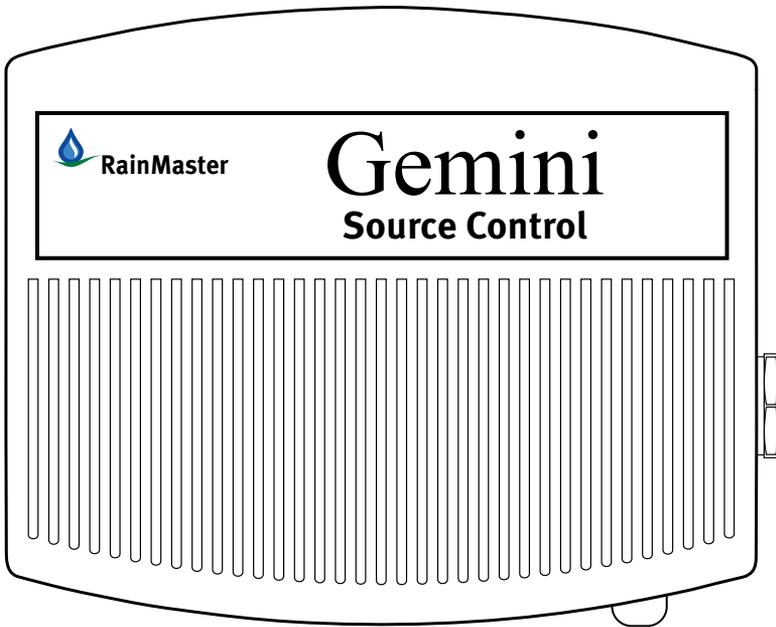**RainMaster**

Installation and operating instructions for the Gemini Source Control

It is the installer's responsibility to read, understand and comply with these instructions.

RainMaster Gemini
Source Control

™
ATS 5200.477
WaterMark   WMKA 22021

We would like to thank you for purchasing the Gemini Source Control.

Your commitment to saving water through the use of collected rainwater is commendable, and is a very important step towards increasing your personal water sustainability.

To match your commitment to saving water we have committed to ensuring that the Gemini Source Control is manufactured to the highest standards as recognized by earning the Australian Watermark approval to ensure its quality and reliability.

W™
WaterMark ATS 5200.477
WMKA 22021

- MODEL: MARK II
- MAX. OPERATING PRESSURE: 85 PSI
- VOLTAGE: 110V/60HZ
- MAX. AMPS OUTPUT: 14
- MAX. OPERATING TEMP: 122 deg F
- IP RATING: 23

Table of Contents

Device Explanation

The Gemini Source Control is a Rainwater / Municipal Supply Changeover Valve for use in a domestic application. Gemini automatically selects either municipal supply or rain tank water and makes it available for use in toilets, washing machines and residential irrigation systems. Gemini is not designed for the supply of potable water in a standalone configuration. Potable applications require other filtration, disinfection and reduced pressure zone devices.

When there is demand for water from any of the attached fixtures within your home, Gemini will automatically check the level of water in the rain tank. If enough water is present it will provide it for use via an attached pump.

If there is no rainwater found in the tank or if it runs out while in use, Gemini will provide water from the municipal supply seamlessly. When no power is available or in the instance of pump failure, the Gemini will default to provide municipal water to the attached fixtures.
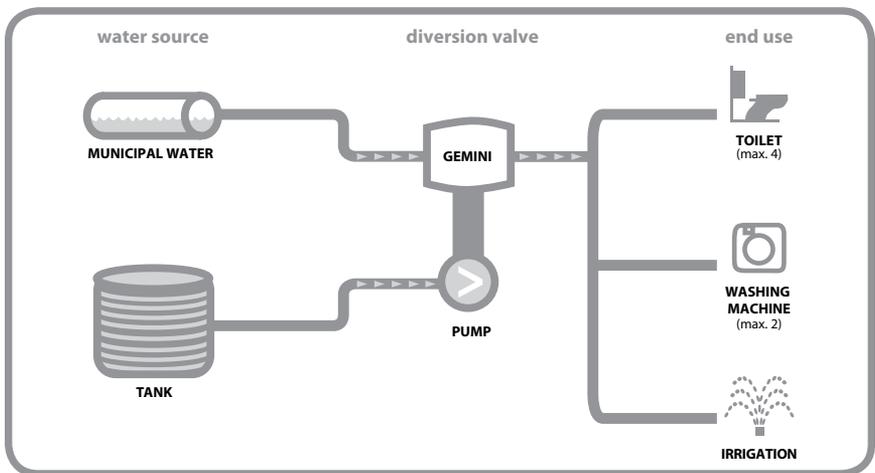
Standards and Regulations

It is important that all relevant plumbing regulations are followed when installing the Gemini and its associated pump.

Any pipe work or fittings connected to the Gemini and pump must meet UPC Plumbing codes.

