onga

Horizontal Multistage Centrifugal Pumps

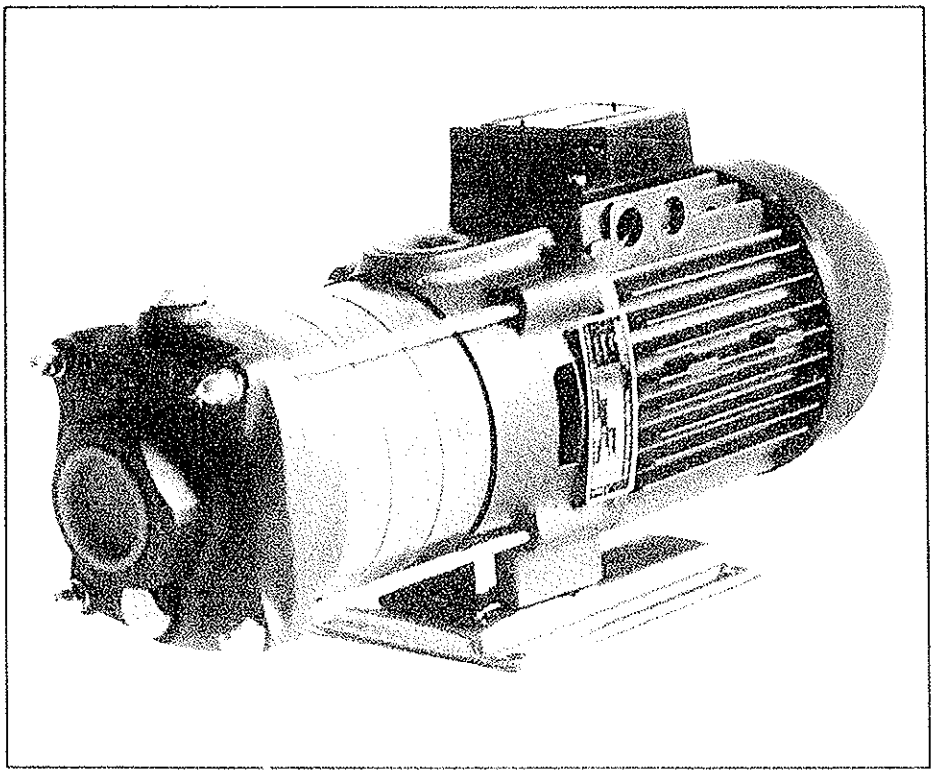
onga

PUMPS

Owner's Manual

Models SSH55 & SSH75

Should the installer or owner be unfamiliar with the correct installation or operation of this type of equipment you should contact the distributor/manufacturer for the correct advice before proceeding with the installation or operation of the product.



Relax - you've bought an onga ...

Congratulations on your decision to purchase an Onga product. Onga is one of the best known companies in its field, with a proud local and international reputation.

In fact, wherever people need to move water from one point to another - whether in industry, horticulture, agriculture or in and around the home - Onga is a byword for reliability, value for money and technological innovation. So why does Onga lead its field? Here are a few simple reasons ...

1. **Continual Product Improvement**
   Onga employ the best engineers both in Australia and around the world to develop new and better ways to pump and handle water.

2. **Dedication to Quality**
   There is only one standard that we at Onga set ourselves for both product quality and the quality of our service. That standard is excellence ... to have no-one better than us at what we do ... nothing short of that is acceptable.

3. **A Fair Price**
   Onga Pumps are neither the cheapest nor the most expensive in their field. Our products do, on the other hand, always represent very good value for money - they always have and they always will.

4. **Our Team of Dealers**
   We believe Onga's hand picked authorised dealer network - throughout Australia and worldwide - are second to none. We invest a huge sum training them and supporting them. They are your link to us, and we value their expertise and trust.

OPERATING INSTRUCTIONS
Models SSH55 and SSH75

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Warning: For personal safety please read this manual carefully before using the pump. Failure to follow these directions may be dangerous and may void your warranty.

1. Applications

Onga's model SSH (Stainless Steel Horizontal) Multistage Pumps are of a non self priming type suitable for pumping clean water.

