



DC Diaphragm Pump Manual
23 Series

FEATURES

- Compact design with up to 5.6LPM (1.5GPM)
- Run dry capable for normal workload
- Industry standard mounting pattern
- Dual chamber diaphragm pump
- Multiple control methods & fittings
- Intermittent Duty
- Quiet operation
- Self-priming

Applications

- Cleaning machines, humidifier, water purification, medical apparatus
- Food beverage filling, Coco cola, coffee, juice dispenser machines
- Sprayer fixtures (vehicle-mounted sprayers, electric sprayers)
- Liquid transfer, pressurisation, and circulation
- Solar water systems
- Yacht/RV/Caravan
- Any other pressurisation system

Installation

Materials Required

1x diaphragm pump with 3/8" barb or 1/4" quick attach fitting

2x (minimum required) pieces of flexible, reinforced hose piping with a collapsing strength twice the inlet collapsing pressure with a minimum of 3/8" ID or 1/4" PE hose.

4x Stainless steel hose clamps and screws (Pump with 1/4" quick attach fitting will not need this)

4x screws to fasten pump to mounting surface

1x fuse

1x screwdriver

1x tube cutter

(If required) Teflon tape or sealant

Setup

1. The pump can be mounted in any position. If mounted vertically, the pump head must be positioned below the motor, to avoid leakage into the motor causing in the event of a malfunction.
2. Secure the feet, but do not compress the rubber. Over tightening of the securing screws may reduce the ability of the feet to dissipate noise and vibration.

3. Intake hose must be minimum 3/8" (10mm) ID reinforced hose. Main distribution line from the pump outlet should also be 3/8" (10mm) ID with branch and individual supply line to outlets no smaller than 3/8" (10mm).
4. Plumb the system using high pressure (2x pump rating) braided, flexible tubing to minimize vibration/noise.
5. The inlet pressure must not exceed 60PSI. In general, try to avoid any inlet pressure completely.
6. Avoid any kinks or fittings which could cause excessive restrictions.
7. If a strainer is installed, ensure it is positioned on the inlet side.
8. Ensure all fittings are secured to avoid leakages
9. Use clamps at both ends of the hose to prevent air leaks into the water line. (Pump with 1/4" quick attach fitting will not need this)
10. If a check valve is installed, it must have a cracking pressure of no more than 2 psi.
11. If applying a sealer or plumbing tape, be careful not to over tighten.
12. The pump should be wired on its own dedicated circuit. Connect the positive lead (red) and the negative lead (black) to the corresponding connections on your power source.
13. In an easily accessible location, install a switch to control power to the pump. Turn the pump off when not in use for extended periods or when the tank is empty.
14. The electric circuit should be protected with an over-current protection device (fuse) in the positive lead.
15. The pump circuit should not include any other electrical loads.
16. Please reference the wire chart under the electrical information, for the correct wire sizing to use for various lengths of runs.
17. After installation, check the voltage at the pump motor. Voltage should be checked when pump is operating. Full voltage must be available at the pump at all times.

Setup

1. Flexible potable water hose or PEX tubing is recommended instead of rigid piping. If you choose to use rigid piping, provide a short length of flexible hose between the pump and the rigid piping to avoid noise and vibration.
2. We do not recommend using metal fittings. Where possible, use the provided plastic fittings or a suitable replacement.
3. Do not adjust the bypass personally without the help of a technician.
4. Lack of sanitising and maintenance is one of the main causes of reduced performance of the pump. Please ensure regular maintenance of the system is carried out to ensure optimum performance of the pump is maintained. We especially recommend this before and after extended periods where the pump will not be used.

ELECTRICAL INFORMATION

M (ft.)	mm ² (AWG)
0-15 (0-50)	1.5 (16AWG)
15-19 (50-65)	2.5 (14AWG)
19-30 (65-100)	4 (12AWG)
30-39 (100-130)	6 (10AWG)

TROUBLE SHOOTING

Pulsating flow - Pump cycles on and off

- Check inlet and outlet lines for kinks.
- Plumbing lines or fittings may be too small.
- Clean faucets and filters.
- Check tightness of fittings for air leaks.

Failure to prime but motor operates - No pump discharge

- Restricted intake or outlet line.
- Air leak in intake line.
- Punctured pump diaphragm.
- Initial amp supply is not enough to sufficiently start the motor.
- Debris clogged in the valves.
- Crack in pump housing.

Motor fails to turn on

- Loose or improper wiring.
- Pump circuit has no power.
- Blown fuse.
- Failed pressure switch.
- Defective motor.

Pump fails to turn off after all fixtures are closed

- Punctured diaphragm.
- Discharge line leak.
- Defective pressure switch.
- Insufficient voltage.
- Clogged valves in pump head.

Low flow and pressure

- Air leak at pump intake.
- Accumulation of debris inside the pump or system.
- Worn pump bearing (possibly accompanied by a loud noise generated by the pump).
- Punctured diaphragm.
- Defective Motor.

Noisy

- Check if the mounting feet are compressed too tightly.
- Is the mounting surface flexible? If so, it may be increasing the noise via increased vibrations.
- Check for loose head/screw
- If the pump is plumbed to rigid pipe, then this may transmit noise more easily. Refer to Notes for solution.



Address: March May ltd, Howard Road, Eaton Socon, St. Neots,
Cambridgeshire, PE19 8NZ, UK

Telephone: +44 (0)1480 214444

Fax: +44 (0)1480 405336

Email: sales@marchmay.co.uk

Web: www.marchmay.co.uk