

GF60

Glycol Make-up Unit

Table of Contents

1	Introduction and Safety.....	2
1.1	Introduction.....	2
1.2	Safety.....	2
1.2.1	Safety terminology and symbols.....	2
1.2.2	User safety.....	3
1.2.3	Protecting the environment.....	4
2	Product Description.....	5
2.1	General description.....	5
2.2	Specifications.....	5
2.3	Dimensions.....	6
2.4	Parts list.....	6
3	Installation.....	7
3.1	Precautions.....	7
3.2	Wiring.....	7
3.3	Control mode box.....	8
4	Operation.....	9
4.1	Workflow of unit.....	9
4.2	Set the control panel.....	10
4.2.1	Set Current (Amp.) intensity value.....	10
4.2.2	Cut in pressure setting.....	11
4.2.3	Cut out pressure setting.....	11
4.2.4	Basic menu.....	11
4.2.5	Advance menu setting.....	12
5	Product Warranty.....	14

1 Introduction and Safety

1.1 Introduction

Purpose of this manual

The purpose of this manual is to provide necessary information for:

- Installation
- Operation
- Maintenance



CAUTION:

Read this manual carefully before installing and using the product. Improper use of the product can cause personal injury and damage to property, and may void the warranty.

NOTICE:

Save this manual for future reference, and keep it readily available at the location of the unit.

1.2 Safety



WARNING:

- The operator must be aware of safety precautions to prevent physical injury.
 - Operating, installing, or maintaining the unit in any way that is not covered in this manual could cause death, serious personal injury, or damage to the equipment. This includes any modification to the equipment or use of parts not provided by Xylem. If there is a question regarding the intended use of the equipment, please contact a Xylem representative before proceeding.
 - Do not change the service application without the approval of an authorized Xylem representative.
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CAUTION:

You must observe the instructions contained in this manual. Failure to do so could result in physical injury, damage, or delays.

1.2.1 Safety terminology and symbols

About safety messages

It is extremely important that you read, understand, and follow the safety messages and regulations carefully before handling the product. They are published to help prevent these hazards:

- Personal accidents and health problems
- Damage to the product and its surroundings
- Product malfunction

Hazard levels

Hazard level	Indication
 DANGER:	A hazardous situation which, if not avoided, will result in death or serious injury

Hazard level	Indication
 WARNING:	A hazardous situation which, if not avoided, could result in death or serious injury
 CAUTION:	A hazardous situation which, if not avoided, could result in minor or moderate injury
NOTICE:	Notices are used when there is a risk of equipment damage or decreased performance, but not personal injury.

Special symbols

Some hazard categories have specific symbols, as shown in the following table.

Electrical hazard	Magnetic fields hazard
 Electrical Hazard:	 CAUTION:

1.2.2 User safety

General safety rules

These safety rules apply:

- Always keep the work area clean.
- Pay attention to the risks presented by gas and vapors in the work area.
- Avoid all electrical dangers. Pay attention to the risks of electric shock or arc flash hazards.
- Always bear in mind the risk of drowning, electrical accidents, and burn injuries.

Safety equipment

Use safety equipment according to the company regulations. Use this safety equipment within the work area:

- Hard hat
- Safety goggles, preferably with side shields
- Protective shoes
- Protective gloves
- Gas mask
- Hearing protection
- First-aid kit
- Safety devices

NOTICE:

Never operate a unit unless safety devices are installed. Also see specific information about safety devices in other chapters of this manual.

Electrical connections

Electrical connections must be made by certified electricians in compliance with all international, national, state, and local regulations. For more information about requirements, see sections dealing specifically with electrical connections.

Precautions before work

Observe these safety precautions before you work with the product or are in connection with the product:

- Provide a suitable barrier around the work area, for example, a guard rail.
- Make sure that all safety guards are in place and secure.
- Make sure that you have a clear path of retreat.
- Make sure that the product cannot roll or fall over and injure people or damage property.
- Make sure that the lifting equipment is in good condition.
- Use a lifting harness, a safety line, and a breathing device as required.
- Allow all system and pump components to cool before you handle them.
- Make sure that the product has been thoroughly cleaned.
- Disconnect and lock out power before you service the pump.
- Check the explosion risk before you weld or use electric hand tools.