Main applications include:

- Pressure boosting, e.g. in small dwellings where the pressure of the local supply is insufficient.
- Water transfer, e.g. from a water tank on the ground up into a roof tank.

The pumps' compact design makes them ideally suited for installation in existing systems.

2. Operating Ranges

- Maximum inlet pressure 6 bars
- Maximum operating pressure at the following liquid temperatures:
  - 0-40°C 10 bars
  - 41-90°C 6 bars
- Maximum liquid temperature 90°C
- Maximum ambient temperature 55°C

2. Operating Ranges (cont.)

The voltage (V) and the frequency (Hz) marked on the motor nameplate should be checked before installation to ensure that the motor is suitable for the electrical supply on which it will be used.

3. Installation

Pump Location

The suction pipework must be as short as possible and the suction head must be as small as possible.

The pump should be located in a well ventilated position. It may be located outdoors, but it should be sheltered from weather, e.g. by means of a roof or similar protection. If the air surrounding the pump is warm and moist, condensation may occur on the pump casing which could cause damage to the foundations. We recommend that a drain away drip tray be installed under the pump. The pump should be positioned as shown in **Fig. 1.**

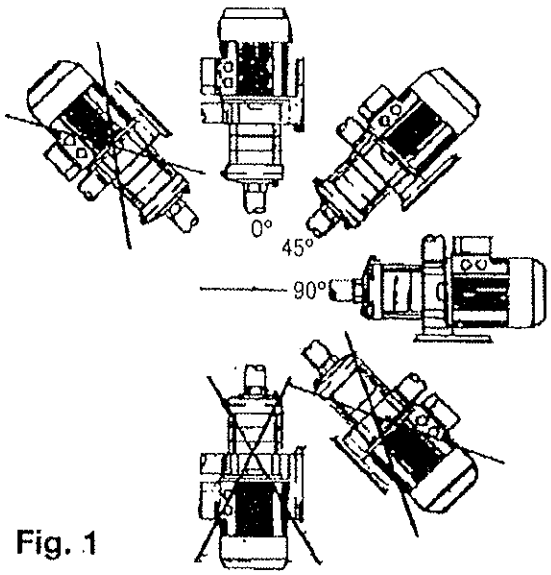


Fig. 1

Position of Terminal Box

To ensure easy access to the electrical connections, make sure the terminal box is in the position shown in **Fig. 2** before the pump is installed.

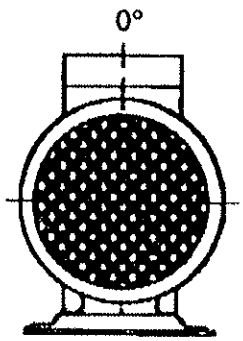


Fig. 2

Pipework

The pump is suitable for installing within a pipeline system. Please ensure that **the pump is not stressed or strained by the system pipework.** Fluctuations in water temperature could cause pipework stress leading to joint fatigue.

Suction and Discharge Pipes

Up to 10 metres in length, the suction pipe should be the same diameter as the inlet port of the pump.

Pressure loss calculations should be made with installation of longer suction pipework.

When pumping from a well/bore, the suction inlet should be inclined away from the pump to avoid air locks and be fitted with a well designed foot valve.

Foot valves should always be fitted to all installations with suction lifts greater than 0.4-0.5 metres. It is recommended that a plastic bucket or similar container be placed under the foot valve to prevent sand contamination of the valve, thereby reducing the risk of loss of prime from boreholes. With normal oxygenated water the pump should be able to operate with an 8 m NPSHR at sea level without cavitating. With a larger oxygen content and/or altitude, the NPSHR will be reduced.

If the pump is to be used in a booster system, a non-return valve should be fitted on the suction side of the pump. The additional installation of isolation valves on either side of the pump will simplify dismantling of the system for service overhaul.

4. Electrical Connections

The electric motor should be connected to the power supply as shown in the diagram under the lid of the terminal box. All wiring should be carried out by qualified electricians in accordance with local regulations. Please ensure the use of approved watertight screwed cable entry for the cable to the terminal box.

