



# GXS WATER QUICK CONNECTS

## INSTRUCTION MANUAL

Publication Number: A506-34-880

Issue: A

Original Instructions

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You must use the GXS water quick connects as described in this manual. Read this manual before you install, operate and maintain the GXS water quick connects.

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# Introduction

## Scope and definitions

This manual provides installation, operation and maintenance instructions for the Edwards GXS dry pumping system water quick connects (abbreviated water quick connects in the remainder of this manual). Use the water quick connects as specified in this manual. Use this manual in conjunction with the GXS pump manual.

Read this manual before you install the water quick connects. Important safety information is highlighted as WARNING and CAUTION instructions; you must obey these instructions. The use of WARNINGS and CAUTIONS is defined below.



### **WARNING:**

**Warnings are given where failure to observe the instruction could result in injury or death to people.**



### **CAUTION:**

**Cautions are given where failure to observe the instruction could result in damage to the equipment, associated equipment and process.**

Throughout this manual, page, figure and table numbers are sequential.

The units used throughout this manual conform to the SI international system of units of measurement; US equivalent units of measurement are also given.

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## Product description

The water quick connects are designed to be externally fitted to an Edwards GXS dry pumping system.

When fitted, the water quick connects accessory provide a quick connection or disconnection of customer water supply/return lines to the water inlet/outlet connections on the pumps for operation or maintenance. These double shut-off couplings provide straight orientation for the water quick connects without the loss of water. All water quick connects kits are offered in stainless steel.

This manual provides instruction for the kit shown in [Quick connect kit](#) on page 10.

**Table 1** Quick connect kit

<b>Manufacturer</b>	<b>Quick connect kit description</b>	<b>Material</b>
Eagle	Straight 1/2 inch BSPP	Stainless steel

It is not recommended to interchange couplers and nipples from different manufacturers or different materials.

The water quick connects should be fitted directly to the GXS system if the water flow switch (supplied separately) and/or water flow monitor (supplied separately) and/or water flow control valve and/or advanced AUC valve are not fitted. If any accessory is fitted, the water quick connects should be mounted to the accessory outlet.

## Technical data

### Quick connect parameters

Series	Eagle	SV series
Connection type	Eagle	Female BSPP

### Flow pressure parameters

Media	Water, DI water
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**Table 2** Flow pressure parameters

		1/2 inch BSPP stainless steel
Flow pressure parameters	Maximum working pressure	3625 PSI (250 bar)
	Minimum burst pressure	>3625 PSI (>250 bar)
	Flow rating	12 GPM (45.42 l/min)

### Operating characteristics

**Table 3** Operating characteristics

Temperature range	Eagle
Operating range	+5 °C to +40 °C (+41 °F to 104 °F)
Storage	-30 °C to + 70 °C (-22 °F to +158 °F)
Maximum relative humidity	90% RH

### Performance requirements

Maximum water supply pressure	6.9 barg (100 psig)
Recommended water supply pressure	2.1 to 4.1 barg (30 to 60 psig)
Water supply stability	±0.69 bar (10 psi), must remain within minimum/maximum values
Maximum particle size	0.05 mm <sup>2</sup>

### Fitting connectors

**Table 4** Fitting connectors

Eagle quick connects coupling size and end fitting size	1/2 inch 1/2 inch BSPP
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## Fitting dimensions

Table 5 Fitting dimensions

Overall occupied space	Height (mm)	Width (mm)	Depth (mm)
Water quick connects 1/2 inch BSPP straight	44	44	91.5

## Materials of construction

All the wetted materials including couplers, nipples and fittings are 304 stainless steel. O-rings are EPDM.

All threaded joints are to be sealed with Loctite® 577 (not supplied).

# Installation

## Safety



### WARNING:

Obey the safety instructions given below and take note of appropriate precautions. Warnings are given where failure to observe the instruction could result in injury or death to people.

- A suitably trained and supervised technician must install the water quick connects.
- Disconnect the dry pumping system and the other components in the process system from the electrical supply so that they cannot be operated accidentally. Lockout all components in the pumping system to prevent accidental start-up.
- If the GXS system is operating, shut it down and allow it cool to a safe temperature before you start installation.
- Make sure that the water system is not in an overpressure state by allowing the pump system to cool down with the water return port connected to the site water return line.
- Make sure that you connect, disconnect and tighten all connection components correctly.
- Obey all national and local rules and safety regulations when you install the water quick connects kit.

## Unpack and inspect

Remove all packing materials and protective covers and inspect the water quick connects. If the water quick connects are damaged, notify the supplier and the carrier in writing within three days; state the item number of the water quick connects together with your order number, serial number (if applicable) and your supplier's invoice number. Retain all packing materials for inspection. Do not use the water quick connects if they are damaged.

