

GARDENING | IRRIGATION
POND | FOUNTAIN



ECO+ PLUS™

ELITE SERIES

COMMERCIAL GRADE

MULTISTAGE AND JET PUMPS

INSTRUCTIONS FOR INSTALLATION AND MAINTENANCE

MULTISTAGE PUMPS

727180 | 924 GPH

727182 | 1416 GPH

JET PUMPS

727188 | 708 GPH

727190 | 900 GPH



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WARNING: *Read entire instruction manual carefully before using.*



REMOVE THE POWER PLUG FROM THE ELECTRICAL SOCKET BEFORE HANDLING THE PUMP TO AVOID ELECTRIC SHOCK.



ABSOLUTELY AVOID DRY OPERATION.



PROTECT THE PUMP AGAINST INCLEMENT WEATHER.



The pump is equipped with a thermal overload safety device. In the event of overheating, this device automatically switches off the pump. The cooling time is roughly 15 to 20 minutes, then the pump automatically comes on again. If the overload cutout is tripped, it is essential to identify and deal with the cause of the overheating. (See Troubleshooting).



Do not use in swimming pools, ponds or basins where people are present.
Do not use for pumping hydrocarbons (petrol, diesel fuel, combustible oils, solvents).
Do not pump continuously for long periods of time unless in the case of emergency.



Always clean the pumps before storage. See the chapter "Maintenance and Cleaning".

MULTISTAGE PUMP

- 1. PUMPABLE LIQUIDS** - Max. particle size Ø.20 inch.
The pump is watertight and must be immersed in liquid.

Fresh water	●
Rainwater (filtered)	●
Clear waste water	○
Dirty water	○
Fountain water (filtered)	●
River or lake water	●
Drinking water	●

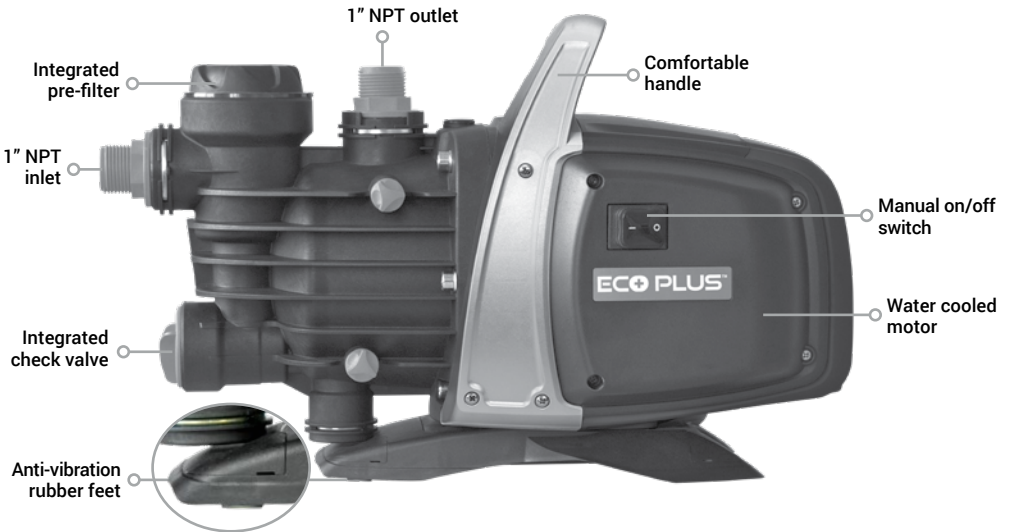
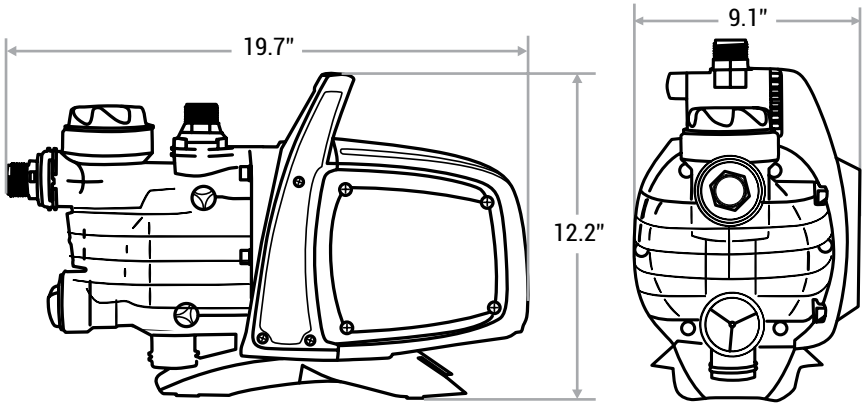
● Suitable
○ Not suitable

