

# *Instruction Manual*

## Model 10 Water Jet Pump



This page has been intentionally left blank.

# Contents

Section	Page
1 Technical Data .....	1
2 Construction .....	2
3 Installation notes .....	3

For return of equipment, complete the HS Forms at the end of this manual.

# Illustrations

Figure	Page
1 Model 10 Water Jet Pump .....	3

# Associated publications

Publication title	Publication number
Vacuum pump and vacuum system safety	P400-40-100

# Contents

# 1 Technical Data

## Model 10

Operating water pressure (optimum)	1.4 bar (20 lbf in <sup>-2</sup> )
Operating water temperature	15 °C
Operating water pressure (recommended)	1 to 2 bar (15 to 30 lbf in <sup>-2</sup> )
* Pumping speed (air)	3.9 l min <sup>-1</sup>
Ultimate vacuum	16 to 18 mbar
Water consumption	625 l h <sup>-1</sup>
Connections	
Water in	12 mm bore tubing
Drain	3/8 in (9.5 mm) bore tubing
Vacuum	7 mm bore tubing
Weight	34 g

*Note:* \*Performance is limited only by the temperature and pressure of the water supply. At a water pressure of 1.4 bar (20 lbf in<sup>-2</sup>) and a temperature of 15 °C, the pumping speed is approximately 3.9 l min<sup>-1</sup>, and the ultimate vacuum 17 mbar. Water consumption is approximately 625 l h<sup>-1</sup>.

Product Description	Order number
Model 10 water jet pump	C410-01-000

Spares	Order number
Viton ball/pin assembly for non-return valve	C039-01-010

The Model 10 pump operates from standard water supplies to produce rough vacuum for application in the distillation, filtration aeration fields and general duties not requiring higher performance mechanical vacuum pumps.

## 2 Construction

The pump is constructed from a plastic material (PPS) which has high corrosion resistance properties. The material is non-flammable and is resistant to a wide range of solvents, mineral and organic acids and alkalis. It must NOT be used with the following:

- Bromine (wet)
- Butyl Amine
- Chlorosulfonic Acid
- Chlorine (dry)
- Chromic Acid Conc
- Hydrogen peroxide 30%
- Morpholine
- Nitric Acid 35% to Conc
- Sulphuric Acid 98%
- Trichlorethylene

Riffled nozzles are provided on the pump for the water and vacuum connections and an internal non-return valve prevents flooding of the vacuum system in the event of fluctuating water pressure.

### 3 Installation notes

1. Connection to the water supply should be made using 12 mm bore tubing and to the vacuum system using 7 mm bore vacuum tubing. If it is desired to fit a water drain, this should be of 9.5 mm bore tubing.

*Note:* After considerable service, the tubing may stick to the nozzles and it should be removed by cutting.

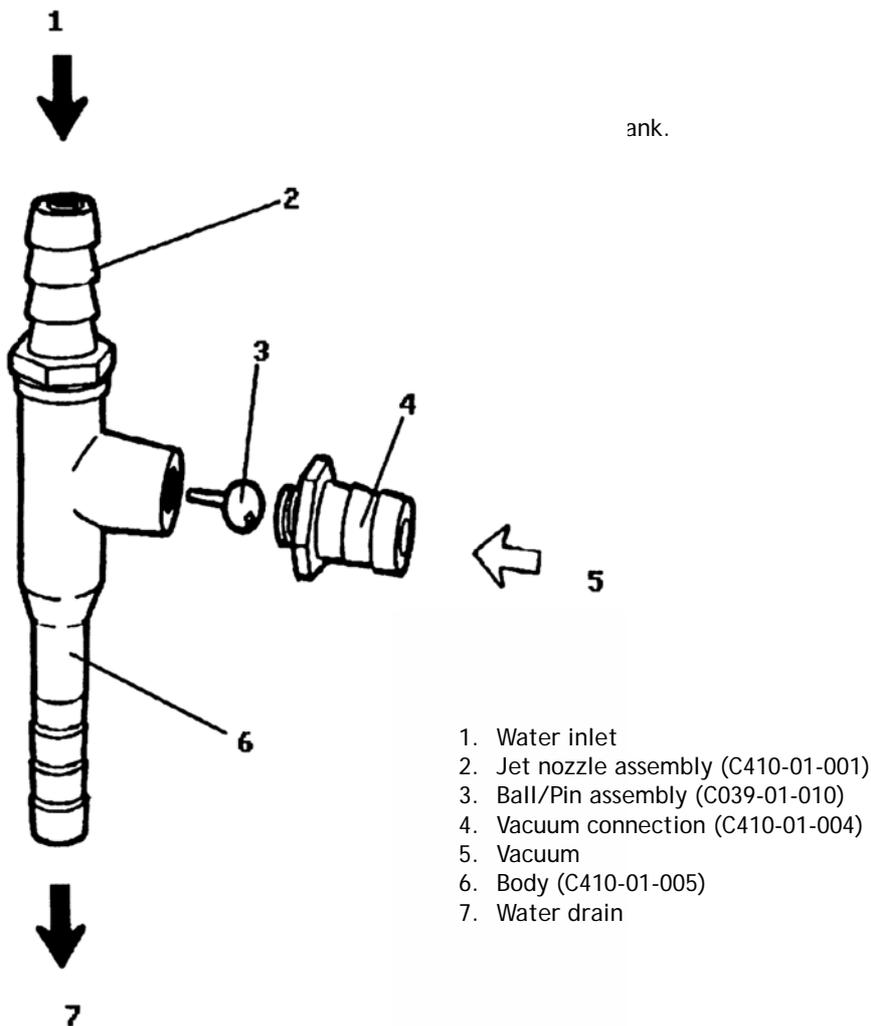
2. Should the jet nozzle assembly or the vacuum connection be removed:

- Ensure ball valve is located correctly in the vacuum arm, on re-assembly, so that the pin projects towards the centre line of the jet nozzle assembly.
- The vacuum nozzle should be carefully tightened to a torque setting not exceeding 18 lbf in (maximum) and the jet nozzle to a torque setting not exceeding 24 lbf in (maximum).

#### CAUTION

The ball valve is manufactured from an elastomer which is liable to swell in the presence of certain chemical (particularly ketones and esters). Should the pump cease to operate when such chemicals are present, then the valve is suspect and should be inspected. Access to the valve is obtained by unscrewing the vacuum nozzle. Renew the valve ball if swollen or deteriorated.

Figure 1 - Model 10 Water Jet Pump



This page has been intentionally left blank.