



QUICK INSTALL GUIDE SOLENOID VALVE CHAMBER

Where remote solenoids are specified, a single supply pipe is taken from the pump or tap supply and connected to a single-entry point on the solenoid manifold. From each solenoid valve outlet, a separate zone pipe is then taken to supply sprinklers, dripline etc. Remote solenoids are usually supplied as a kit of parts comprising a manifold, solenoid valves, assembly fittings, an underground chamber, root guard matting and electrical connectors.

Method

- The location of the remote solenoid chamber will be highlighted on the system layout drawing. For a single valve a round chamber with twist off lid is provided and for 2-4 valves a rectangular one with 14mm bolt secured lid (Metal lid options require a special key). An extension is also available if greater depth is required. This fits over the top of the standard chamber and utilises the original lid. Chambers are pre-drilled with LH/RH entry and 4 outlet holes as standard.
- The ground should be excavated to accommodate the size of the chamber being used, allowing for the connection of pipework.
- The following gives a guide to the size required:

Chamber Type	Base Width	Base Length	Assembled Height	Pipe Depth	Standard Load
10" round KHC10	335mm	n/a	265mm	300mm	1.5T
Use 110mm pipe to extend the chamber depth if required					
Standard KHCSTD	400mm	540mm	310mm	300mm	
Standard + Extension	n/a	n/a	+ 1 470mm + 2 620mm + 3 770mm	450mm 600mm 750mm	

Note: to aid with system draining the pipe should be higher than the valves.

- The base of the excavated area should be firm and level (ensure lid will be flush with finished ground level). Root guard matting is supplied with the chamber and this should be spread out on the ground prior to installation of any components.
- Using the specific assembly drawing connect the parts together (all manifold fittings have built in seals, so no PTFE required). If pressure regulators are supplied fit these to the solenoid valves before assembly (see instructions). The inlet can be LH or RH assemble manifold as required. 1" male

pipe fittings to suit the layout should be included in the order, screw these onto the inlet and outlet unions as required (3/4" or 1" female compression fittings will screw directly onto an KMAN4-3, KMAN4 solenoid outlet fitting without the need for a 1" union).

- Place the assembly on the matting and route the supply and distribution pipes to it. To ease installation the fitting can be removed from the union and put on the pipe first (see instructions I09). Manifolds can be linked together using 1" unions and suitable pipe fittings use the end of the manifold to connect to the next chamber.
- Remove the chamber lid by unscrewing the 14mm bolt and prizing the edge up. Temporarily place the chamber on top of the manifold assembly ensuring it fits correctly and is at the right level (taking lid into account). Remove chamber and tighten all fittings. It is a good idea if possible, to pressure test the pipework and manifold assembly before securing the chamber.
- Finally place the chamber on top of the manifold assembly, fit the lid and pull the matting up around the sides and pipework. Back fill in stages compacting the soil around the chamber as you go and ensure it is secure and level.

Wiring (see I29 – Solenoid Wiring)

Before carrying out any wiring always read the manufacturer's instructions supplied with the controller and do not exceed the wire max run length as stated. The following instructions provide a general guide only.

Using Multi-core Cable

For mains powered controllers, the solenoid valves are operated at 24vac via low voltage 0.5mm² multi-core signal cable. Battery controllers such as the Hunter XC Hybrid and Hunter Node Bluetooth (for Galcon DC see separate wiring details below) use 9v DC latching valves. The number of signal cable cores -1 determines how many solenoids it will connect (e.g. 6 core cable will run 5 valves, as one wire is used as a common). Several individual signal cables may be used in the system. For decoder type systems, a two-core cable is used; see the manufacturer's specific instructions for connections etc. 24v AC valves are not polarity dependent, but 9v DC valves are, so ensure they are connected the right way round (as per manufacturer's instructions).

Note: the maximum length of cable permitted will be determined by the specific controller being used (see manufacturer's instructions).

If more than one signal cable is being used always label them for future reference.

1. Route the signal cable along with the supply pipe, secure loosely with tape or straps. If connecting several chambers using a single cable then loop into each. On the last one or if only connecting one, bring the end of the cable into the chamber (allow a 500mm tail to aid wiring).
2. It is easier to do the wiring outside of the chamber so bring the two wires from each solenoid valve to the surface and keeping them separate from the other valves cut 50mm from the ends.
3. Strip 100mm of the grey outer sheathing from the multicore signal cable and select **one unique coloured wire for each solenoid valve** and a **single colour wire to use as the common for all valves e.g. red z1, green z2, white common**. If looping the cable strip a 150mm section of the grey outer sheathing to expose the inner cores and ensure the common and any additional chamber valve wires are left untouched or re-joined if cut.

4. **Without** stripping the cable sheathing, fully insert the red wire of the solenoid valve into one entry hole of the electrical grease crimp connector and the chosen coloured wire of the multicore signal cable into another (the wires can be viewed from the underside). Then crimp the top down securely using pliers or grips ensuring the two wires are secure.
5. **The solenoid valve common wires are all linked together.** Using a grease crimp electrical connector fully insert the remaining solenoid valve wire into one entry hole, the chosen coloured common wire into another entry hole and one of the cut off lengths of solenoid wire into the last entry hole (this will provide a link to the other valve common wires). Crimp the top down securely using pliers or grips ensuring all wires are secure.
6. Repeat steps 4 + 5 for the remaining valves ensuring all valves are linked to the common wire colour and if additional chambers are being used the common has been re-connected to the outgoing multicore signal cable. After ensuring all valves operate correctly from the controller, bundle all wires together and secure with tape/strap.

Galcon DC controller

1. When using the Galcon DC battery controller the 9v solenoid valve wires are uniquely numbered and should only be connected to the corresponding controller wires as per manufacturer's instructions. Both the Galcon and Hunter Node controllers can be located inside the underground chamber.

Dripper zones

Dripline and drippers run at a lower pressure than sprinklers. For pumped systems, or where the mains pressure is high, it is always recommended that an Accu-Sync pressure regulator is added to solenoid valves that operate a drip zone.

DB Valve option

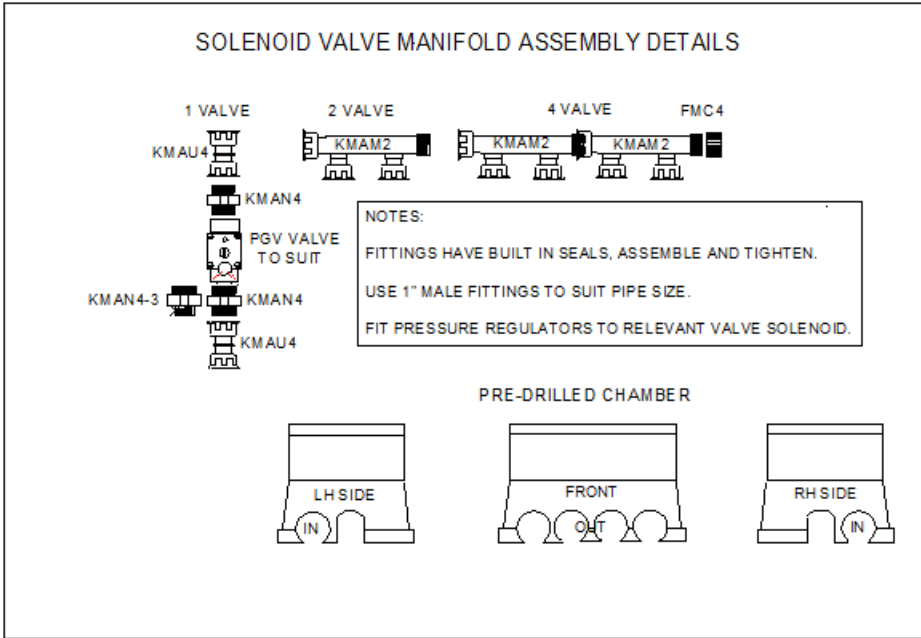
If a 'DB' master valve option is being used, this should be located before the first valve chamber. The 'DB' master valve solenoid should be housed inside a 10" round chamber, with the valve inlet connected to the main supply pipe using a 1" compression fitting to suit. The outlet of the valve is connected to the plain riser of the 'DB' valve assembly. The riser fitted with the 'DB' valve, should be connected to the inlet of the solenoid valve manifold assembly using a suitable length of supply pipe and 1" compression pipe fittings to suit or 1" nipple if connecting directly.

The DB valve vent outlet should sit 300mm above the soil level, compact the soil around the lower section of the risers to ensure the 'DB' valve remains vertical. Route the solenoid valve wires through the cut-outs on the chambers and connect onto the signal cable or controller wires using grease crimp electrical connectors. The master valve is wired into the Pump or Master valve output usually P/MV and C terminals or two MV wires on the Galcon DC controller (see specific controller instructions for connection details). It is recommended that the 'DB' valve membrane is replaced every 3 years.

Maintenance

The solenoid valve manifold should be drained of water during periods of likely frost, use the drain cap at the end of the manifold, manually open each valve by removing the bleed screw (keep safe). (Do not totally disconnect fittings as ground movement over time may make it difficult to reconnect).

Solenoid valves can be cleaned out in situ by firstly depressurising the system and then removing the top (3/8"AF). Ensure the valve is reassembled correctly. Replacement rubber diaphragms and 9vDC and 24vAC solenoid coils are available as spares.



Accu-sync pressure regulator for drip zones