2. TECHNICAL SPECIFICATIONS

- Supply voltage: 115 – 120V, see electrical data plate
- Delayed line fuses (115 – 120V version): indicative values (Ampere)
- Storage temperature: 14° F – 104° F

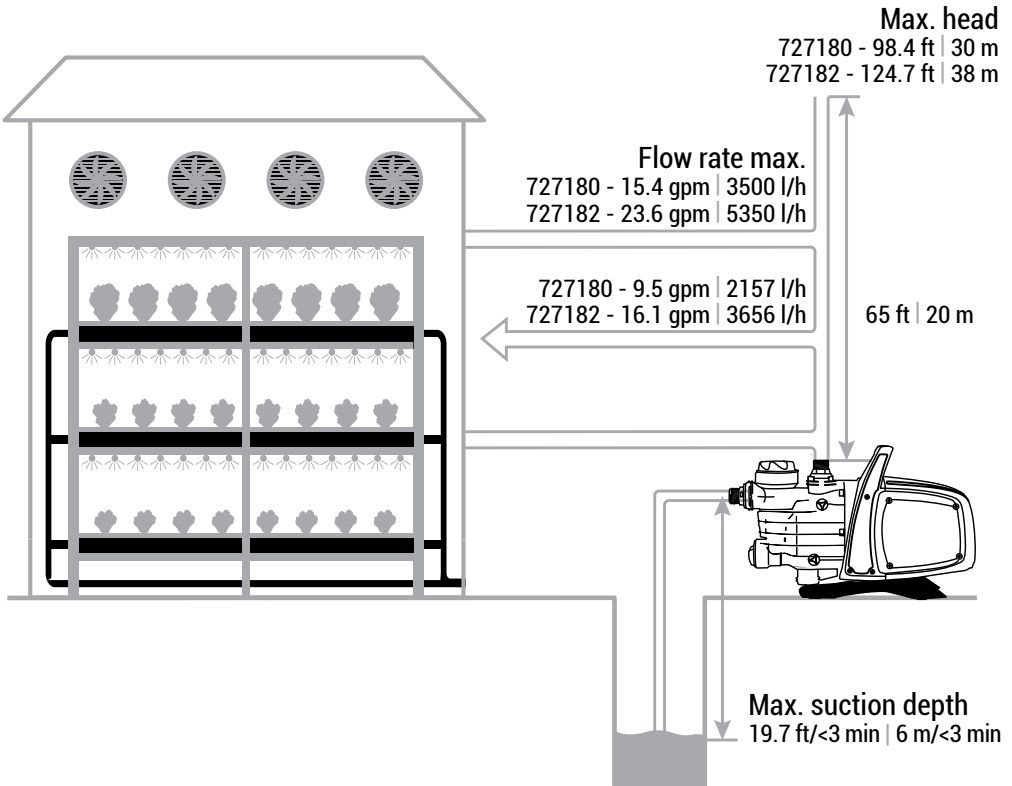
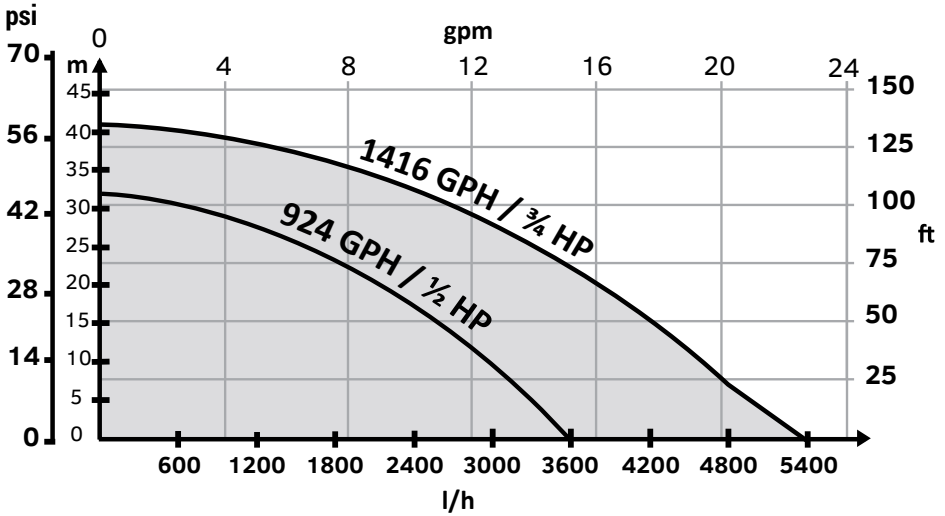
	TECHNICAL SPECIFICATIONS	Product# 727180 924 GPH 1/3 HP	Product# 727182 1416 GPH 3/4 HP
Electrical data	Power	730 Watt	1040 Watt
	Voltage	115 V-120 V AC	115 V-120 V AC
	Frequency	60 Hz	60 Hz
	Amps	6.6	9.6
	Manual on/off switch	YES	Yes
Hydraulic data	Flow rate max.	15.4 gpm 3500 l/h	23.6 gpm 5350 l/h
	Max. pressure	43.5 psi 3.0 Bar	55.1 psi 3.8 Bar
	Max. head	98.4 ft 30 m	124.7 ft 38 m
	Start pressure	26.1 psi 1.8 Bar	26.1 psi 1.8 Bar
	Max. working pressure	87 psi 6 Bar	87 psi 6 Bar
	Max. suction depth	19.7 ft/<3 min 6 m/<3 min	19.7 ft/<3 min 6 m/<3 min
Dimensions/weight Range of use/materials	Pump dimensions <i>See illustration</i>	19.7 in x 9.1 in x 12.2 in 500 mm x 230 mm x 310 mm	19.7 in x 9.1 in x 12.2 in 500 mm x 230 mm x 310 mm
	Length of Power Cable	5 ft 1.5 m	5 ft 1.5 m
	Net weight	21.3 lbs 9.7 kg	23.1 lbs 10.5 kg
	Liquid range temperature	32°-95° F 0°-35° C	32°-95° F 0°-35° C
	Max. Ambient temperature	104° F 40° C	104° F 40° C
	DNA / DNM NPT	1 in M / 1 in M	1 in M / 1 in M
	Impellers	3	3
	Noise	65 dB	75 dB