To prevent backflow of rainwater into the municipal water supply, Gemini has a built-in dual check valve. Check with your local water authority in regards to the guidelines for rainwater tanks as some authorities require an additional backflow (RPZ) valve to be plumbed into the municipal water line. In many cases, this is defined by Title 17, Sections 7583 through 7605 of the California Code of Regulations.
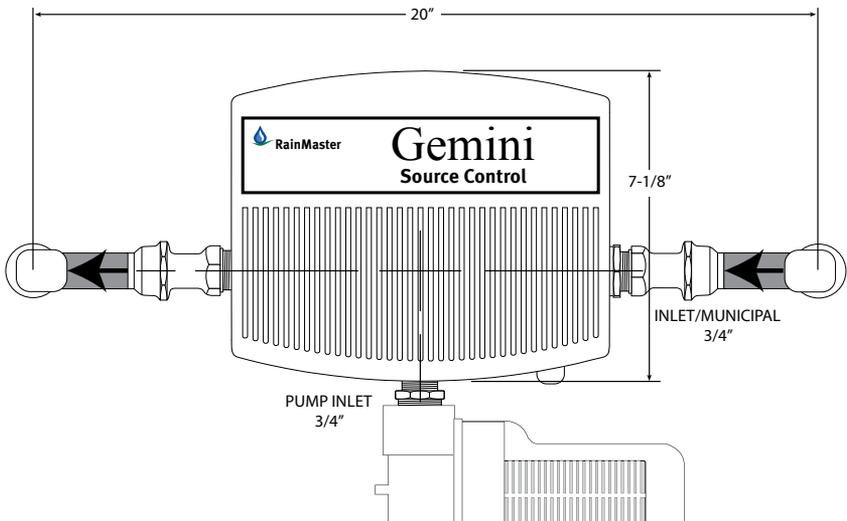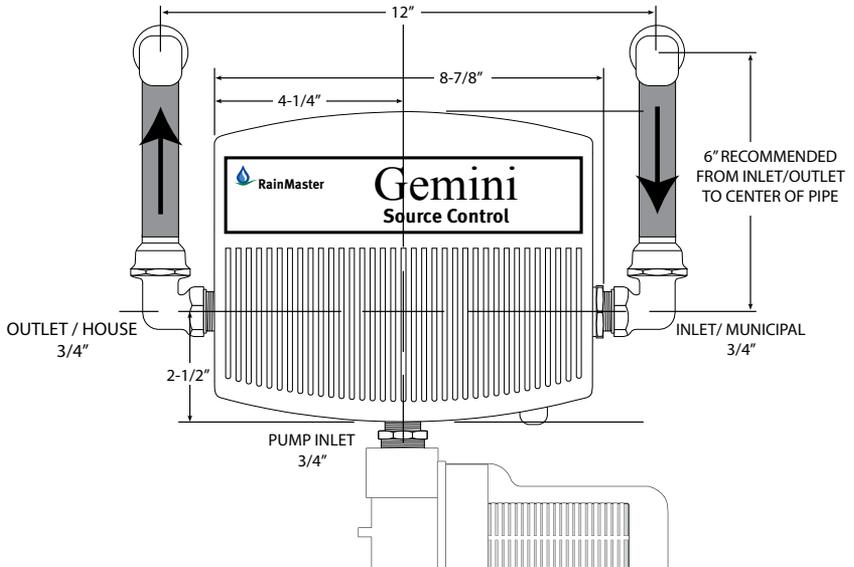
Warnings

These warnings are written to protect the operation of the Gemini Source Control device. Failure to adhere to any of these warnings will void the warranty.

- The Gemini must be installed and/or removed by a licensed plumber.
- The Y filter provided with the Gemini must be installed either between the tank outlet and the pump, or the pump and the Gemini.
- Take care when screwing in threads on the Gemini. Over tightening may cause damage to the unit.
- It is important to install your Gemini and pump where they are not prone to freezing. If water inside the unit freezes irreparable damage may be caused.
- Gemini must only be used with clean rainwater or municipal water, it is important that it is not used with any other type of water or liquid.
- Water being supplied by the unit must be free of any materials. Lake water, stormwater or unfiltered river water are not suitable and may cause operational problems or damage within the unit.
- Adequate protection should be in place to prevent any materials entering the rainwater tank that may be harmful to the Gemini and the pump.
- Insects can be attracted to electrical devices. Where your Gemini and/or pump are in danger of insect infestation it is important to protect against this.
- Gemini and its associated pump are designed for domestic applications only. If installed in a commercial application warranty is void.
- Gemini must not be installed where continuous operation will exceed 30 minutes per cycle.

Do's and Dont's

- Do - read and follow the detailed installation instructions relevant to the type of installation.
- Do - install the supplied filter to protect the Gemini from tank debris.
- Do - plug Gemini directly into a suitable weatherproof power outlet.
- Do - install the Gemini in a clean and safe working environment. This will ensure that the device operates reliably.
- Don't - power Gemini via an extension lead. Voltage drop may damage the pump.
- Don't - allow dirty or contaminated water to enter the Gemini device.
- Don't - install the Gemini if you are not licensed to do so.
- Don't - install the Gemini or its pump where noise may be a nuisance (i.e. on a bedroom wall) as they are mechanical devices that do make some noise when in operation.
- Don't – weld copper pipes when the Gemini is connected to the pipe being welded.

Set out requirements for plumbing rough-in

12″

8-7/8″

4-1/4″

RainMaster Gemini Source Control

6″ RECOMMENDED FROM INLET/OUTLET TO CENTER OF PIPE

OUTLET / HOUSE 3/4″

INLET/ MUNICIPAL 3/4″

2-1/2″

PUMP INLET 3/4″

20″

RainMaster Gemini Source Control

7-1/8″

INLET/MUNICIPAL 3/4″

PUMP INLET 3/4″

Installation Instructions

Please ensure that you read and understand all of the Gemini installation and operation instructions before you install the unit and that the Gemini is installed in accordance with local plumbing standards. Any failure of the unit or pump due to incorrect installation will void the warranty. It is important that you take into account cable and pipe lengths when determining the location of the tank, Gemini and pump. Gemini is a solenoid-operated device and does make noise when it operates. Be aware of this when selecting its location i.e. abutting bedrooms is not a suitable location. It is recommended that Gemini be installed in a weatherproof location or enclosure that is suitably ventilated.