Motor Protection

All single phase motors incorporate a continuously rated capacitor and can be connected directly to the power supply. It is recommended that an appropriately sized circuit breaker be installed.

5. Starting

Do not start the pump until it has been filled with water and vented.

Booster systems and systems where the water level on the suction side is above the pump inlet (flooded suction):

Close the isolation valves and remove the priming plug. Gradually open the valve on the suction side and keep it open until a steady stream of water runs out of the priming port. Close the valve, replace the priming plug and tighten securely. Completely open the isolation valve on the suction side. Start the pump and gradually open the isolation valve on the discharge side until it is completely open.

Pumping from tanks, well/bores etc. where the water level on the suction side is below the pump inlet:

The suction pipe must be fitted with a foot valve. Remove the priming plug and fill the pump and suction pipe with water through the priming port (use a funnel). Make sure that the suction pipe and pump are vented and completely filled with water. Replace the priming plug and tighten securely. The pump can now be started. Immediately, but slowly, open the isolating valve on the discharge side until fully opened.

6. Operation and Maintenance

During normal operation the unit is virtually maintenance free. If the pump has been used for unclean or aggressive fluids, flush the pump with clean water immediatley after use.

Frost Protection

Pumps which are not being used during periods of frost should be drained to avoid damage. Remove the priming and drain plugs and allow the pump to fully drain. Do not replace the plugs until the pump is to be used again.

Faults and Remedies

FAULT	POSSIBLE CAUSE	POSSIBLE REMEDY
Pump does not operate and motor does not run.	1) No electricity. 2) Not plugged in correctly. 3) Circuit breaker activated.	1) Verify presence of electricity. 2) Ensure pump is connected properly. 3) Reset circuit breakers.
Pump hums and the thermal relays cut in and out.	1) Pump is clogged by debris. 2) Capacitor is defective.	1) Clean suction pipe and foot valve/strainer. Clean the pump by flushing with water. Remove the priming and drain plugs. If the pump cannot start after several flushings, it must be dismantled and cleaned. 2) Replace the capacitor.
Pump operates but delivers no water.	1) Pump is not filled with water. 2) Suction head is too high. 3) Foot valve/strainer is not submerged enough. 4) Suction pipe is taking in air. 5) Suction pipe/strainer or non-return valves are clogged with debris. 6) Pump is clogged with debris.	1) Fill the pump with water (see "Starting"). 2) Reduce the suction head. 3) Make the suction pipe longer (max. 8 metres). 4) Check the suction pipe and joints for air leaks. 5) Clean the suction pipe/strainer or non-return valve. 6) Clean the pump of debris.
Reduced performance.	1) Suction head is too high. 2) Foot valve/strainer only partially submerged. 3) Pump shaft seal is worn or damaged. 4) Pump is partially blocked with debris. 5) Pressure switch settings are incorrectly set or faulty.	1) Reduce suction head. 2) Lengthen suction pipe. 3) Replace defective parts. 4) Remove debris and flush pump with clean water. 5) Check and adjust pressure switch and/or replace faulty parts.

