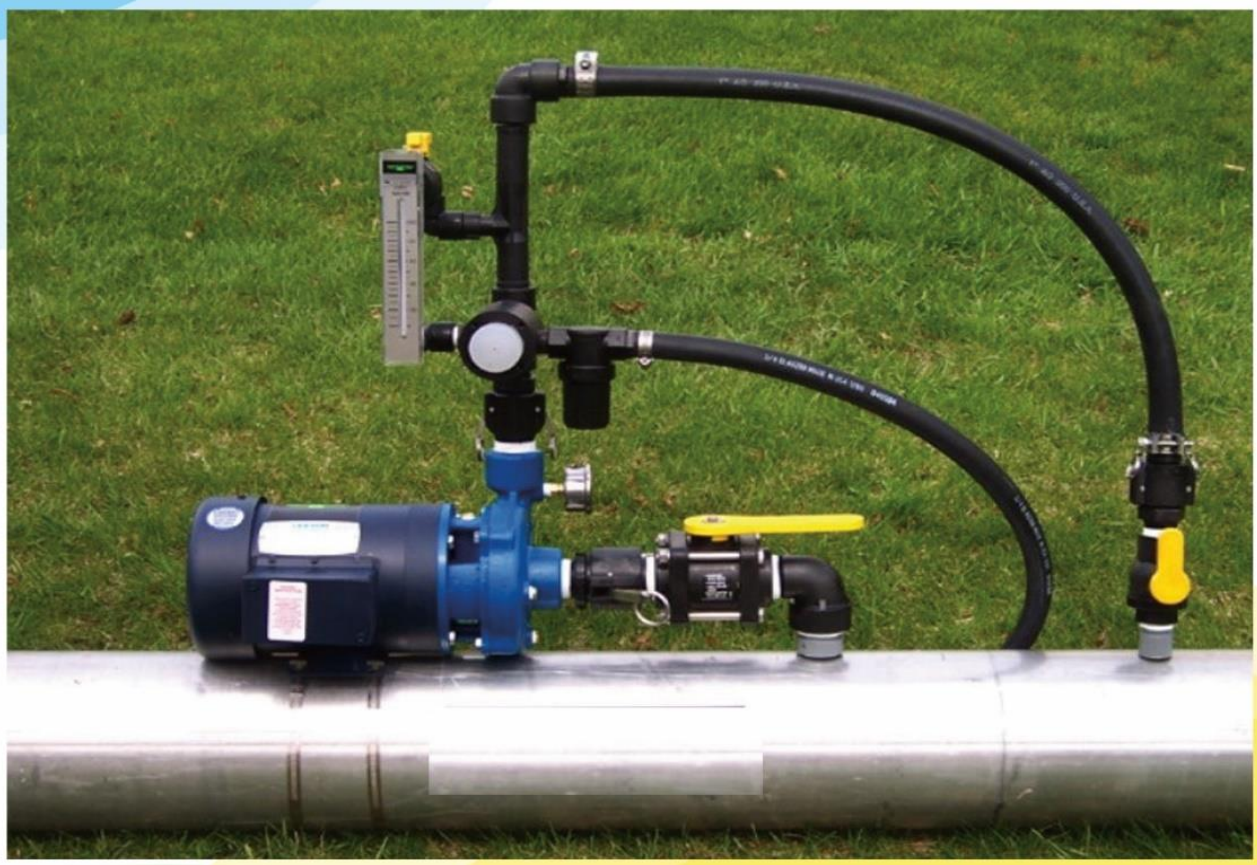
mais
For Irrigation and Water Systems

Mais Fertigation Unit



P.O. Box 42801,Riyadh 11551.Saudi Arabia
Tel : +966112652300- Fax : +966112651344
Email : irrigation @mais .com.sa
www.mais.com.s

The Fertigation Unit includes everything you will need:

- Injection pump
- Fertilizer flowmeter
- Pressure gauge
- Metering valve
- EPA valve
- Strainer
- Pipeline valves
- Fertilizer hose barb
- Connection hoses
- Quick connects
- Mounting hardware

The Fertilizer Injector

Injection rate - (0 -350 l/h).

Accuracy - Accuracy and repeatability comparable to other high-quality injection pumps.

Maximum irrigation line pressure - (4.7 bar).

Pipeline connections - Everything you need to connect to 1 1/2" MNPT inlet and 1" MNPT ports on pipeline.

Fertilizer line connection - 3/4" hose barb.

Flowmeter type - Direct-indicating rotameter with 0 to 350 liter per hour.

Parts in contact with fertilizer - Corrosion resistant materials of construction.

Mounting - Includes all hardware needed for mounting onto irrigation pipelines from 1-1 1/2" to 12" OD.

How the Injector Works

Operation

A portion of the water to be treated is drawn from the pipeline into the injector's centrifugal pump and forced through an efficient venturi before returning to the pipeline. Vacuum from the venturi draws fertilizer through a flowmeter and a manual flow control valve into the water stream. Other valves in the fertilizer line prevent fertilizer backflow and unintended forward fertilizer flow. The fertilizer enters the injector downstream of the centrifugal pump, greatly reducing the possibility of pump corrosion.

Safety features

Vacuum injection reduces the possibility of chemical/fertilizer escape. A check valve at the venturi prevents backflow of water into the fertilizer tank and an automatic shutoff valve prevents injection line flow if the pump loses pressure. Discontinue use of the injector until repairs are made if either of these devices fails.

Flow capacity

A properly-installed injector injects most fertilizer solutions at any set rate between 30 and 350 Liters per hour, as long as the pipeline pressure is at or below 4.7 Bar and the injector is not installed at a high altitude. If fertilizer density or viscosity is significantly greater than that of water, or if the injector is installed at higher altitudes, maximum injection rate may decrease slightly.

Rate Calculation Examples

Example 1: Fertilizer application through a center pivot

Variables:

- Total acres under the center pivot
- Revolution time for a complete circle
- Actual nitrogen (N) required per acre
- Actual N per liter of fertilizer solution

Situation:

- 140 acres under pivot
- Circle revolution time is 16 hours
- 12 Kg actual N required per acre
- 1.5 Kg actual N per liter of 28% solution

Calculations:

1. 140 acres x 12 Kg N = 1680 Kg N required for one revolution
2. 1680 Kg N divided by 1.5 Kg N per liter = 1120 liters of 28% N solution
3. 1120 liters of solution divided by 16 hours = 70 liters per hour injection rate
4. Set injection rate at 70 liters per hour.

Example 2: fertilizer through a drip system

Variables:

- Total acres in zone to be fertigated
- Hours of irrigation for that zone
- Required application rate per acre
- Size of fertilizer tank

Situation:

- 40 acres in zone to be fertigated
- Zone is to be irrigated for 2 hours
- 10 liters of fertilizer concentrate required per acre
- Fertilizer tank holds at least 200 liters

Calculations:

1. 40 acres requires 200 liters fertilizer concentrate in tank
2. Fill tank to at least 200 liters
3. Divide 200 liters by 2 hours = 100 liters per hour injection rate
4. Set injection rate at 100 liters per hour