The installation of shutoff valves to the unit will allow for easier removal of the unit or in the instance that servicing is required. Please take care not to damage the device when threading in connection fittings. Ensure that you brace the inlet and outlet connections when connecting the Gemini and do not over tighten fittings as this may damage the unit. Teflon tape is recommended to seal these threads. In the following pages you will find specific installation instructions for 3 common installation types.

Connection Requirements

Power: Gemini should be installed within 4 feet of a suitable 110V weatherproof power outlet. Extension cords can cause a drop in voltage and performance that may be harmful to your Gemini or pump.
Municipal water supply: 3/4" minimum with 85 psi maximum inlet pressure. Installation of a pressure reduction valve will be required where the incoming mains pressure is higher than 85 psi.
Pump line: The Gemini has 3/4" female threads and a 3/4" minimum pump line is required. Suitable pipe sizing should be selected for the application. When pumping water over greater distances, larger diameter piping will reduce friction loss and increase system flow performance.
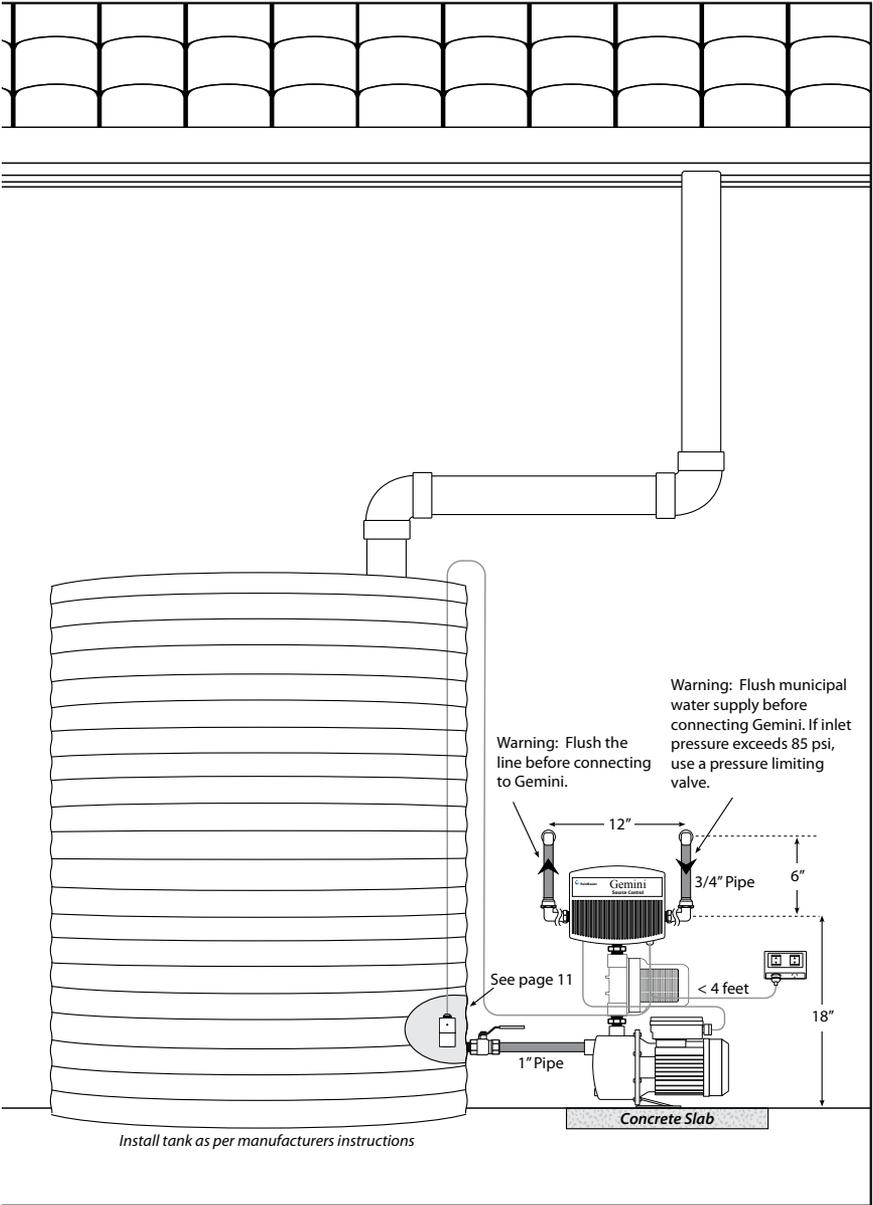
Box Contents

1 x Gemini Controller (A)
1 x Wall Bracket (B)
1 x Filter (C)
1 x 1" x 1" Poly Hex Nipple (D)
1 x 3/4" x 1" Poly Hex Nipple (E)
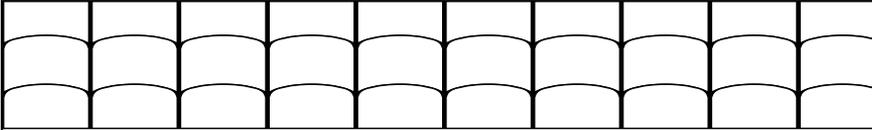1 x Submersible Float Sensor (F)
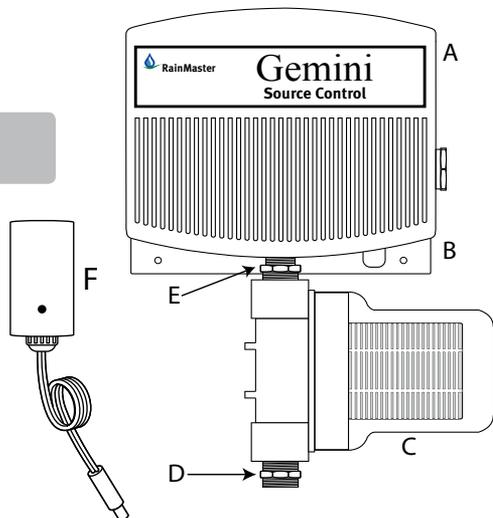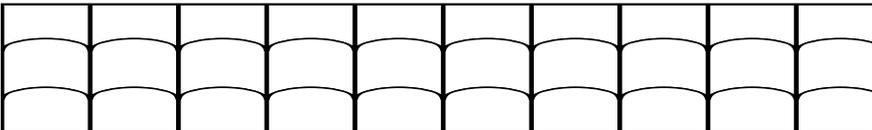
Installation Type 1 – Above ground tank with surface mounted (external) pump.
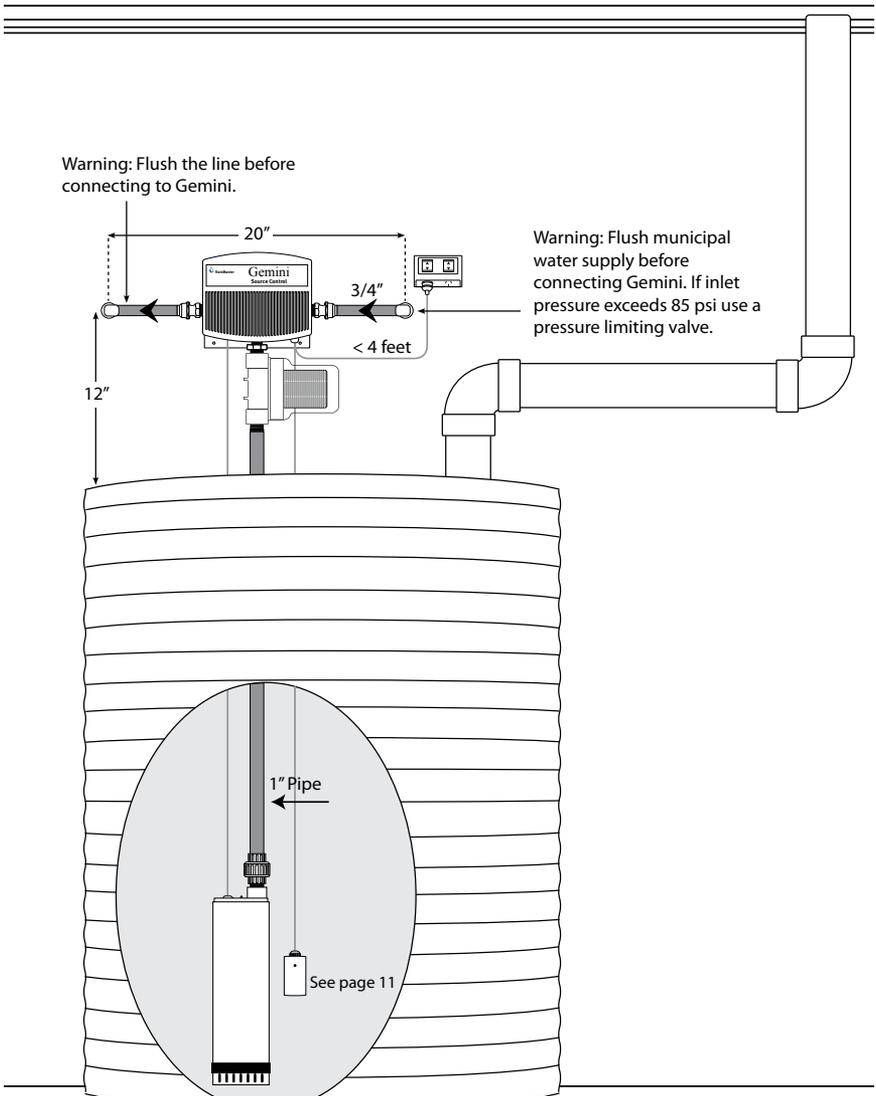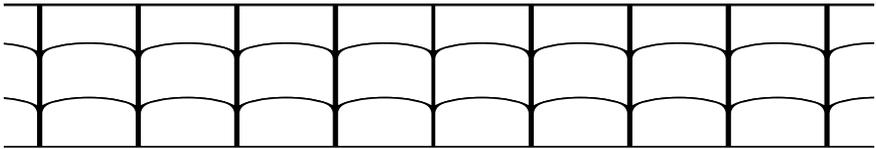
1. Position and install the tank in accordance with the manufacturers instructions.
2. Select a suitable location for the Gemini and its pump. This location must be within 4 feet of a weatherproof power outlet and as close to the tank as possible. Ideally the Gemini and pump should be installed in a weatherproof cover and on a solid surface such as a concrete slab. Gemini and its associated pump are mechanical equipment and do make noise. Be aware of this when selecting their location i.e. abutting bedrooms are not an ideal location.
3. Install the pump on the solid surface at your desired location.
4. Install the filter as per instructions in Appendix-B
5. Connect the pump to the suction point of the tank. The pump suction line must be a minimum of 1" and ideally should not exceed 4 feet in length. If the suction line length needs to be extended, the size of this must be upsized accordingly. For distances of 4'-20', use 1-1/4" pipe. Avoid exceeding 20' in length for the suction hose.
6. Before connecting the municipal water supply to the Gemini, flush the line to remove all filings and dirt.
7. Connect municipal water to the Gemini through a minimum 3/4" pipe. If the inlet pressure exceeds 85 psi it is necessary to install a pressure-limiting valve. For areas with dirty water install a line strainer to protect the internal mechanism of the Gemini.
8. Before connecting the outlet of the Gemini to the supply pipe system, flush the line to prevent any problems with fixtures connected to the supply pipe system.
9. Connect the outlet of the Gemini to the supply pipe system.
10. Install the submersible tank level sensor in the tank as per the instructions found on page 11. It is important that care is taken when installing the sensor to ensure correct operation of the Gemini.
11. Install the sensor cable from the tank to the location of the Gemini.
12. Install the power cable from the pump to the location of the Gemini. Do not under any circumstances run the pump's power cable in the same conduit as the sensor cable.
13. Turn on the water supply and check all joints for leaks.
14. Plug the sensor cable into the DC socket in the bottom of the Gemini.
15. Plug the power cable from the pump into the base of the Gemini.
16. Plug the Gemini power cord into a weatherproof power outlet and turn on.
17. Test the Gemini and pump by pushing the manual over ride button. The pump will start for a few seconds and then default back to municipal. The pump will only run when water is available in the tank and there is a demand.

Warning: Flush municipal water supply before connecting Gemini. If inlet pressure exceeds 85 psi, use a pressure limiting valve.

Warning: Flush the line before connecting to Gemini.

12"

Gemini
Source Control

3/4" Pipe

6"

See page 11

< 4 feet

18"

1" Pipe

Concrete Slab

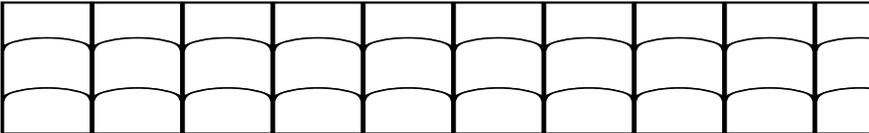*Install tank as per manufacturers instructions*

Installation Type 2 – Above ground tank with submersible pump.

1. Position and install the tank in accordance with the manufacturers instructions.
2. Select a suitable location for the Gemini. This location must be within 4 feet of a weatherproof power outlet. Gemini and its associated pump are mechanical equipment and do make noise. Be aware of this when selecting their location i.e. abutting bedrooms is not an ideal location.
3. Install the Gemini in the desired location using the wall mount bracket provided.
4. Install the submersible pump in the tank using a union and non-return valve.
5. Connect a pressure pipe riser to the union and extend the pipe to the Gemini location taking care to seal the hole in the tank. Use a minimum 1" ID pipe between the pump and the Gemini. if the distance is longer than 100', 1-1/4" or larger pipe is recommended. It may be necessary to offset the pipe work from the wall to match the inlet of the Gemini.
6. Install the filter as per instructions in Appendix-B
7. Before connecting the municipal water supply to the Gemini, flush the line to remove all fiings and dirt.
8. Connect municipal water to the Gemini through a minimum 3/4" pipe. If the inlet pressure exceeds 85 psi it is necessary to install a pressure-limiting valve. For areas with dirty water install a line strainer to protect the internal mechanism of the Gemini.
9. Before connecting the outlet of the Gemini to the supply pipe system flush the line to prevent any problems with fixtures connected to the supply pipe system.
10. Connect the outlet of the Gemini to the supply pipe system.
11. Install the submersible sensor in the tank as per the instructions found on page 11. It is important that care is taken when installing the float sensor to ensure correct operation of the Gemini.
12. Install the sensor cable from the tank to the location of the Gemini.
13. Install the power cable from the pump to the location of the Gemini. Do not under any circumstances run the pump's power cable in the same conduit as the sensor cable.
14. Turn on the water supply and check all joins for leaks.
15. Plug the sensor cable into the DC socket in the bottom of the Gemini.
16. Plug the power cable from the pump into the base of the Gemini.
17. Plug the Gemini power cord into a weatherproof power outlet and turn on.
18. Test the Gemini and pump by pushing the manual override button. The pump will start for a few seconds and then default back to municipal. The pump will only run when water is available in the tank and there is a demand.

Warning: Flush the line before connecting to Gemini.

20″

Gemini
Source Control

3/4″

< 4 feet

12″

Warning: Flush municipal water supply before connecting Gemini. If inlet pressure exceeds 85 psi use a pressure limiting valve.
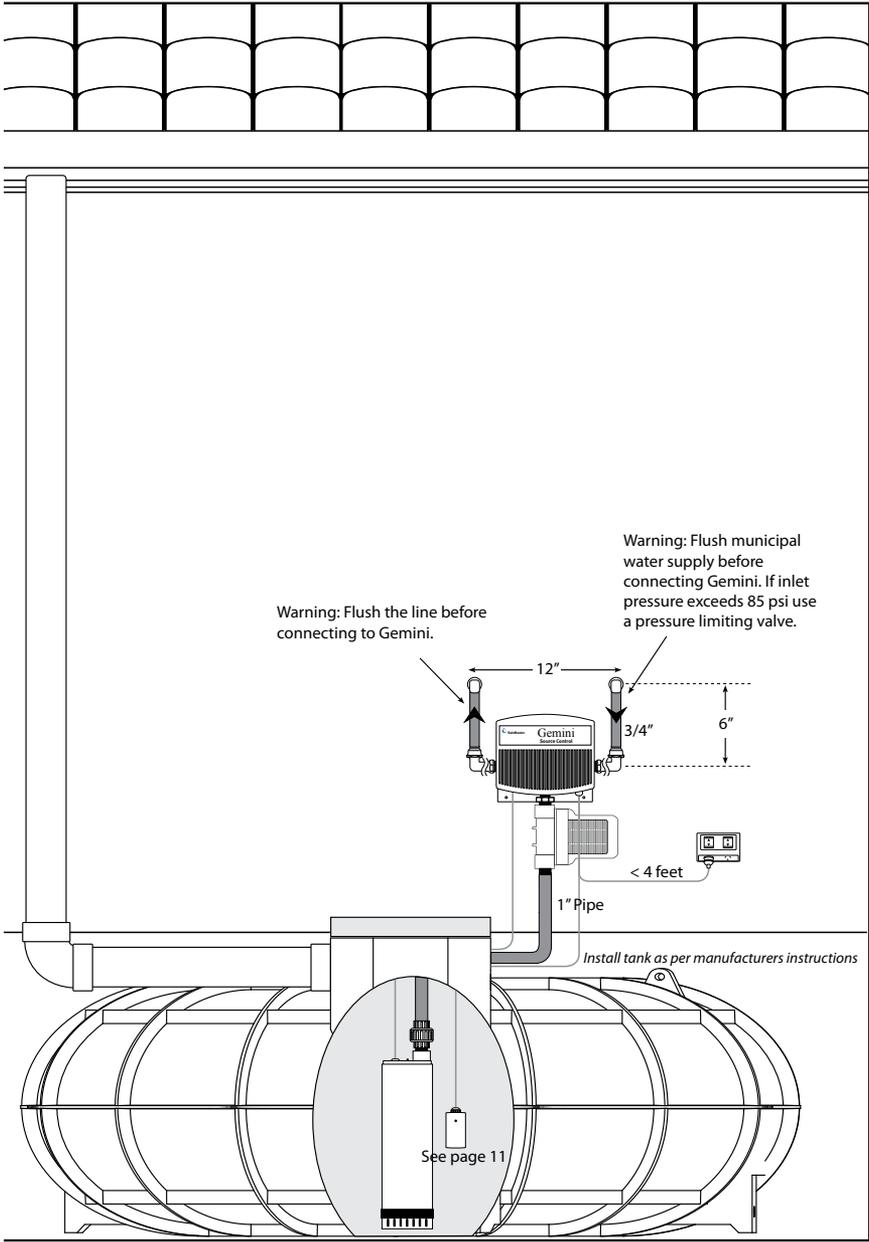
1″ Pipe

See page 11

Install tank as per manufacturers instructions

Installation Type 3 – Below ground tank with submersible pump.

1. Position and install the tank in accordance with the manufacturers instructions.
2. Select a suitable location for the Gemini. This location must be within 4 feet of a weatherproof power outlet. Gemini and its associated pump are mechanical equipment and do make noise. Be aware of this when selecting their location i.e. abutting bedrooms is not an ideal location.
3. Install the Gemini in the desired location using the wall mount bracket provided.
4. Install the submersible pump in the tank using a union & non-return valve.
5. Connect a pressure pipe riser to the union and extend the pipe to the Gemini location taking care to seal the hole in the tank. Use a minimum 1" ID pipe between the pump and the Gemini. if the distance is longer than 100', 1-1/4" or larger pipe is recommended. It may be necessary to offset the pipe work from the wall to match the inlet of the Gemini.
6. Install the filter as per instructions in Appendix-B.
7. Before connecting the municipal water supply to the Gemini flush the line to remove all filings and dirt.
8. Connect municipal water to the Gemini through a minimum 3/4" pipe. If the inlet pressure exceeds 85 psi it is necessary to install a pressure-limiting valve. For areas with dirty water install a line strainer to protect the internal mechanism of the Gemini.
9. Before connecting the outlet of the Gemini to the supply pipe system, flush the line to prevent any problems with fixtures connected to the supply pipe system.
10. Connect the outlet of the Gemini to the supply pipe system.
11. Install the submersible sensor in the tank as per the instructions found on page 11. It is important that care is taken when installing the sensor to ensure correct operation of the Gemini.
12. Install the sensor cable from the tank to the location of the Gemini.
13. Install the power cable from the pump to the location of the Gemini. Do not under any circumstances run the pumps power cable in the same conduit as the float sensor cable.
14. Turn on the water supply and check all joins for leaks.
15. Plug the sensor cable into the DC socket in the bottom of the Gemini.
16. Plug the power cable from the pump into the base of the Gemini.
17. Plug the Gemini power cord into a weatherproof power outlet and turn on.
18. Test the Gemini and pump by pushing the manual override button. The pump will start for a few seconds and then default back to municipal supply. The pump will only run when water is available in the tank and there is a demand.

Warning: Flush municipal
water supply before
connecting Gemini. If inlet
pressure exceeds 85 psi use
a pressure limiting valve.

Warning: Flush the line before
connecting to Gemini.

12"

3/4"

6"

Gemini
Source Control

< 4 feet

1" Pipe

Install tank as per manufacturers instructions

See page 11

Installation of the Submersible Water Level Sensor

The Submersible Sensor is supplied with the Gemini Source Control kit. This sensor is suitable for nearly all underground tanks and above ground tanks including polyethylene, polyproplyene, corrugated steel, modular rain tanks and concrete.

Step 1:

Select a location on the top of the tank that is not directly below the storm water inlet. Ensure that the chosen position allows enough cable length to reach the Gemini valve.

Step 2:

Drill a 1-1/2" diameter hole in the top of the tank.

Step 3:

Uncoil the cable and lower the submersible sensor through the hole. Loosen the cable gland to allow the cable to feed through the hole. Lower the sensor until it sits on the bottom of the tank.

Step 4:

Mark the cable with a pen above the cable gland. Lift the sensor until the pen mark is 6" above the cable gland.

Note: The height from the bottom of the tank is critical. For submersible pumps, 6" is recommended. For surface mounted (external pumps) 6" is also recommended, however the sensor must also be 2" higher than the tank outlet. Please check the tank outlet and position the switch 2" higher.

Step 5:

Tighten the cable gland firmly to hold the cable and sinker sensor in place.

Step 6:

Plug the sensor cable into the recepticle on the Gemini valve. Do not stretch or strain the cable. If it not is long enough, you will need to use a sensor extension cable which can be ordered from your Gemini dealer.

1-1/2" Ø hole

TOP OF TANK

6" or a least
2" above tank outlet

BOTTOM OF TANK
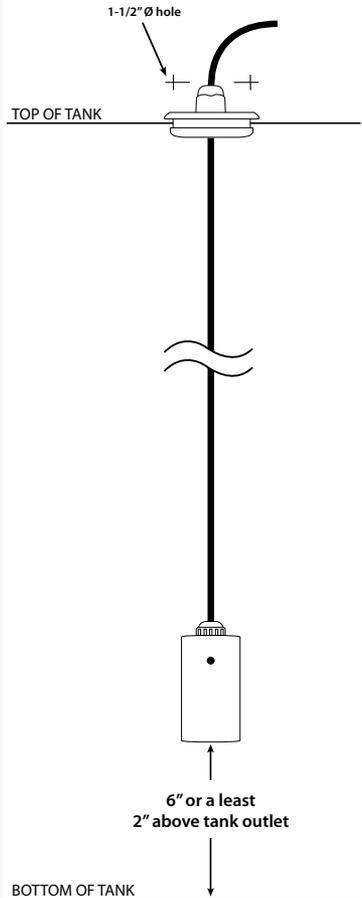
Finalizing the Installation

For submersible pumps, the water inside the tank will need to be at least 6" deep to ensure the pump will prime when tested. For surface mounted pumps it is important to prime the pump as per the manufacturers instructions before testing the system.

Once you have installed the tank, Gemini and pump it is important to ensure it is all working correctly. Fill the tank to a point where the water level sensor is submerged and activated. Create demand on the outlet of the Gemini by opening a tap or flushing a toilet. This will start the pump, the LED display on the unit will indicate that "TANK" water is in use. Turning off the tap will stop the pump.

Disconnect the sensor from the Gemini and perform the same scenario as before. Municipal water should flow and the LED display on the Gemini will indicate that "MAINS" water is in use. Be sure to plug the sensor back into the Gemini once the test is completed. Successful completion of both tests indicates your Gemini is operating correctly.

Operation & Maintenance Instructions

Gemini is an automated device so there is very little to do from an operational perspective and any servicing of Gemini should only be done by an authorized agent. Gemini will continuously draw rain tank water for a maximum of 30 minutes per cycle before defaulting to municipal water.

Override Button

The Override button on the Gemini can be used to switch between rainwater and mains water manually. The purpose of the override button is primarily for use during any servicing works, however its operation is as follows:

If the override button is pressed when there is no demand for water the unit will momentarily start the pump and then shut itself off when it detects that there is no demand.

If the override button is pressed when demand for water exists, the unit will switch to the other water source (i.e. municipal to tank or tank to municipal). If the unit is switched from municipal water to tank water and there is no water detected in the tank it will switch back to municipal water.

Pressing the override button will change the water source for the current instance of demand for water. Once demand has ceased the unit will revert to its automatic programming.

Strainer/Filter Cleaning

The strainer/filter element should be cleaned annually or as required in situations where the tank water is not clean. The following steps can be undertaken to clean the filter element:

Warning: As a user of the Gemini do not under any circumstances unscrew the grey nuts connecting the filter to the pipe work. These are watertight fittings and do not need to be touched.