MULTISTAGE PUMP DIMENSIONS AND FEATURES

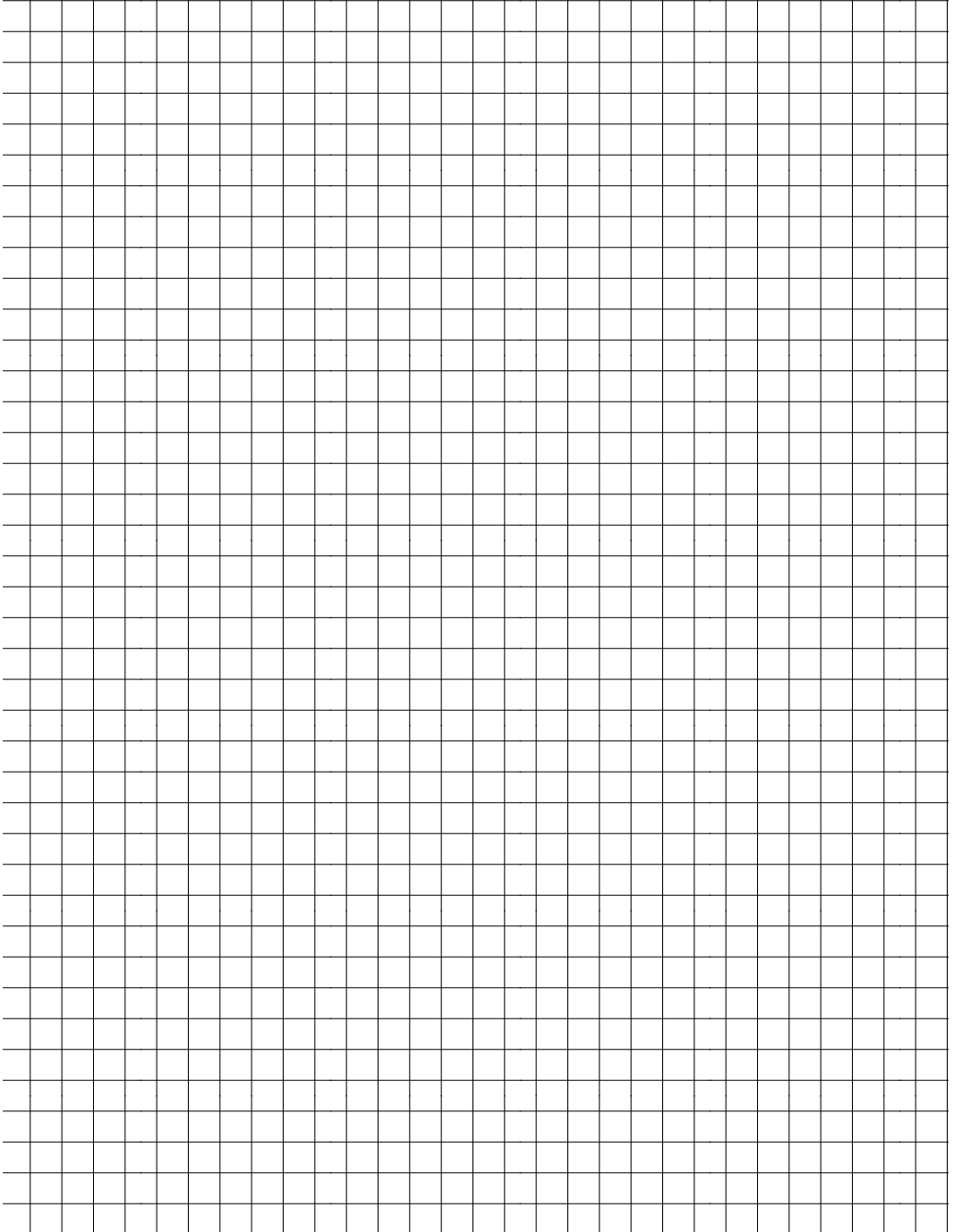


Multi-use tool included.
Use to remove pre-filter, open water charge/discharge tap and remove the check valve for cleaning.

MULTISTAGE PUMP PERFORMANCE CURVE



PLANNING GRID



JET PUMP

- 1. PUMPABLE LIQUIDS** - Max. particle size Ø.20 inch.