1.2.2.1 Wash the skin and eyes

Follow these procedures for chemicals or hazardous fluids that have come into contact with your eyes or your skin:

Condition	Action
Chemicals or hazardous fluids in eyes	1. Hold your eyelids apart forcibly with your fingers. 2. Rinse the eyes with eyewash or running water for at least 15 minutes. 3. Seek medical attention.
Chemicals or hazardous fluids on skin	1. Remove contaminated clothing. 2. Wash the skin with soap and water for at least 1 minute. 3. Seek medical attention, if necessary.

1.2.3 Protecting the environment**Emissions and waste disposal**

Observe the local regulations and codes regarding:

- Reporting of emissions to the appropriate authorities
- Sorting, recycling and disposal of solid or liquid waste
- Clean-up of spills

Exceptional sites

CAUTION: Radiation Hazard

Do NOT send the product to Xylem if it has been exposed to nuclear radiation, unless Xylem has been informed and appropriate actions have been agreed upon.

Recycling guidelines

Always follow local laws and regulations regarding recycling.

2 Product Description

2.1 General description

The Bell & Gossett Glycol Make-up Units (GMU) are designed to feed and pressurize closed hydronic heating or cooling systems. The engineered packages are designed to make sure critical minimum pressure levels are maintained and comes with everything required for easy installation. The automated system operates as needed to add water or water-glycol solution to a closed loop heating, chilled water, snowmelt, or radiant heat systems.



WARNING:

This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov.

2.2 Specifications

Maximum flow		5 gpm
Maximum liquid temperature		122°F/50°C
Maximum ambient temperature		140°F/60°C
Minimum and Maximum psi		7½ psi/70 psi
Cut in		10–45 psi
Cut out		20–70 psi
Cut in/Cut out minimum differential		7 ½ psi
Power		Standard 115 VAC outlet
Pump strainer kit	5 gpm pump	Glass filled nylon
	Fittings kit	Polypropylene
	Inline strainer, 3/8" FNPT x 3/8" FNPT, stainless steel, 40 mesh	Polypropylene + Polysulfone
Pressure reducing valve		Brass
Air vent valve		Brass
Output port		½" MNPT
Manual refill port		2"
Drain valve		1" FNPT
Digital pressure switch		Pressure setting digital display, 115 V
Accumulator tank		Nylon (1.06 quarts/1 liter)
Float switch		PVC
Storage tank		60 gallon/227 liter HDPE
Storage tank lid		HDPE
Optional		Fill valve available.

2.3 Dimensions

Dimensions are in inches (mm).

