



☑ Proper Installation (See fig. 3)

A = Eccentric adaptor

B = Positive Lift

C = Good immersion

D = Long radius bends

E = Suction pipe diameter > = pump port diameter

F = Suction lift. Depends on pump and installation (\*)

G = Pipes must be supported and not exert stress on the pump

H = Footvalve and strainer

(\*) The suction lift is determined by liquid temperature, altitude, flow resistance and NPSH required by the pump.

Notes:

As a general rule when the suction pipe is longer than 10 metres or the suction lift is greater than 4 metres, the diameter of the suction pipe must be larger than that of the pump suction port.

☑ Improper Installation (see Fig. 3)

1 = Tight bends giving high flow resistance

2 = Insufficient immersion of suction inlet creating vortex and air in system

3 = Negative lift causing air pockets

4 = Pipe diameter < pump port diameter causing high flow resistance

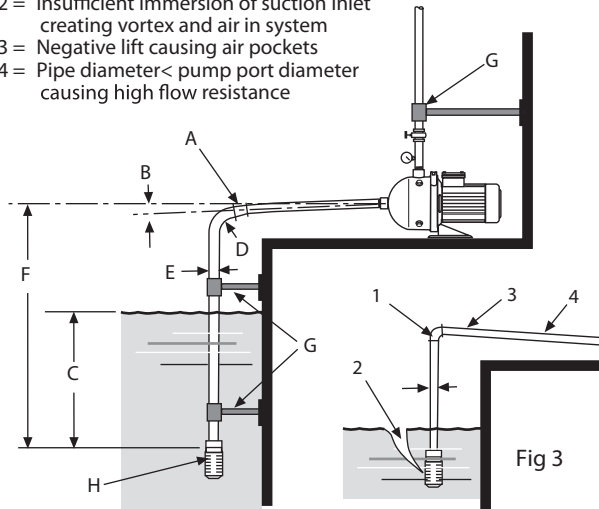


Fig 3



### TROUBLE SHOOTING

Fault	Possible Cause
Pump does not run when motor is turned on	<ul style="list-style-type: none"> <li>- Supply failure</li> <li>- Main contacts in motor starter are not making contact or motor coil is faulty</li> <li>- Control fuses have blown or are defective</li> <li>- Pump is blocked by foreign material</li> <li>- Motor failure</li> </ul>
Pump runs but no water delivered	<ul style="list-style-type: none"> <li>- Pump is not primed</li> <li>- Pump is blocked by foreign material</li> <li>- Suction or discharge blocked</li> <li>- Footvalve/checkvalve or strainer blocked</li> <li>- Suction pipe is leaking</li> <li>- Suction lift too great</li> <li>- Air in suction pipe or pump</li> </ul>
Pump capacity is not constant or is reduced	<ul style="list-style-type: none"> <li>- Pump is sucking air</li> <li>- The pump, suction pipe or discharge pipe is partly blocked</li> <li>- Inlet pressure too low</li> <li>- Wrong direction of rotation (3 phase)</li> <li>- Suction lift is too great</li> <li>- Footvalve/checkvalve or strainer partly blocked</li> </ul>
Starter overload cuts off immediately power is switched on	<ul style="list-style-type: none"> <li>- Overload setting is too low</li> <li>- Loose or faulty cable connection</li> <li>- One fuse is blown (3 phase)</li> <li>- Pump is not free to run</li> <li>- Contacts in overload are faulty</li> <li>- The motor windings are defective</li> <li>- Low voltage (especially at peak time)</li> </ul>

*As Pentair policy is one of constant improvement, we reserve the right to make specification changes without notice and without incurring liability.*

## INSTRUCTION MANUAL

FOR



# CBI and HBN Series

## HORIZONTAL MULTI-STAGE TRANSFER PUMPS

Telephone 131 786

A division of Pentair Flow Control Pacific Pty Ltd  
A.B.N. 83 000 922 690

### 1. HANDLING

Before installation, these installation and operating instructions must be read carefully.

The pump must be lifted and handled with care.

### 2. APPLICATIONS

**CBI:** Designed to handle clean, thin, non-aggressive water and non-explosive liquids, no solid particles.

**HBN:** Designed to handle clean, thin and non-explosive liquids without particles.

Also suitable for light industrial applications.

### 3. WORKING LIMITS

**CBI —**

- Max. operating pressure: 0°C to + 40°C (980 kPa), +41°C to +90°C (588 kPa).
- Liquid temperature range: 0°C to +90°C.
- Max. ambient temperature: +50°C.
- Min. inlet pressure: According to the NPSH curve plus a safety margin of 0.5m.
- Max. inlet pressure: Limited by the max. operating pressure.

**HBN —**

- Max. operating pressure 980 kPa.
- Liquid temperature range: 0°C — +110°C.
- Max. ambient temperature: +40°C.
- Min. inlet pressure: According to the NPSH curve plus a safety margin of 0.5m.
- Max. inlet pressure: Limited by the max. operating pressure.

### 4. INSTALLATION

- The pump may be installed as shown in Fig 1.

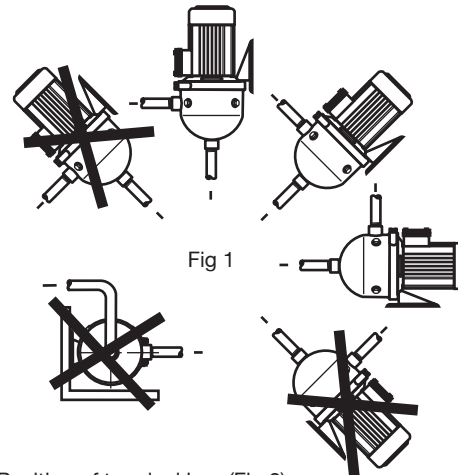


Fig 1

- Position of terminal box (Fig 2)

The terminal box can be turned to three positions before the pump is installed.

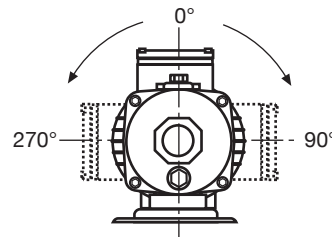


Fig 2

### 5. ELECTRICAL CONNECTION

- To connect (3 phase only) proceed as shown on the inside of the terminal box cover.
- Check the direction of rotation for 3 phase units. (anticlockwise when viewed from motor fan end)

### 5. OTHER (Fig 4)

- **Priming**

Before start-up, fill the pump body and suction pipe through the priming plug, bleeding off all the air.

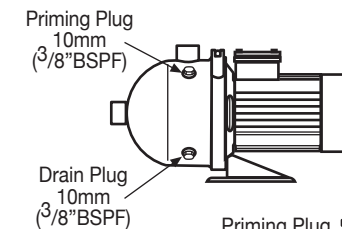
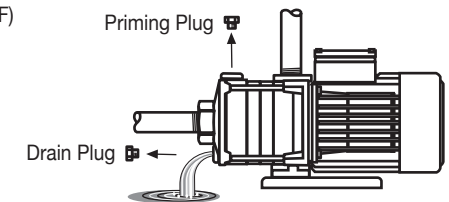


Fig. 4



- **Maintenance**

No routine maintenance is required.

- **Frost Protection**

Pumps which are not being used during periods of frost must be drained to avoid damage.

Remove the priming and drain plugs to allow the pump to drain. Do not replace the plugs until the pump body is completely drained