The pump is watertight and must be immersed in liquid.

Fresh water	●
Rainwater (filtered)	●
Clear waste water	○
Dirty water	○
Fountain water (filtered)	●
River or lake water	●
Drinking water	●

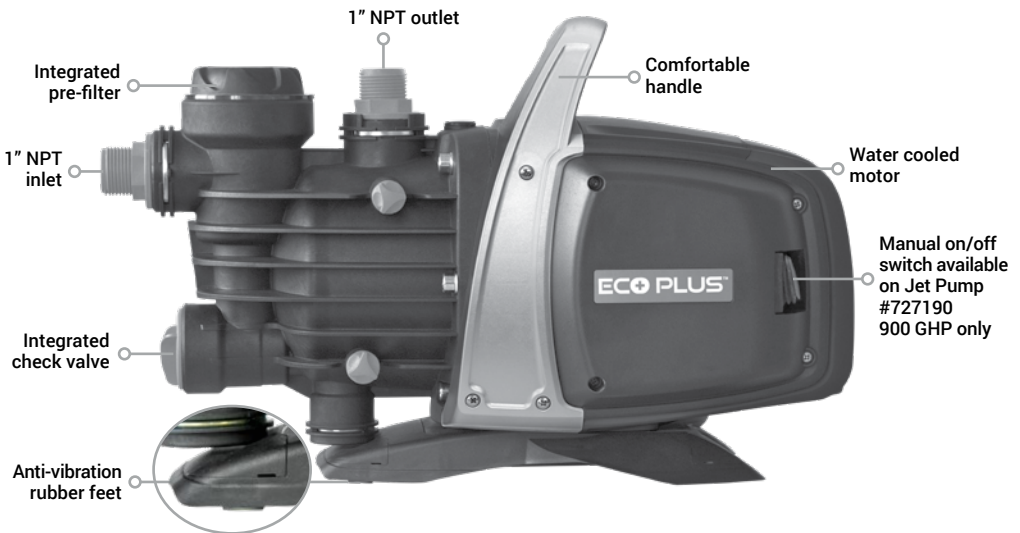
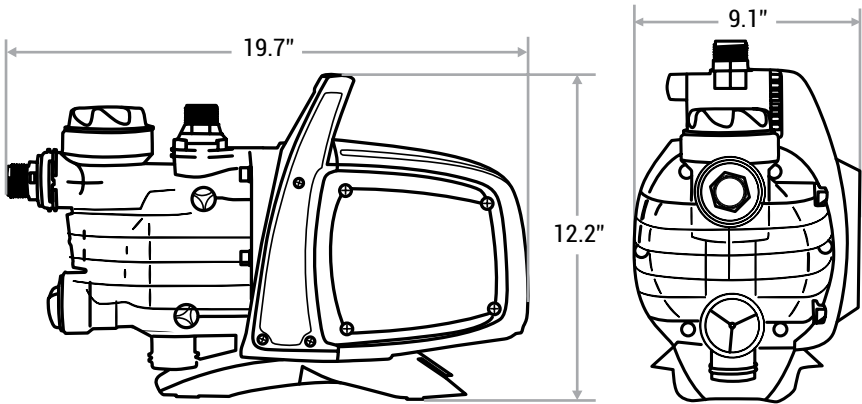
- Suitable
○ Not suitable