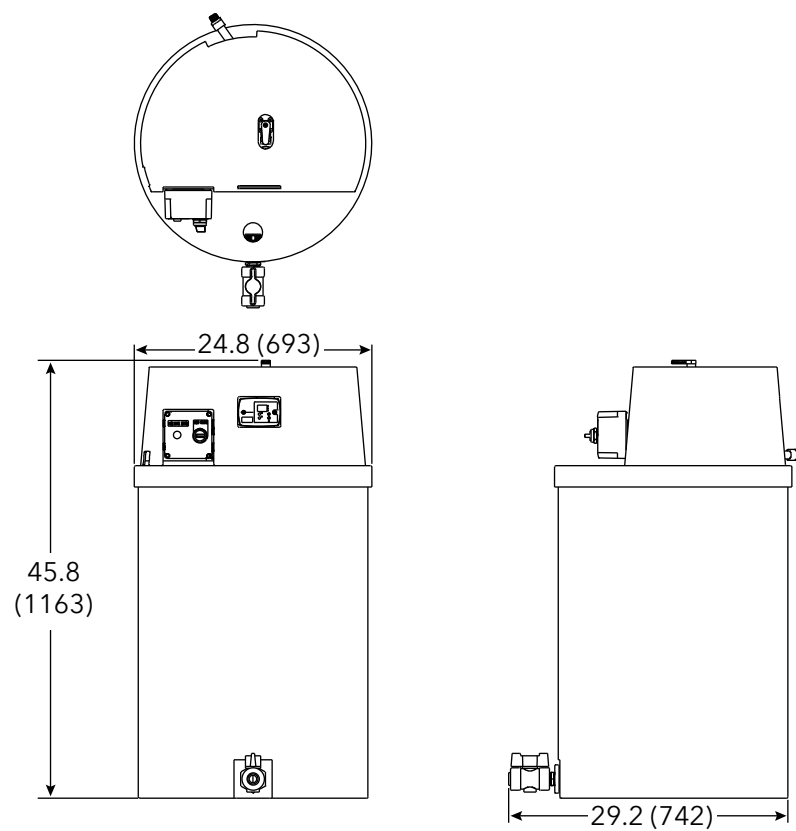
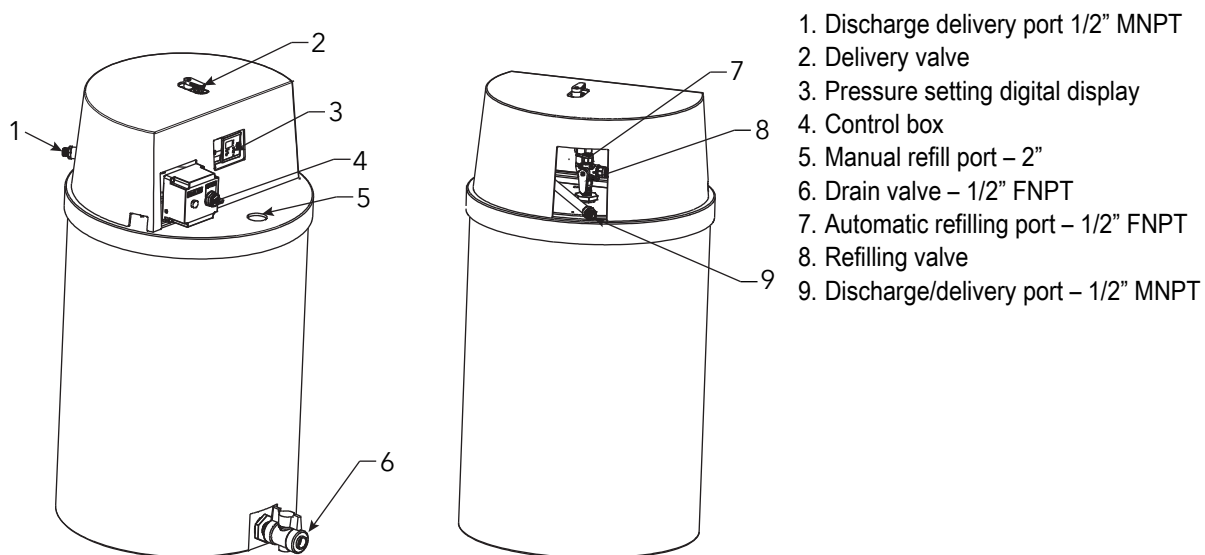