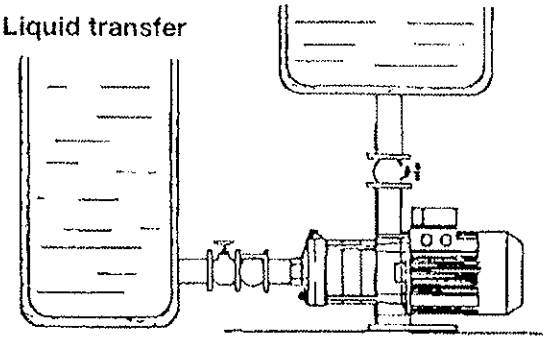
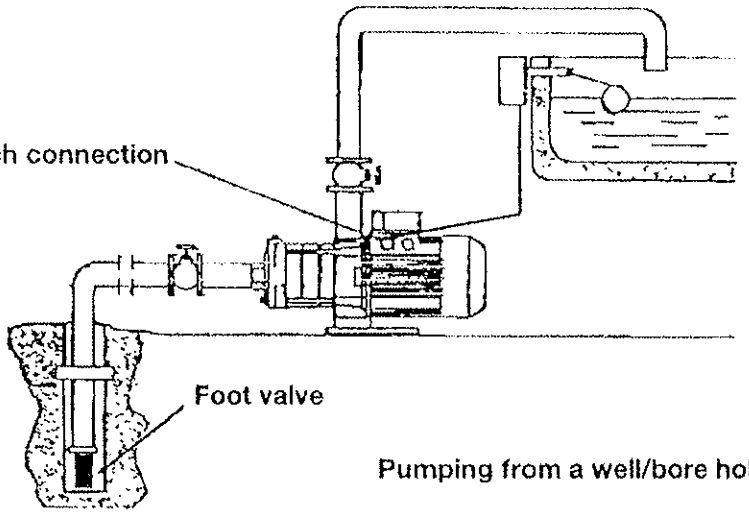
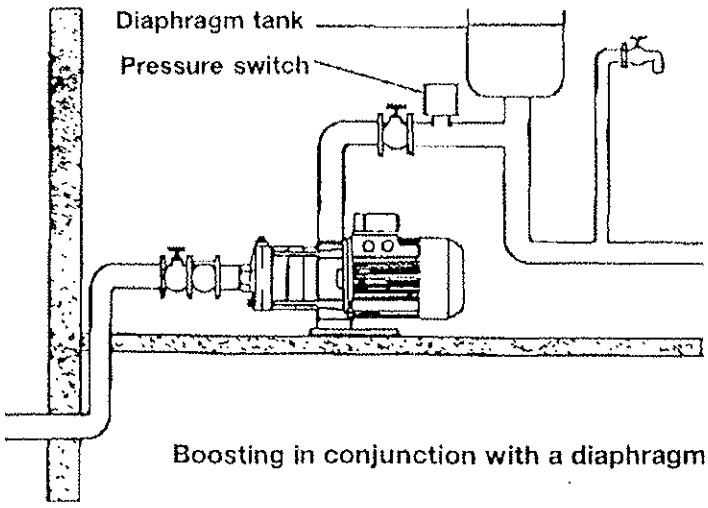


Fig. 3A



Pumping from a well/bore hole

Fig. 3B



Boosting in conjunction with a diaphragm tank

Fig. 3C

8. Spare Parts List (See Fig. 4)

	Description	SSH55	SSH75
2	Discharge Chamber (F71)	N731S4140	N731S4140
6	Suction Chamber	N731S3990	N731S3990
4	Intermediate Chamber with Diffuser & guide ring	N784S1760	N784S1760
26	Tie Bolts	N121M2160	N121M2180
49	Impeller	N784M0750	N784M0750
62	Stop Ring	N121M1060	N121M1060
64	Spacer Intermediate 15 x 13 x 26.0	N121M2180	N121M2180
64a	Spacer 15 x 13 x 9.0	N121M1150	N121M1150
64b	Spacer 15 x 13 x 15.0	N121M1410	N121M1410
66	Washer Lock Nut	N121P1720	N121P1720
67	Lock Nut for Shaft	N121P2250	N121P2250
79	Diverting Disc	N102M0860	N102M0860
103	Mechanical Seal Fixed Face	N111M0810	N111M0810
104	Mechanical Seal Rotating Face	N111M0800	N111M0800
112	Spacer Mechanical Seal	N784M1600	N784M1600
151	Fan Cowl	N721S1090	N721S1090
156	Fan with spring	N102P0570	N102P0570
Not shown	Gasket Interconnecting	N111M0860	N111M0860
Not shown	Motor complete 0.55 kW 50 Hz 240V 1 phase	N792S0450	
Not shown	Motor complete 0.75 kW 50 Hz 240V 1 phase		N792S0460
Not shown	Gasket Capacitor Housing	N111P0580	N111P0580
Not shown	Capacitor	N171P2380	N171P2620
Not shown	O Ring for Capacitor Cover	N111P1150	N111P1150
Not shown	Capacitor Casing Base	N102P1890	N102P1890

Model and serial number of pump must be given when ordering spare parts