2. TECHNICAL SPECIFICATIONS -

- Supply voltage: 115 – 120V, see electrical data plate
- Delayed line fuses (115 – 120V version): indicative values (Ampere)
- Storage temperature: 14° F – 104° F

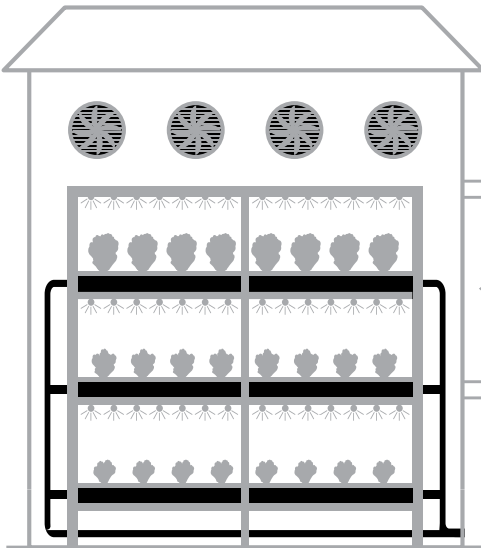
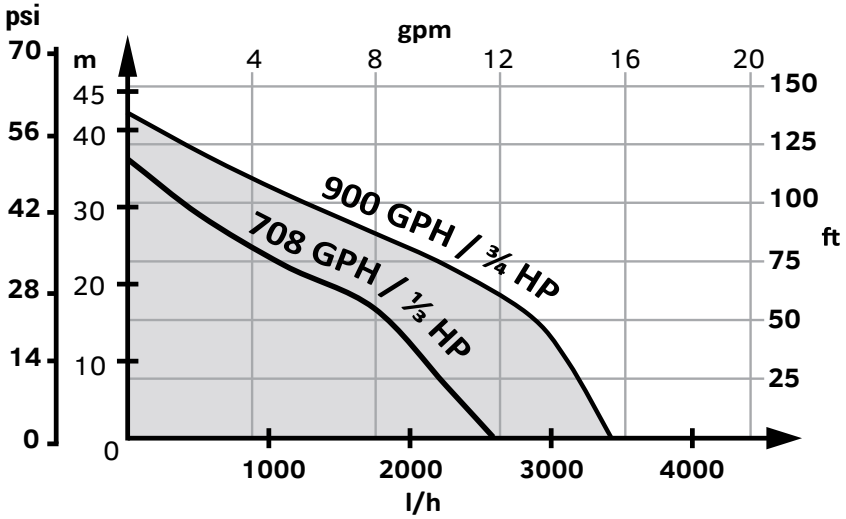
	TECHNICAL SPECIFICATIONS	Product# 727188 708 GPH 1/3 HP	Product# 727190 900 GPH 3/4 HP
Electrical data	Power	780 Watt	1050 Watt
	Voltage	115 V-120 V AC	115 V-120 V AC
	Frequency	60 Hz	60 Hz
	Amps	7.3	9.8
	Manual on/off switch	No	Yes
Hydraulic data	Flow rate max.	11.8 gpm 2680 l/h	15.0 gpm 3400 l/h
	Max. pressure	53.7 psi 3.7 Bar	62.4 psi 4.3 Bar
	Max. head	121.4 ft 37 m	141.1 ft 43 m
	Start pressure	26.1 psi 1.8 Bar	26.1 psi 1.8 Bar
	Max. working pressure	87 psi 6 Bar	87 psi 6 Bar
	Max. suction depth	26.2 ft/<3 min 8 m/<3 min	26.2 ft/<3 min 8 m/<3 min
Dimensions/weight Range of use/materials	Pump dimensions <i>See illustration</i>	19.7 in x 9.1 in x 12.2 in 500 mm x 230 mm x 310 mm	19.7 in x 9.1 in x 12.2 in 500 mm x 230 mm x 310 mm
	Length of Power Cable	5 ft 1.5 m	5 ft 1.5 m
	Net weight	19 lbs 8.6 kg	21.7 lbs 9.8 kg
	Liquid range temperature	32°-95° F 0°-35° C	32°-95° F 0°-35° C
	Max. Ambient temperature	104° F 40° C	104° F 40° C
	DNA / DNM NPT	1 in M / 1 in M	1" M / 1" M
	Impellers	1	1
	Noise	73 dB	79 dB

JET PUMP DIMENSIONS AND FEATURES



Multi-use tool included.
Use to remove pre-filter, open water charge/discharge tap and remove the check valve for cleaning.

JET PUMP PERFORMANCE CURVE



Max. head
 727188 - 121.4 ft | 37 m
 727190 - 141.1 ft | 43 m

Flow rate max.
 727188 - 11.8 gpm | 2680 l/h
 727190 - 15 gpm | 3400 l/h

727188 - 8.5 gpm | 1920 l/h
 727190 - 14 gpm | 3180 l/h

65 ft | 20 m

Max. suction depth
 26.2 ft / <3 min | 8 m / <3 min

 **THE PUMP MUST BE SUPPORTED BY A BASE. NEVER SUSPEND THE PUMP FROM PIPES.**

3. MANAGEMENT

3.1 Storage: Pump must be stored in a dry, dust free covered area that is free from vibrations. Keep the pump in its original packaging until time of installation.

3.2 Transport: Avoid subjecting the pump to needless impacts and collisions.

4. WARNINGS

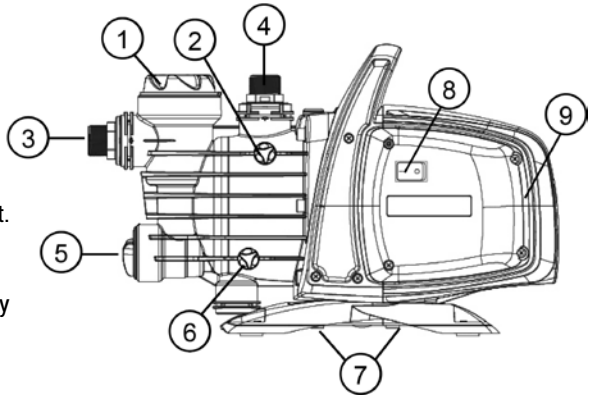
 **DO NOT CARRY PUMP BY THE POWER CABLE. ALWAYS CARRY PUMP USING THE HANDLE.**

- Never allow the pump to run dry.
- It is recommended to open/close the venting/drainage caps (2 and 6) without applying excessive force.

5. INSTALLATION

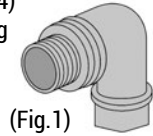
The electrical system must be compliant with local codes.

- 1) Pre-filter.
- 2) Vent cap.
- 3) Swivel suction connection.
- 4) Swivel delivery connection.
- 5) Integrated NRV.
- 6) Drainage cap.
- 7) Vibration-damping rubber feet.
- 8) Manual ON/OFF switch on both Multistage Pumps.
- 9) Manual ON/OFF switch on only #727190 900 GPH Jet Pump.



- The pump must be installed in a place protected from unfavorable weather conditions and with an environment temperature not higher than 40° C.
- The pump is provided with anti-vibration rubber feet. In the case of fixed installations, the rubber feet can be removed and the pump can be anchored to a base (7).
- Do not allow pipes to transmit excessive force to the inlets (3) and (4) to avoid deformations or breakages.
- **Always place the pump as close as possible to the liquid to be pumped. The pump must be installed only in horizontal position.**
- Pipes must never have an internal diameter smaller than that of the pump inlets; on intake, the pump is provided with a filter (1) and a check valve (NRV) (5).
- For suction depths of over four meters or with long horizontal stretches it is advisable to use an intake hose with a diameter larger than that of the intake aperture of the pump. To prevent the formation of air pockets, the intake hose must slope slightly upwards towards the pump. (Fig.2)
- If the suction pipe is made of rubber or flexible material, always check that it is reinforced vacuum-resistant type to avoid shrinkage due to suction.

- In case of a fixed installation, it is recommended to fit a closing valve on both the suction side and the delivery side. This allows closure of the line upstream and/or downstream from the pump, useful for service and cleaning operations or for periods in which the pump is not in use.
- The pump has a rotating inlet and outlet to facilitate installation (3) and (4)
- In the case of flexible pipes, if necessary, use a bend (fig. 1) and a gardening kit with a PE pipe and a kit of couplings with lance (kits sold separately). In the case of very small dirt, as well as the integrated filter (1), it is recommended to use a pump inlet filter fitted on the suction pipe.




(Fig.1)

 **Do not subject the motor to excessive starts/hour; it is strongly recommended not to exceed 20 starts/hour.**

 **THE DIAMETER OF THE SUCTION PIPE MUST BE GREATER THAN OR THE SAME AS THE DIAMETER OF THE PUMP INLET (SEE TABLE 2).**

6. ELECTRICAL CONNECTION

 Ensure that the mains voltage is the same as the value shown on the motor plate and that there is the possibility of making a good ground connection. Follow the indications on the technical data plate and technical specifications on page 3.

The length of the power cable on the pump limits the installation distance, if an extension is required, make sure that it is of the same type (e.g. SJTOW 16AWG o SJTOW 15AWG depending on the installation) see page 3.

7. START-UP

 **Do not start the pump without having completely filled it with liquid, about 4 litres, until it comes out of the air vent cap (2). If the water supply is finished, take the plug out of the socket immediately and switch off the pump. Avoid dry running.**

- 1) Before starting, check that the pump is properly primed by removing the filling cap of the transparent filter (1) with the appropriate tool provided. Fill completely with clean water through the filling hole. While filling, open the vent cap (2) to let out the air. This ensures the mechanical seal is well lubricated and the pump immediately starts to work regularly. **Dry operation causes irreparable damage to the mechanical seal.**
- 2) The filling cap (1) and vent cap (2) must be screwed on accurately until it stops.
- 3) Insert the power cable in a 115-120V power socket. Attention! The pump motor will start immediately and water will start to come out after 3 minutes, depending on the depth of the water level in the well or cistern.
- 4) The pump will continue to work and supply water. **Attention! Avoid dry running.**
- 5) To switch off the pump, take the plug out of the power socket.

 **In case of problems with the priming, repeat the process until all air in the suction is gone.**



8. PRECAUTIONS

RISK OF FREEZING: when the pump remains inactive at a temperature lower than 32° F, it is necessary to ensure that there is no water residue which could freeze causing cracks in the plastic parts. If the pump has been used with substances that tend to form deposits, or with water containing chlorine, rinse after use with a powerful water jet in order to avoid the formation of deposits or coatings which would reduce the performance of the pump.

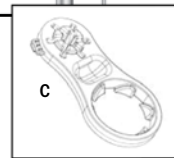
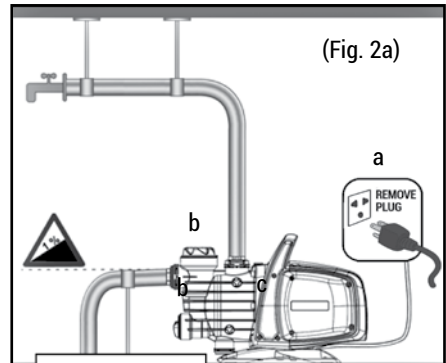
9. MAINTENANCE AND CLEANING

In normal operation the pump does not require any type of maintenance. In any case, all repair and maintenance work must be carried out only after having disconnected the pump from the power supply. When restarting the pump, ensure that the suction filter is always fitted so as not to create the risk or possibility of accidental contact with moving parts.

9.1 Cleaning the suction filter

(Fig. 2a, 2b)

- Switch off electric power to the pump (a).
- Drain the pump, opening the drainage cap (b), after having first closed the gate valves upstream (if present).
- Unscrew the cover of the filter chamber, with your hands or with the appropriate tool provided (c).
- Extract the filter unit from the top (d).
- Rinse the cup under running water and clean the filter with a soft brush.
- Reassemble the filter, performing the operations in inverse order.