Figure 1: Unit dimensions

2.4 Parts list



3 Installation

3.1 Precautions

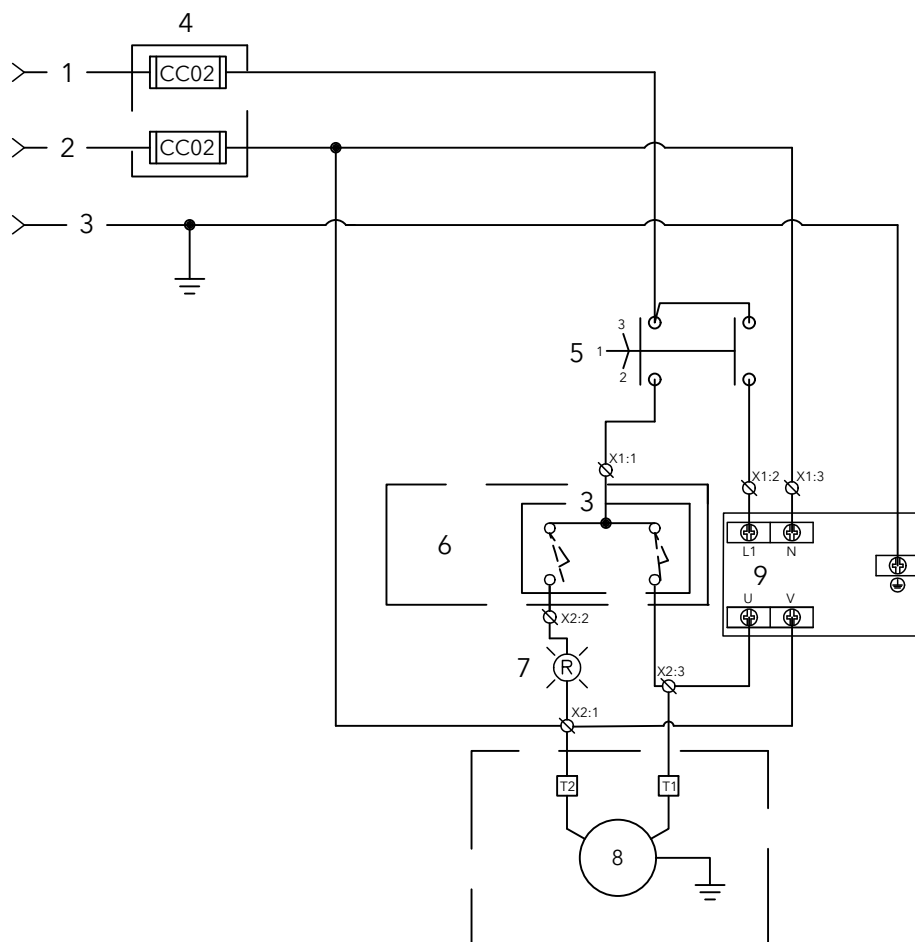
Before starting work, make sure that the safety instructions in the Introduction and Safety chapter have been read and understood.



WARNING:

A certified electrician must supervise all electrical work. Comply with all local codes and regulations.

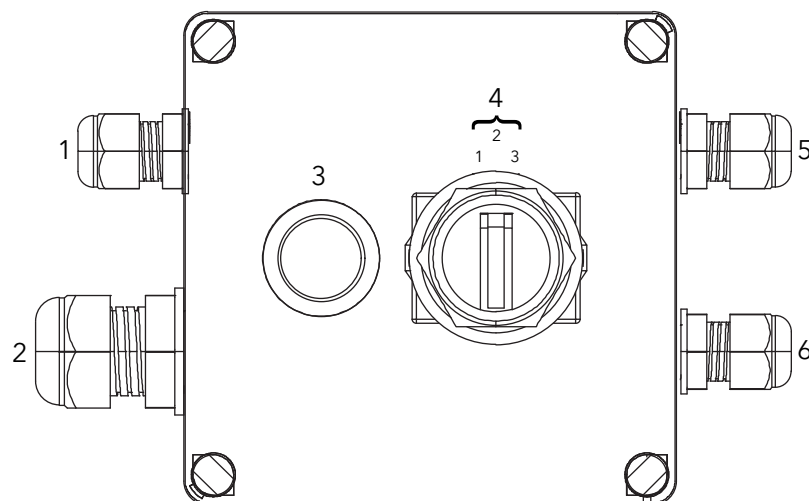
3.2 Wiring



1. Power In /Black
2. Neutral/White
3. Ground
4. Fuse block, 30 A, 600 V, Class CC type Cooper Bussmann BCP032P
5. Control box mode selection
 - 1 = Refill
 - 2 = Off
 - 3 = Auto
6. High level float switch 1NO + 1NC
7. High level lamp
8. Pump
9. Pressure setting digital display

Note: Customer supplied electrical cord

3.3 Control mode box



- 1. Float in
- 2. Power in
- 3. High level light
- 4. Control mode box
 - 1 = Refill
 - 2 = Off
 - 3 = Auto
- 5. To pump
- 6. To pressure setting digital display