1. Turn off the Gemini at the power point.
2. Hold & brace the filter where it is inline with the pipe work.
3. Unscrew the clear filter housing from the filter.
4. Remove the filter element from the housing.
5. Clean out the filter element with running water and a brush so it is free of any dirt and debris. Be careful not to damage the element while you are cleaning.
6. Reassemble in the reverse order

Troubleshooting

Problem	Cause	Solution
Pump will not switch off.	Water in use.	Check all outlets and turn off if found to be on.
	There is a leak in the pipe work on the outlet side of the Gemini.	Repair and seal the leak.
	Pump plugged directly into power.	Plug the pump into the Gemini as per the operating instructions.
Pump will not switch on.	No power to pump.	Check that the pump is plugged in to the Gemini. If it is, have an electrician check the relevant circuit.
	Tank level sensor not activating Gemini. "TANK" LED may be flashing to indicate a problem with the float sensor.	Ensure the sensor is installed correctly and plugged into the Gemini. Check that the sensor is not damaged and check that there is enough water in the tank.
	Mains water not getting to Gemini.	Ensure mains water is connected to the Gemini and that it is turned on.
	Faulty Pump.	Plug the pump directly in the power outlet. If it does not activate then there is a fault with the pump. Contact your supplier.
Municipal/Mains water in use when pump running.	Pump needs priming.	Prime the pump as per manufacturers instructions.
	Blocked pump impeller.	Have pump serviced and ensure correct debris protection devices are in place.
	Pump is faulty/damaged.	Contact your supplier and arrange for service.
Mains water not passing through Gemini.	Gemini is installed backwards.	Install Gemini according to the instructions provided.
	Inlet to Gemini or Main line leading to Gemini blocked.	Clear blockage.
Water not being supplied when there is demand.	Blockage in supply pipe work on outlet side of the Gemini.	Contact your installing plumber to have pipe work checked & cleared.
	No power & mains water supply.	Ensure Gemini has power and mains water supply.

Appendix A: Filter on Inlet to Pump
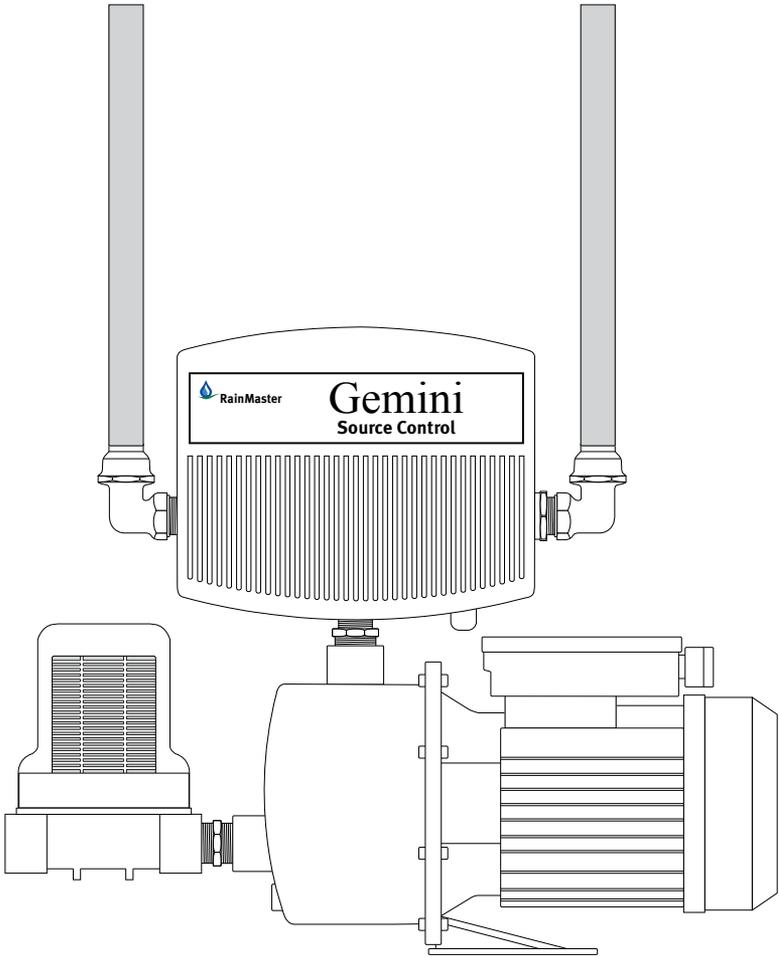
Appendix B: Filter Installation

An 80-mesh strainer/filter is included with the Gemini Source Control. The filter can be installed in three ways:

1. On the outlet of a surface (above ground) pump
2. On the inlet side of a surface (above ground) pump
3. On the outlet side of a submersible pump at the inlet to the Gemini

Filter Kit Components:

(A): 1" X 1" Threaded Nipple
(B): 1" X 1-1/4" Threaded Coupler
(C): Clear Housing with Removable 80 Mesh Filter Element
(D): 1" X 3/4" Threaded Nipple

Example-1: Installation on the outlet of an above-ground pump (Note: Use teflon tape or pipe sealant on all threads for parts (A), (B) and (C)).

Step-1: Thread nipple(A) into pump outlet.   Step-2: Thread coupler (B) onto nipple (A)

Step-3: Thread nipple(D) into Gemini.

Step-4: Thread filter(C) onto nipple(D)

Step-5:Tighten the nut at the bottom of filter(C) onto the coupler installed in Step-2 to complete the assembly.

Example-2: Installation on the inlet of an above-ground pump.

Step-1: Thread Nipple(A) into pump intake.
Step-2: Thread Coupler (B) onto Nipple(A)
Step-3: Tighten Filter(C) onto Nipple(A)
Step-4: Thread Nipple(D) into Gemini
Step-5: Thread Gemini and Nipple(D) onto pump outlet. (Do not over-tighten)

Example-3: Installation on the outlet side of a submersible pump at the Gemini inlet.

Step-1: Assemble Filter(C) onto Gemini as per diagrams above.
Step-2: Connect pipe from the outlet of the submersible pump to threaded nut at the bottom of filter(C) and tighten.

RainMaster

Gemini
Source Control