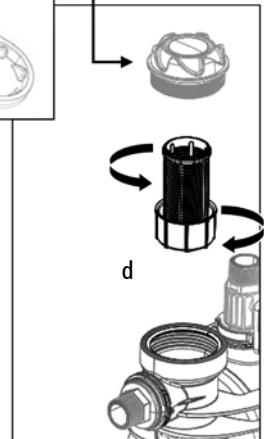
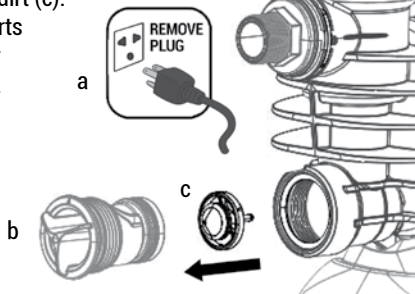


(Fig. 2b)

9.2 Cleaning the NRV

(Fig. 3)

- Switch off electric power to the pump (a).
- Remove the cap of the NRV (b) with the accessory provided.
- Remove the NRV check valve and clean to remove any dirt (c).
- Reassemble parts in reverse order of disassembly.




10. TROUBLESHOOTING



DISCONNECT THE PUMP FROM THE POWER SUPPLY BEFORE TROUBLESHOOTING.

If there is any damage to the power cable or pump, necessary repairs or replacements must be performed by the manufacturer, authorized dealer, or by an equally-qualified party in order to prevent any risks.

ISSUE	POSSIBLE CAUSES	REMEDIES
The motor does not start or make any noise.	<ul style="list-style-type: none"> A. Check the electric connections. B. Check that the motor is live. C. Check the protection fuses. D. Possible intervention of thermal protection. 	<ul style="list-style-type: none"> A. Change any burnt out fuses. B. Wait about 20 mins until the motor cools. Check and eliminate the cause of intervention. <p>NOTE: If the issue is repeated, the motor is short circuiting.</p>
The motor does not start, but makes noise.	<ul style="list-style-type: none"> A. Ensure that the mains voltage is the same as the value on the plate. B. Look for possible blockages in the pump or motor. C. Check for blockage in the shaft. D. Check capacitor condition. 	<ul style="list-style-type: none"> A. Remove any blockages. B. Use the tool provided to release shaft.  C. Replace the capacitor.
The motor turns with difficulty.	<ul style="list-style-type: none"> A. Check if voltage is sufficient. B. Check whether any moving parts are scraping against fixed parts. 	<ul style="list-style-type: none"> A. Eliminate the cause of scraping.
The pump does not deliver.	<ul style="list-style-type: none"> A. Pump has been incorrectly primed. B. Diameter of intake pipe is insufficient. C. Clogged NRV valve or filter. 	<ul style="list-style-type: none"> A. Fill pump with water and prime it, unscrew vent cap to release air. B. Replace the pipe with a larger diameter pipe. C. Clean the filter and NRV valve.
The pump does not prime.	<ul style="list-style-type: none"> A. Suction pipe is taking in air. B. Downward slope of intake pipe is causing formation of air pockets. 	<ul style="list-style-type: none"> A. Eliminate the phenomenon, check if connections and suction pipe are airtight, then repeat the priming operation. B. Correct inclination of intake pipe.
The pump supplies insufficient flow.	<ul style="list-style-type: none"> A. The suction pipe is clogged. B. The impeller is worn or blocked. C. The diameter of the intake pipe is insufficient. 	<ul style="list-style-type: none"> A. Clean the suction pipe. B. Remove the obstructions or replace the worn parts. C. Replace the pipe with a larger diameter pipe.
The pump vibrates and operates noisily.	<ul style="list-style-type: none"> A. Check that pump and pipes are firmly anchored. B. If there is cavitation in the pump, the amount for water is higher than pump is able to pump. C. The pump is running above its plate characteristics. 	<ul style="list-style-type: none"> A. Fix the loose parts carefully. B. Reduce the intake height or check for load losses. C. It may be useful to limit the flow at delivery.

LIMITED WARRANTY

When purchased from an authorized Hawthorne dealer, this product is covered by a **LIMITED WARRANTY available at hawthornegc.com/warranties**. You can also obtain the Terms of Sale and Limited Warranty by calling Hawthorne toll free at 1-888-478-6544 or writing Hawthorne at: Hawthorne Hydroponics LLC, 3204 NW 38th Circle, Vancouver, WA 98660, Attn: Customer Service.

PRODUCT WARRANTY SCHEDULE

PRODUCT	WARRANTY PERIOD
Multistage Pump - 727180 924 GPH	2 year limited warranty
Multistage Pump - 727182 1416 GPH	2 year limited warranty
Jet Pump - 727188 708 GPH	2 year limited warranty
Jet Pump - 727190 900 GPH	2 year limited warranty