4 Operation

4.1 Workflow of unit

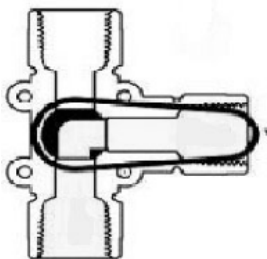
Display control panel description



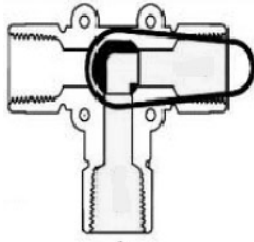
1. Delivery valve
2. Pressure setting digital display
3. Control box:
 - 1 = Refill
 - 2 = Off
 - 3 = Auto
4. Drain valve – 1/2" FNPT
5. Automatic refilling port – 1/2" FNPT
6. Refilling valve
7. Discharge/delivery port – 1/2" MNPT

Auto mode or normal operating mode

1. Keep refilling valve at this position looking from back.



2. Verify plumbing connections at the discharge/delivery port.
3. Change control box mode to Off and press .
4. Keep delivery valve at this position looking from top.



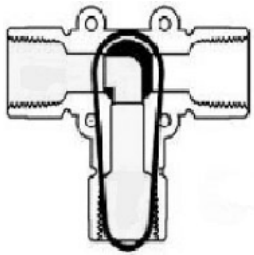
5. Adjust Cut in / cut out pressure at the control panel display.
6. Switch to mode 3 for Auto mode at control box.

Note: At Dry run condition the unit displays Off on the control panel and no operation will carry out.

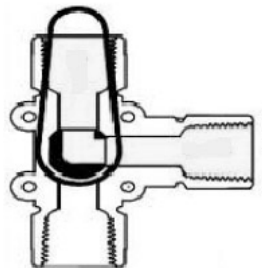
For dry run condition, switch to refilling mode and then to standard mode.

Refilling mode

1. Make sure drain valve is closed.
2. Keep delivery valve at this position looking from top.



3. Verify plumbing connections at the automatic refilling port.
4. Change control box mode to Refill and press  on the pressure setting digital display.
5. Keep refilling valve at this position looking from back.



6. Switch to mode 1 Refill mode at control box.

Note: Once the tank is full the high level switch will activate and the Red LED displays on the control box.

4.2 Set the control panel

4.2.1 Set Current (Amp.) intensity value

1. Start pressure setting digital display by pressing .
2. Press  for three seconds.
3. LED A flashes and display will be flashing
4. Set the adjusted rated current by pressing  and  buttons.
5. Press  for validation.
Factory set to 5 amps.

4.2.2 Cut in pressure setting

1. Press  for three seconds.
2. Cut in pressure value is displayed on the screen and the **START** LED turns on and flashes.
3. Set the adjusted rated current by pressing  and  buttons.
4. Press  for validation.
Factory set to 12 psi

4.2.3 Cut out pressure setting

1. Press  for three seconds.
2. Cut out pressure value is displayed on screen, and the **STOP** LED turns on and flashes.
3. Set the adjusted rated current by pressing the  and  buttons.
4. Press  for validation.
Factory set to 20 psi

4.2.4 Basic menu

BASIC MENU  +  (diagram C)

- Press at the same time  +  buttons for five seconds.
- The values can be changed by pressing  or .
- Press  for validation.
- The parameter sequence is:

it	Type		System Reaction	Factory Setting
1	Bar	P	We can select the pressure units that are displayed between bar and psi.	bar
2	rc0	rc2	Fast-cycling alarm: – rc0: alarm unabled. – rc1: activated, when hammering is detected it delays start to protect the pump. – rc2: alarm is activated and the pump is stopped upon detection.	rc0

it	Type		System Reaction	Factory Setting
3	r.01	r.99	Only if fast-cycling alarm has been activated in the previous step (rc1). It can select the maximum time period between 3 consecutive starts that will be considered fast cycling (between 1 sec. and 99 sec.)	5 seconds
4	sb0	sb1	Standby mode activated (sb1), for low power consumption, or unabled (sb0)	sb0

4.2.5 Advance menu setting

ADVANCED MENU ▲ + ▼ + 

- Press at the same time ▲ + ▼ +  for five seconds.
- The values can be changed by pressing ▲ or ▼.
- Press  for validation.
- The parameter sequence is:

it	Type		System Reaction	Factory Setting
1	nc	no	Select the operation MODE as a conventional pressure switch (nc = normally closed_ or reverse (no = normally open).	nc
2	E00	E01/02	(Only pressure setting digital display). Select the operation mode Individual (E00) or Master/Slave (E01/ E02) in case of be assembled in groups of two pumps.	E00
3	d.05	d.1	(Only pressure setting digital display). Sets the minimum gap between Pstart 1 and Pstart 2 and/or Pstop 1 and Pstop 2.	d.05

it	Type		System Reaction	Factory Setting
4	ct0	ct9	Sets a time delay between 0 and 9 seconds to the start (is not available in synchronized operation mode).	ct0
5	dt0	dt9	Sets a time delay between 0 and 9 seconds to the stop.	dt0
6	Ar0	Ar1	Activation of the automatic restore system ART (Ar1) o disable (Ar0).	A40
7	P0.0	Px.x	It allows setting a minimum operating pressure under which the device would determine dry-running operation. It is very useful in the basic model pressure setting digital display where there is no reading of current intensity drawn. See Note 2.	0 bar 0 psi
8	t05	t99	Set the time perios between 5 and 99 seconds below the minimum operating pressure that will be considered a dry-running operation.	20'
9	c10	c30	It allows setting a % of nominal current above which the device will activate the overcurrent protection.	c20
10	rS0	rS1	If we change rS0 to rS1 and push ENTER default values are restored	eS0

5 Product Warranty

Commercial warranty

Warranty. For goods sold to commercial buyers, Seller warrants the goods sold to Buyer hereunder (with the exception of membranes, seals, gaskets, elastomer materials, coatings and other "wear parts" or consumables all of which are not warranted except as otherwise provided in the quotation or sales form) will be (i) be built in accordance with the specifications referred to in the quotation or sales form, if such specifications are expressly made a part of this Agreement, and (ii) free from defects in material and workmanship for a period of one (1) year from the date of installation or eighteen (18) months from the date of shipment (which date of shipment shall not be greater than thirty (30) days after receipt of notice that the goods are ready to ship), whichever shall occur first, unless a longer period is specified in the product documentation (the "Warranty").

Except as otherwise required by law, Seller shall, at its option and at no cost to Buyer, either repair or replace any product which fails to conform with the Warranty provided Buyer gives written notice to Seller of any defects in material or workmanship within ten (10) days of the date when any defects or non-conformance are first manifest. Under either repair or replacement option, Seller shall not be obligated to remove or pay for the removal of the defective product or install or pay for the installation of the replaced or repaired product and Buyer shall be responsible for all other costs, including, but not limited to, service costs, shipping fees and expenses. Seller shall have sole discretion as to the method or means of repair or replacement. Buyer's failure to comply with Seller's repair or replacement directions shall terminate Seller's obligations under this Warranty and render the Warranty void. Any parts repaired or replaced under the Warranty are warranted only for the balance of the warranty period on the parts that were repaired or replaced. Seller shall have no warranty obligations to Buyer with respect to any product or parts of a product that have been: (a) repaired by third parties other than Seller or without Seller's written approval; (b) subject to misuse, misapplication, neglect, alteration, accident, or physical damage; (c) used in a manner contrary to Seller's instructions for installation, operation and maintenance; (d) damaged from ordinary wear and tear, corrosion, or chemical attack; (e) damaged due to abnormal conditions, vibration, failure to properly prime, or operation without flow; (f) damaged due to a defective power supply or improper electrical protection; or (g) damaged resulting from the use of accessory equipment not sold or approved by Seller. In any case of products not manufactured by Seller, there is no warranty from Seller; however, Seller will extend to Buyer any warranty received from Seller's supplier of such products.

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Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com



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