If the water quick connects are not to be used immediately, refit any protective packaging and store the water quick connects in suitable conditions, as described in *Storage* on page 17.

Check that all items have been received according to *Straight 1/2 Inch BSPP parts list* on page 13. If any items are missing, notify the supplier in writing within three days.

**Table 6** Straight 1/2 Inch BSPP parts list

Quantity	Description	Check (✓)
2	Nipple 1/2 inch BSPP	<input type="checkbox"/>
2	Nipple 1/2 inch dust cap	<input type="checkbox"/>
2	Coupler 1/2 inch BSPP	<input type="checkbox"/>
2	Coupler 1/2 inch dust plug	<input type="checkbox"/>

## Install the water quick connects

Take note of the following points before starting installation:

- Water hose location must eliminate slips, trips, or entrapment. All water hose routes must be clearly marked.
- Leak check the water quick connects kit after the assembly is completed.
- Perform the following steps during installation.
- Before performing any installation, it is recommended that you follow the lockout/tagout procedures according to the Control of Hazardous Energy (lockout/tagout) in Volume 29 of the code of Federal Regulation (29CFR) section 1910.147 for the customer supply.
- Always ensure that the power and water supply to the pumping system is isolated.

### Straight 1/2 inch quick connect installation

See [Figure 1](#) on page 15.

1. Remove all fitting caps prior to installation.
2. Apply Loctite® 577 (not supplied) to all male threads prior to installation.

#### Water return side

1. Connect threaded end of coupler (1) to the water return port on the pumping system.
2. Connect threaded end of nipple (2) to the customer water return line.
3. Connect nipple to coupler.

