

CO₂ Feed System

0-80 scfh or 30-350 scfh



READ THE ENTIRE OPERATING MANUAL PRIOR TO INSTALLATION AND USE.



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SAFETY INFORMATION

Please read this manual completely before unpacking, installing, and operating this equipment. In particular, pay attention to all dangers, warnings, and precautions, otherwise, it may cause serious injury to the operator or damage to the equipment.

Symbol	Description
	Warning (Risk of electric shock)
	Caution (Refer to the user's guide)
	Ground, Protective Conductor Terminal

Note: When in doubt regarding your electrical installation, contact a licensed electrician.

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1.0 Introduction

Congratulations on purchasing the Blue-White CO₂ Feed System!

Your CO₂ Feed System is pre-configured for 0-80 scfh flow and ready for use. The system is designed to give many years of service and hassle-free pH adjustment.

We thank you for your business. For more information or questions on this product, please visit us at www.blue-white.com

1.1 What's in the box

- CO₂ Feed System Complete with 110VAC Power Supply Cord.
- Diffuser
- Mounting Brackets (4)
- Tubing 10'
- Stainless Steel float (for 30-350 scfh flow)
- Electrical Schematics

Note: Check all packaging for completeness and inspect for damage before installation.

See Section 9.0 for information on Accessory Items (optional items which may be included with system, if ordered.)

1.2 System Features

- Simple design allows safe and effective pH control. The CO₂ feed system maintains the desired pH level by directly injecting carbon dioxide into the water supply. This process creates carbonic acid, which lowers the water's pH level naturally without hazardous chemicals such as muriatic acid or sulfuric acid.
- Completely enclosed in a NEMA 4X enclosure to protect against harsh environments. Simple installation for indoor and outdoor use.
- Flow adjustment via Blue-White F-440 adjustable flow meter is accurate and consistent, and includes red indicator marker.
- Simple activation with stainless-steel solenoid valve and illuminated on-off switch.
- Includes inlet/outlet tubing and enclosure mounting tabs.

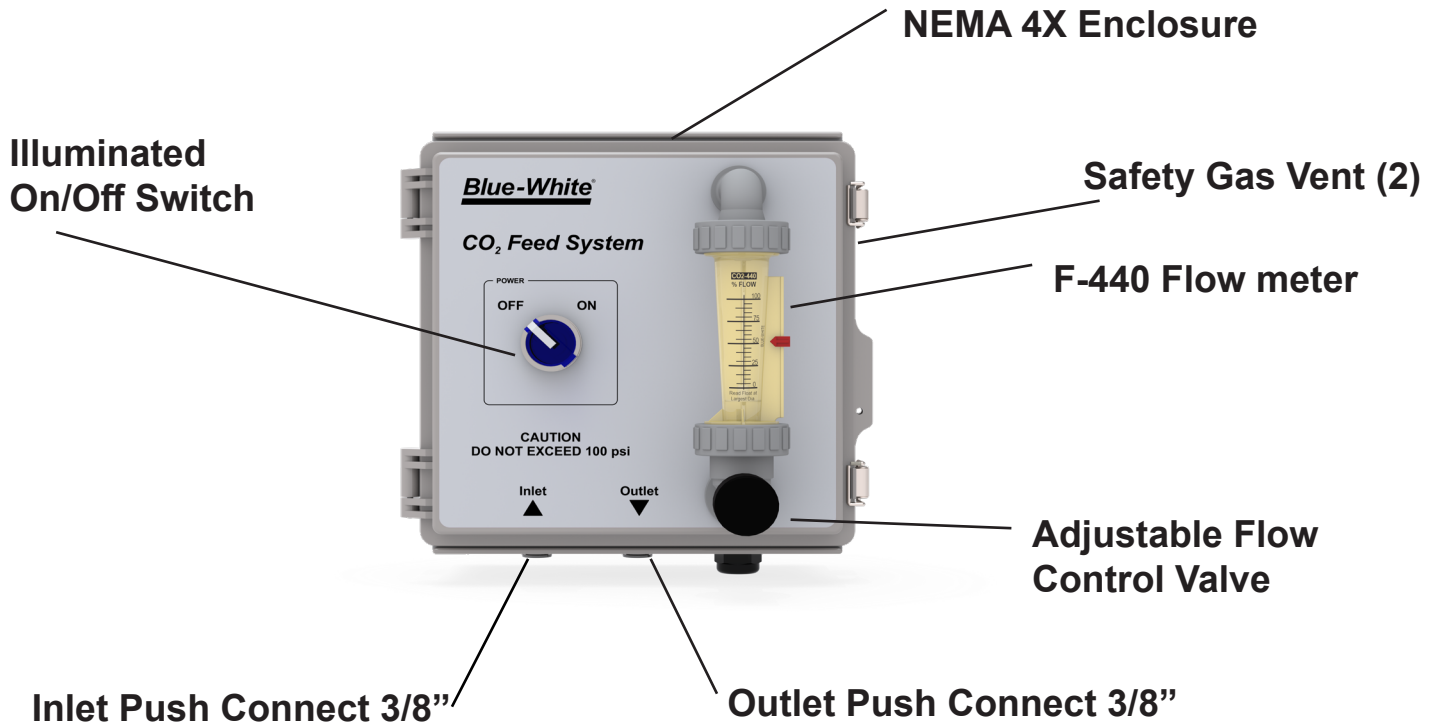
2.0 Engineering Specifications

Item	CO ₂ Feed System
Flow Range	0 - 80 scfh and 30 - 350 scfh (0 - 9.15 lb/hr and 3.4 - 40 lb/hr)*
Flow Meter	0 -100% scale, Blue-White F-440 Polysulfone
Flow Meter Float	PVDF Float (0 - 80 scfh), Stainless Steel (30-350 scfh)
Enclosure	NEMA 4X
Operating Temperature	40 – 104 °F (4 °C – 40 °C)
Operating Pressure	0 – 80 psi (0 – 5.5 bar)
Maximum Pressure	100 psi (6.9 Bar)
Tubing Material	3/8" OD Polyurethane (10 ft provided)
Solenoid Valve	Stainless Steel Body
Power Supply	115VAC 50/60 Hz, 0.6A (6 ft cord included)
Dimension (H x W x D)	8.9" x 8.6" x 5.21" (227H x 218W x 132D mm)
Approximate Weight	~ 5 lbs (2.3 kg)
Warranty	12 Months
Shipping Dimensions	11" x 12" x 13" (279H x 305W x 330D mm)

* Pressure = 1 Bar, Temp = 70F)

3.0 Layout

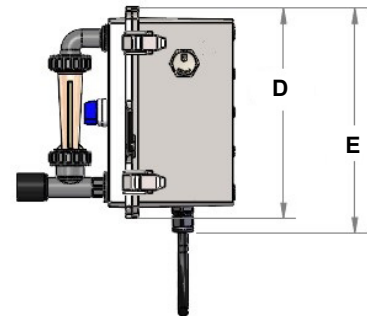
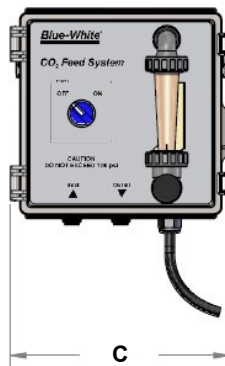
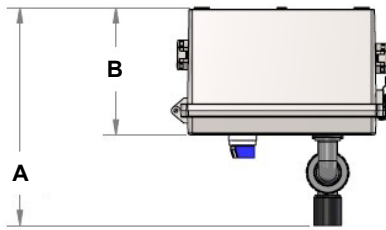
The CO₂ Feed System is specifically designed as a 'Turn-Key' monitoring solution for clean water applications including drinking water networks, secondary water supply and decorative/ swimming water applications.



4.0 Dimensions

CO₂ Feed System Dimensions

Dim	Inch	cm
A	8.91"	22.6
B	5.21"	13.2
C	8.94"	22.7
D	8.60"	21.8
E	9.19"	23.3



5.0 Installation



Always wear protective clothing, face shield, safety glasses and gloves when working on your unit. Use caution when lifting and mounting equipment. When in doubt, contact factory for assistance.

5.1 Installation Requirements

Power Supply: 115VAC 50/60Hz - provided with 6 foot power cord.
24VDC Unit - option to wire 24VDC directly

CO₂ Supply: CO₂ (Carbon Dioxide gas) can be supplied with by filling empty canisters provided by Blue-White or other source. A pressure regulator is required to provide proper pressure to Feed System. Pressure shall be no more than 100 psi.

Wall Mount Space: The CO₂ Feed System can easily mount to any wall space. We recommend mounting in covered area where exposure to sunlight and rain is minimal.

Wall Mount Weight: Approximately 5 lbs (2.3 kg). Please use appropriate mounting hardware. Stainless steel mounting tabs are provided.

5.2 CO₂ Flow meter Floats (Desired flow range)

The CO₂ Feed System will ship with the PVDF (opaque/white) float (0 - 80 scfh) installed. If the higher flow range of 30-350 scfh is desired, you will need to replace PVDF float with the stainless steel float.

To replace float:

1. Loosen top and bottom union nuts.
2. Slowly pull flow meter body out. Be careful not to loose o-rings.
3. With care, remove top guide rod holder and place to the side.
4. Slowly tilt flow meter until PVDF float slides off guide rod. Place float to the side.
5. Place stainless steel float onto guide rod. Ensure float is in proper "up" position. The larger diameter section of the float should be at the top.
6. Replace the guide rod holder. Be careful not to bend guide rod.
7. With o-rings in place, slide meter body back into place.
8. Tighten top and bottom union nuts.

5.3 CO₂ Tube connections

Inlet: Use provided 1/4" ID x 3/8" OD tubing to connect to CO₂ supply. If using other tubing, tubing must be rated for 100 psi and be compatible with the conditions of the location.

Outlet: Use provided 1/4" ID x 3/8" OD tubing to connect to injection point. If using other tubing, tubing must be rated for 100 psi and be compatible with the conditions of the location.

5.4 Wiring

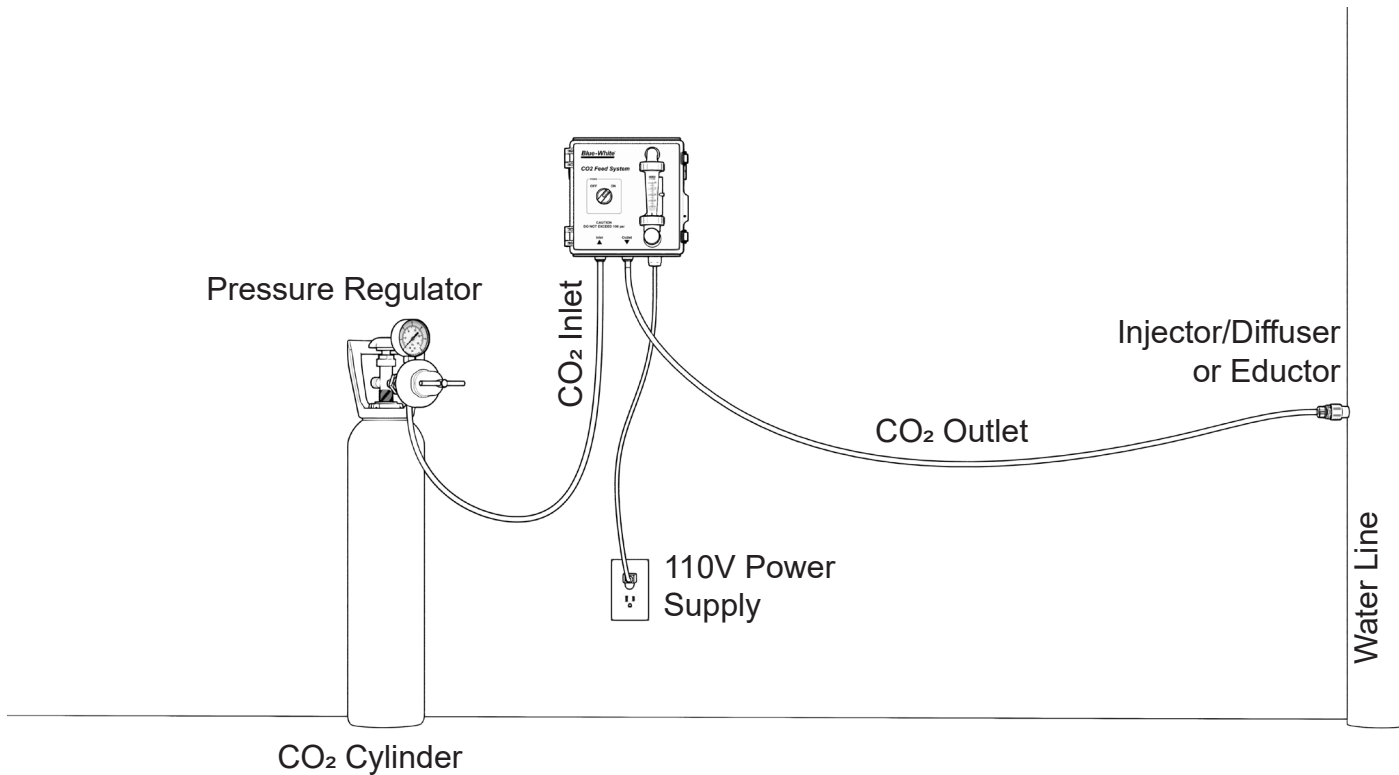
The CO₂ Feed System includes pre-wired cord and standard plug for 110 AC 50/60Hz power outlet for normal operation.

For 24VDC wiring

Failure to operate according to the electrical code of practice may result in electric shock injury or even death. **Note: When in doubt regarding your electrical installation, contact a licensed electrician.**



5.5 Typical Installation



5.6 Installation Instructions

1. Place and position equipment and secure CO₂ Feed System enclosure to solid wall surface. Mount at convenient height for adjustment.
2. Install CO₂ Feed System close to CO₂ source.
3. Plug power supply cord into properly grounded power receptacle. Check to make sure proper voltage is being used.
4. Install CO₂ heater onto CO₂ cylinder, if required.
5. Ensure CO₂ cylinder(s) are properly secured.
6. Connect pressure regulator.
7. Connect tubing from regulator to CO₂ Feed System inlet connector port. Cut to length.
8. Connect outlet tubing from CO₂ Feed System outlet port to appropriate diffuser, injector, or eductor. (Use PTFE tape as necessary when installing injector or eductor.)

The CO₂ Feed System includes pre-wired cord and standard plug for 115 AC 50/60Hz power outlet for normal operation.

6.0 Start-Up and Operation

6.1 Start Up

1. After all connections and mounts have been secured and checked, proceed with start up of the system.
2. Open the gas cylinder valve slowly.
3. Adjust output pressure of the regulator to the desired pressure. Do not exceed 100 psi.
4. Switch the CO₂ Feed System switch to the on position. Switch will illuminate.
5. Adjust the needle valve on the F-440 Flow meter to desired flow rate. We recommended starting at lower setting, monitoring the pH, and then adjusting to greater flow if needed.

6.2 Operation

1. Before continued operation, check that all connections are secure. Check for leaks. Re-tighten or secure connections as necessary.
2. When system is not in use, switch on/off position to "Off". Lighted switch will turn off.
3. With system running, monitor pH levels, and adjust flow valve accordingly. Be sure flow provided is proper for the water flow, or water volume being treated.
4. Monitor CO₂ tank levels, and schedule replacement or refilling accordingly.

7.0 Maintenance and Service

1. Check all connections and pressure regulator settings weekly. Re-tighten, adjust, or secure connections as necessary.
2. Check pressure regulator to determine when to refill or replace CO₂ cylinders.
3. Clean or replace CO₂ tubing as needed. Inspect regularly.
4. See section 9.0 for spare parts and other accessories.

8.0 WARRANTY

8.1 LIMITED WARRANTY

Your new CO₂ Feed System is a quality product and is warranted for 12 months from date of purchase (proof of purchase is required). The unit will be repaired or replaced at our discretion. Failure must have occurred due to defect in material or workmanship and not as a result of operation of the product other than in normal operation as defined in the manual. Warranty status is determined by the serial label and the sales invoice or receipt. The serial label must be on the unit and legible. The warranty status of the unit will be verified by Blue-White or a factory authorized service center.

8.2 WHAT IS NOT COVERED

- Wear items.
- Unit removal, or re-installation, and any related labor charge.
- Freight to the factory, or service center.
- Units that have been tampered with, or in pieces.
- Damage to the unit that results from misuse, carelessness such as chemical spills on the enclosure, abuse, lack of maintenance, or alteration which is out of our control.
- Units damaged by faulty wiring, power surges or acts of nature.

8.3 PROCEDURE FOR IN WARRANTY REPAIR

Contact the factory to obtain a RMA (Return Material Authorization) number. Carefully pack the unit to be repaired. Please enclose a brief description of the problem as well as the original invoice or sales receipt, or copy showing the date of purchase. