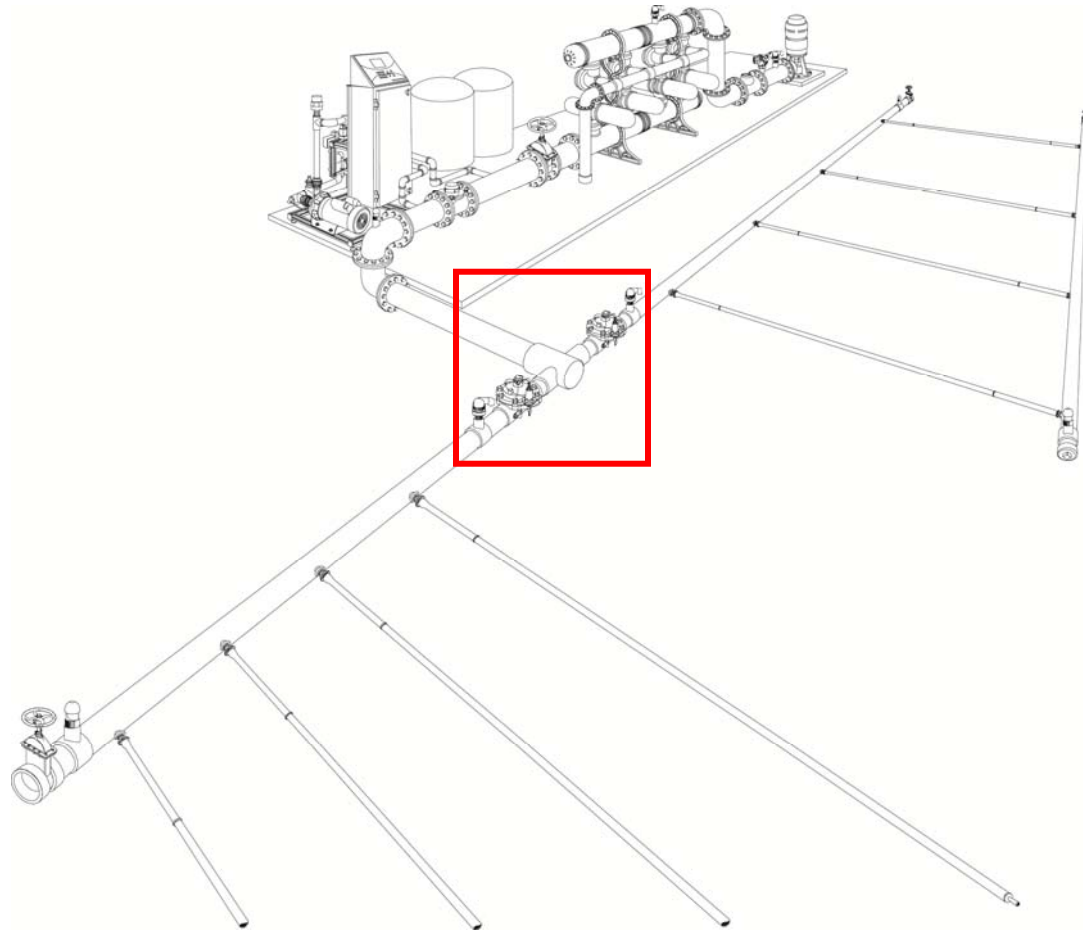
# Filters

Depth filtration is recommended for high dirt removing capacity and system integrity.

- Sand Media – Higher total costs but best for removing dissolved solids when used with a sequestering agent.
- Disc – Compact, reliable and efficient.

\*Always use a backwash controller with Pressure Differential switch

# Valves



# Valves

Control the flow of water into a block

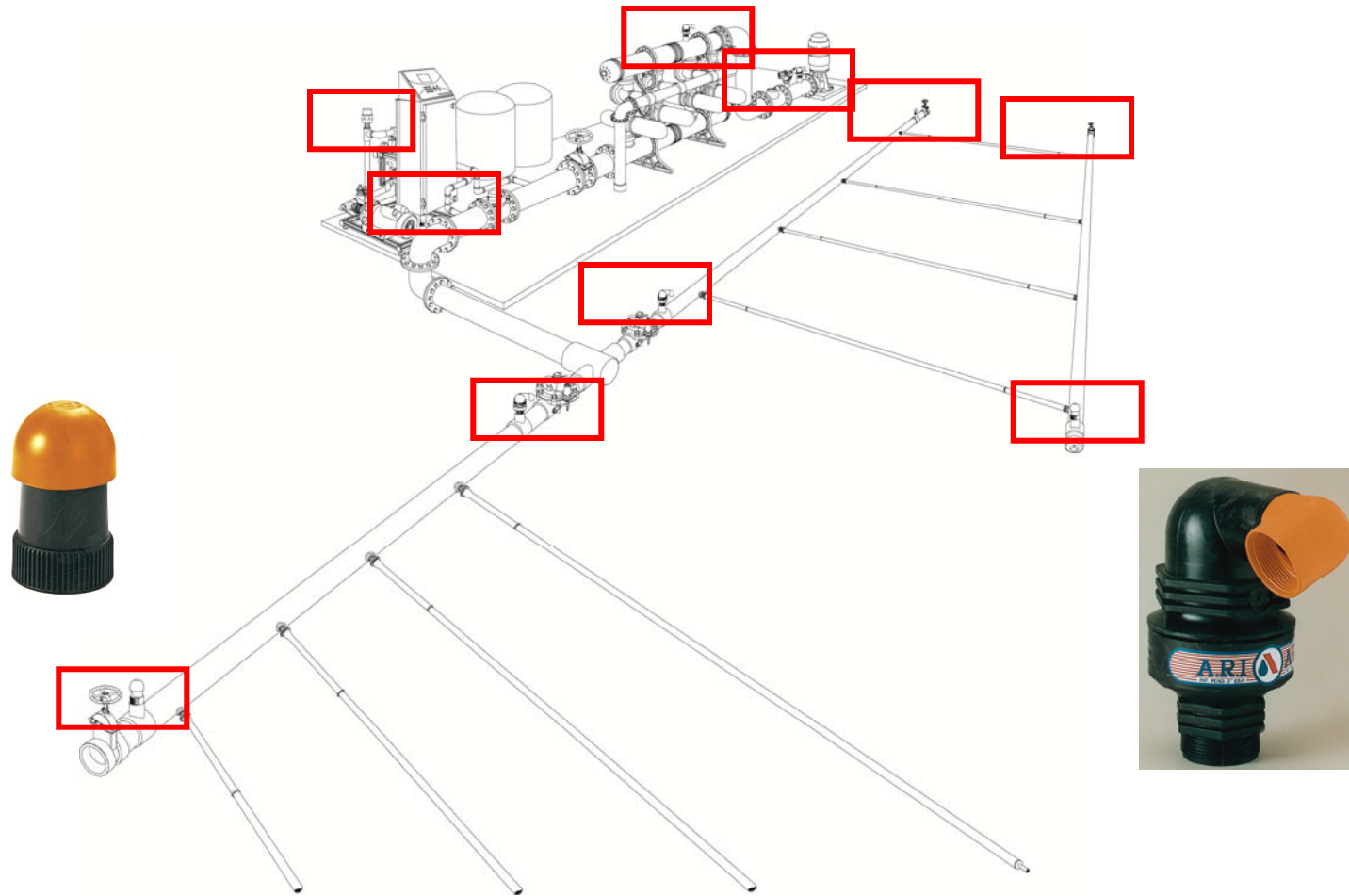
CAN control the pressure of the water into that block

CAN be manual, solenoid, hydraulic or pneumatically controlled

CAN be manually closed in cases of fumigation

CAN'T create downstream pressure!

# Air Vents and Vacuum breakers



# Air and Vacuum

Getting air out of the system improves system flow characteristics – water isn't fighting to displace air!

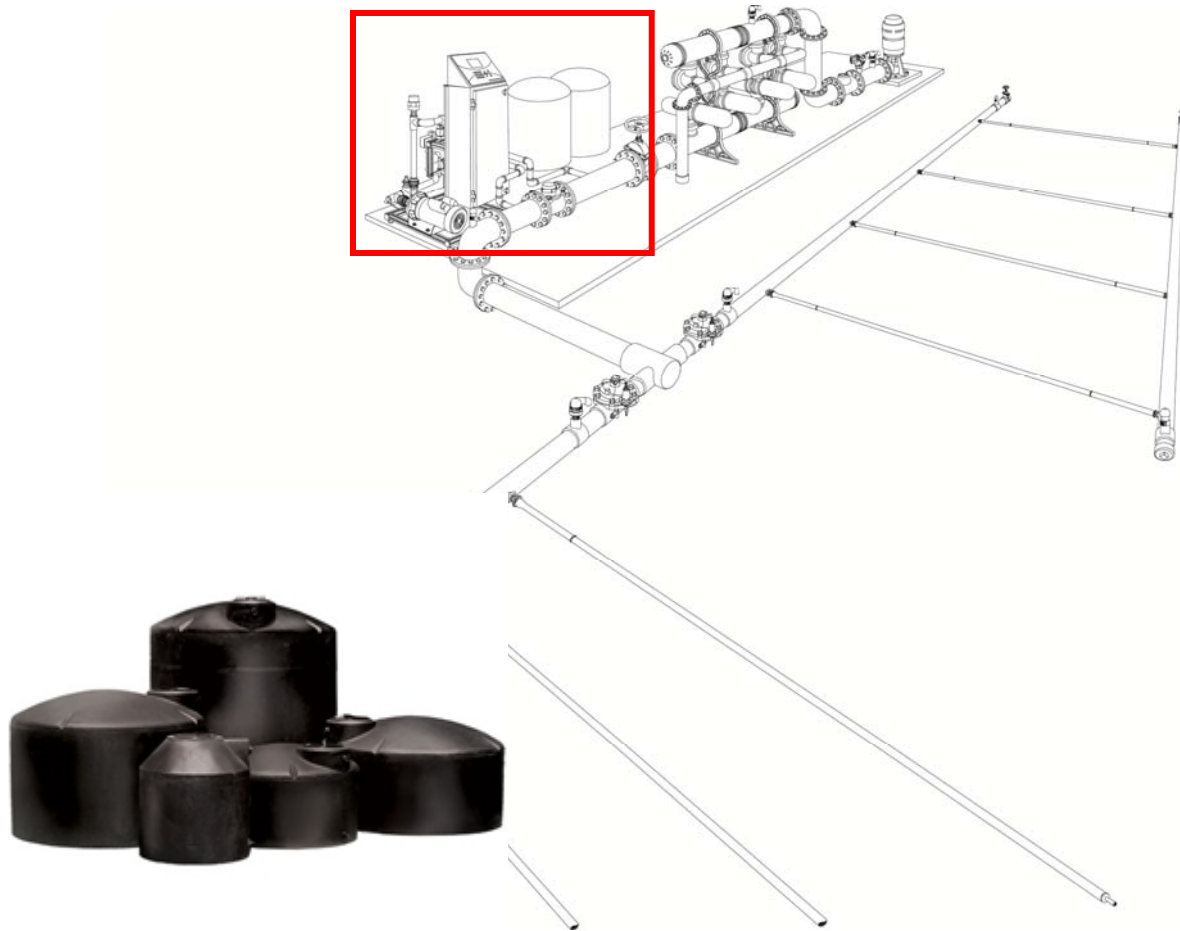
Air in the system increases energy costs.

Compressed air can restrict water passage and cause pipeline ruptures.

Vacuum can cause mud to be sucked back into the drippers.

Vacuum can also cause pipes to collapse.

# Injection



# Injection

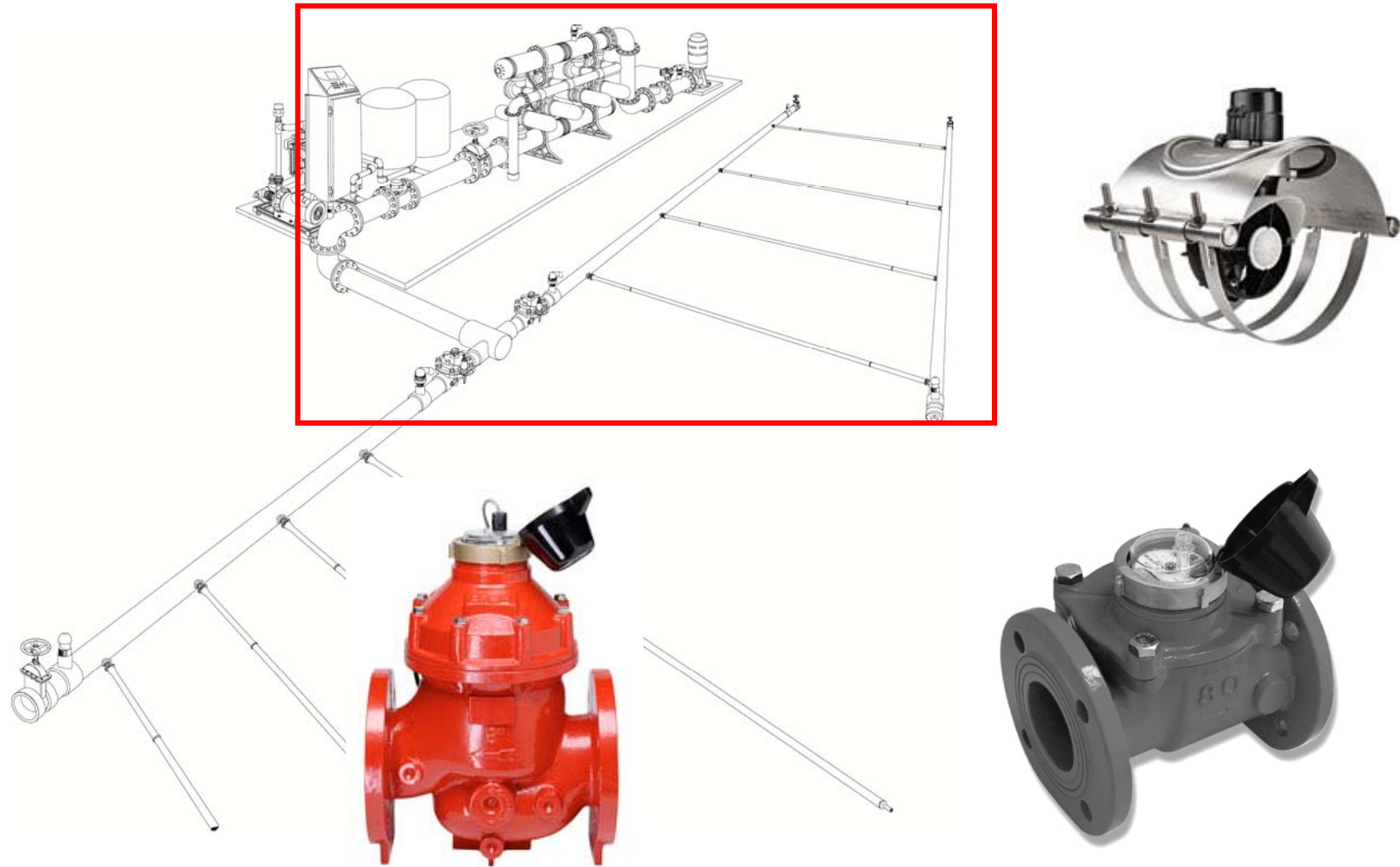
**Feed** – in areas of natural precipitation / soil moisture you **MUST** encourage the roots to grow by the dripper.

**Treatment** - to the plant material or soil **MAY** become needed to handle infestation or nutrient deficiencies.

**Maintenance** – Build up of biological or mineral scales need to be treated and removed periodically during the irrigation season and before winterizing.



# Water Meters & Pressure Gauges



# Measuring & Monitoring

Flow meters and pressure gauges allow you to:

Set the system Baseline at start up and compare to design parameters.

Monitor the health of the system as time goes to ensure:

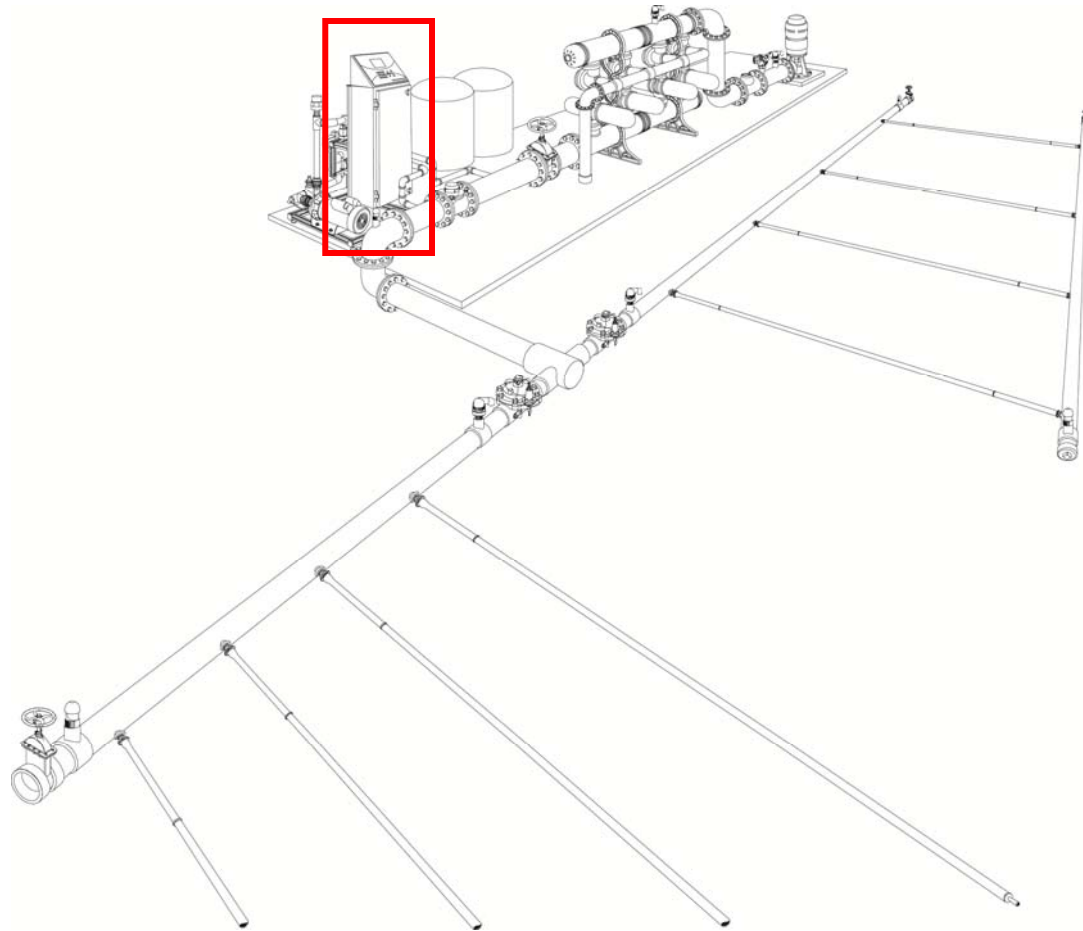
No plugging

No ruptures

Accurately inject fertilizers, pesticides, herbicides and line maintenance materials safely and accurately.



# Automation



# Automation

Can –

Start the pump

Switch the valves

Inject the fertilizer

Monitor the flow

Flush the filters

Indicate if the system doesn't perform as programmed

Build history