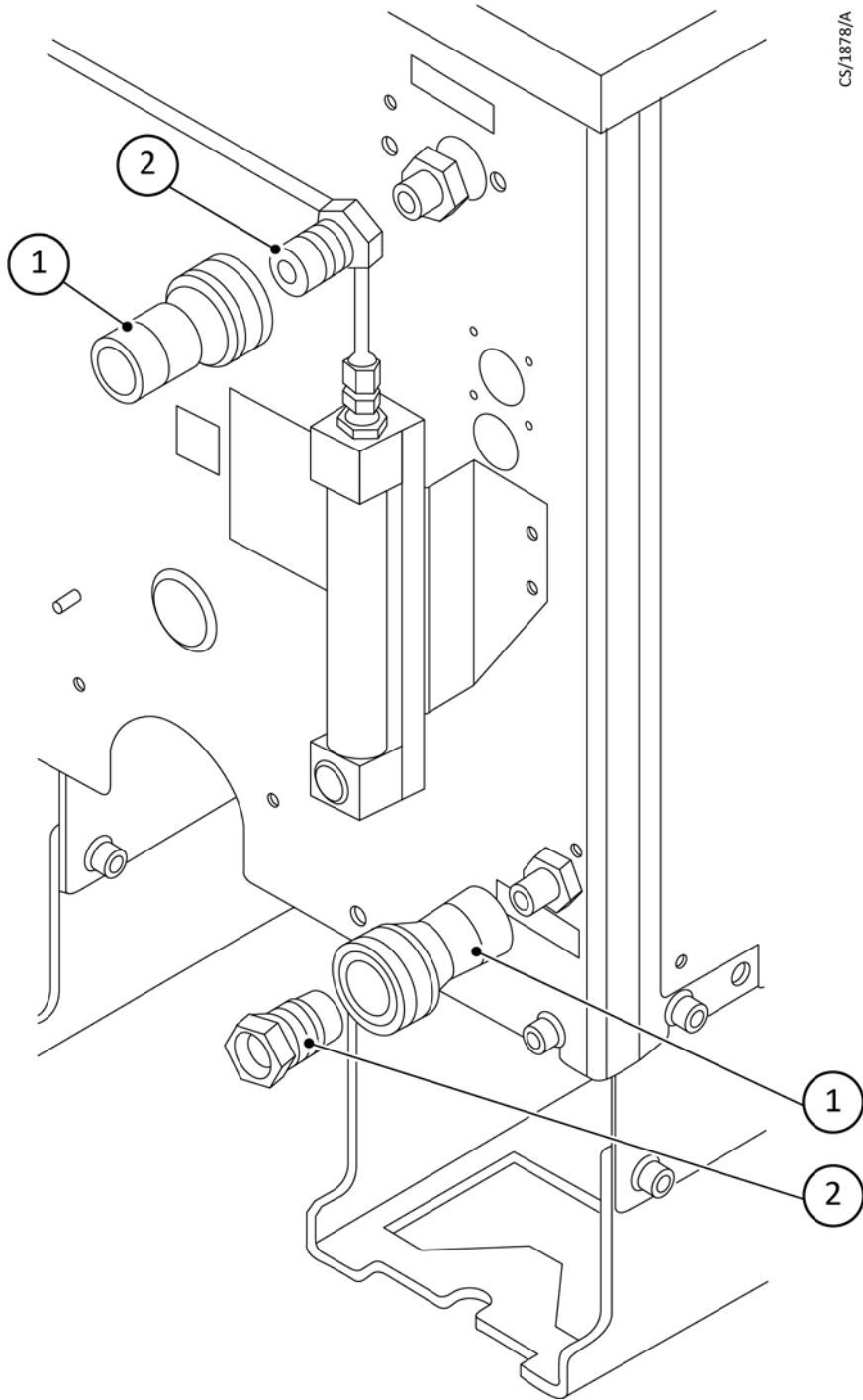
#### Water supply side

1. Connect threaded end of nipple (2) to the water supply port on the pumping system.
2. Connect threaded end of coupler (1) to the customer water supply line.
3. Connect coupler to nipple.

### Leak test quick connect components

1. Apply water pressure to the water quick connects prior to pump start up.
2. Restore pump power.

**Figure 1** Straight 1/2 inch quick connect



CS/1878/A

1. Coupler 1/2 inch BSPP
2. Nipple 1/2 inch BSPP

## Maintenance

The components provided with the kit require no maintenance.

# Storage and disposal

## Storage

If the water quick connects are not used immediately, refit any protective packaging and store in cool, dry conditions until required. When required for use, install the kit as described in [Install the water quick connects](#) on page 14.

## Disposal

Dispose of the connection kit and any components safely in accordance with all local and national safety and environmental requirements.

# Appendix

## Correct use of tube fittings

### Note:

*We recommend that you use a second spanner to hold the connector in position when you connect or disconnect a tube fitting.*

You must know how to correctly fit and tighten tube fittings in order to prevent water leaks; use the procedures in the following sections.

### Fit a tube fitting

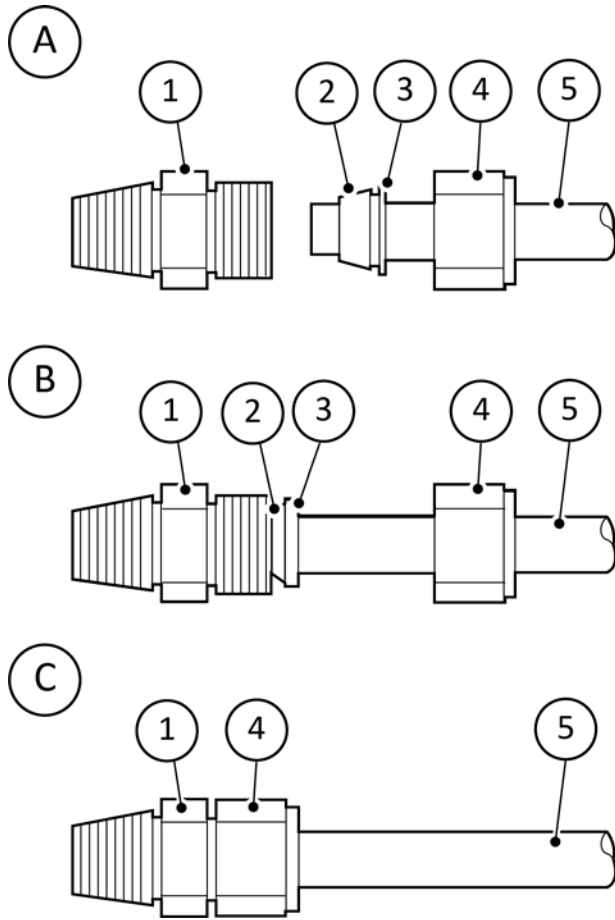
1. Refer to [Fit a tube fitting](#) on page 19 detail A. Undo and remove the nut (4) from the tube fitting (1). Ensure that the front (tapered) ferrule (2) and the rear ferrule (3) are correctly oriented as shown in detail A, then loosely refit the nut (4) to the tube fitting (1).
2. Refer to detail B. Insert the tube (5) through the nut (4) and into the tube fitting (1). Ensure that the tube rests firmly on the shoulder inside the fitting, and that the nut (4) is finger tight.
3. Tighten the nut (4) until you cannot rotate the tube (5). If you cannot turn the tube because of how it is installed, tighten the nut (4) by 1/8 th of a turn.
4. Refer to detail C. Mark the nut (4) at the six o'clock position.
5. Hold the tube fitting (1) steady, then turn the nut (4) by 1/4 turn (to the nine o'clock position) to fully tighten the connection.

### Reconnect a tube fitting

You can disconnect and reconnect a tube fitting many times and still obtain a correct leak-proof seal. Refer to [Retighten a tube fitting](#) on page 20 detail A, which shows a tube fitting after you have disconnected it. Use the following procedure to reconnect it:

1. Refer to detail B. Insert the tube (5) with the swaged ferrules (2, 3) into the tube fitting (1), until the front ferrule (2) is fully in the body of the fitting.
2. Refer to detail C. Tighten the nut (4) by hand.
3. Use a wrench or spanner to turn the nut (4) to its original position (you will feel an increase in resistance when the nut is in its original position), then tighten the nut slightly.

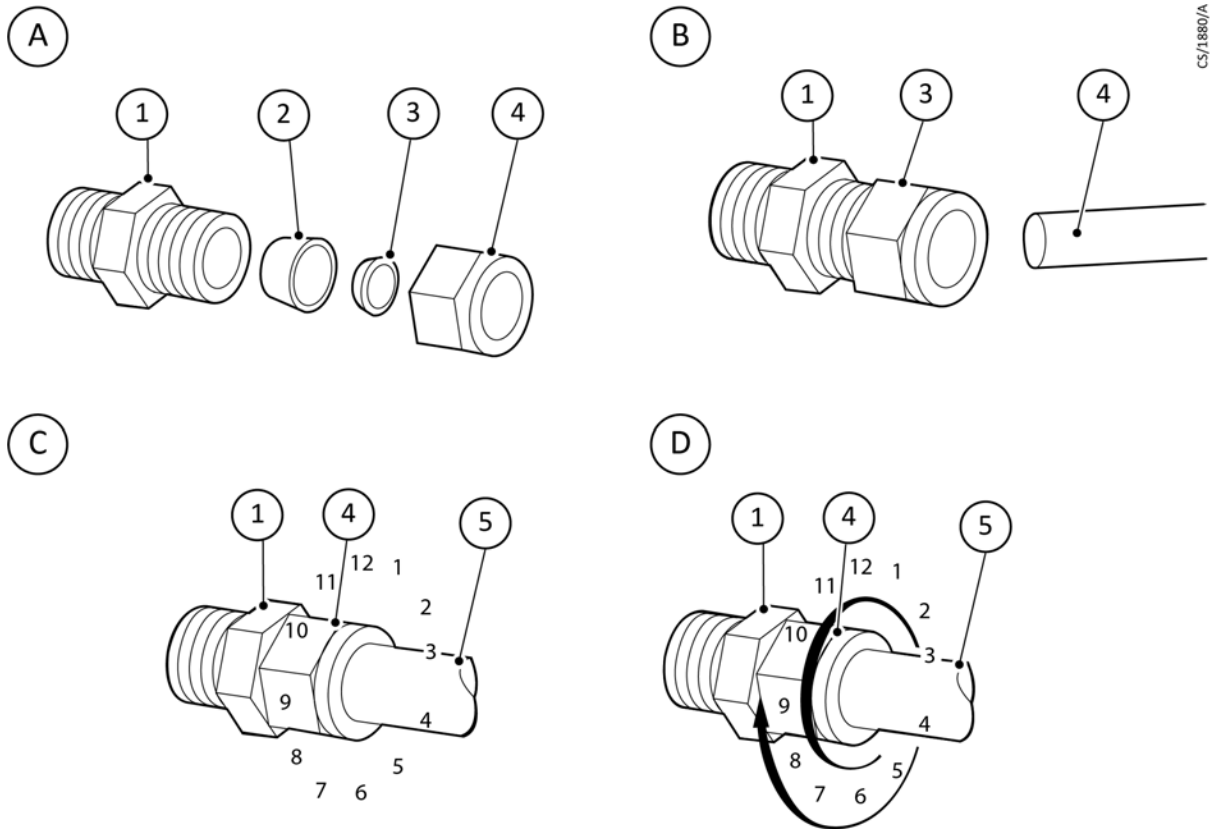
Figure 2 Fit a tube fitting



CS/1879/A

1. Tube fitting
2. Front ferrule (tapered)
3. Rear ferrule
4. Tube fitting
5. Nut

**Figure 3** Retighten a tube fitting



CS/1880/A

- |                            |         |
|----------------------------|---------|
| 1. Tube fitting            | 4. Nut  |
| 2. Front ferrule (tapered) | 5. Tube |
| 3. Rear ferrule            |         |

## Return the equipment or components for service

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components - Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components - Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs.

Download the latest documents from [www.edwardsvacuum.com/HSForms/](http://www.edwardsvacuum.com/HSForms/), follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to Edwards.

**Note:** *If we do not receive a completed HS2 form, we will not accept the return of the equipment.*

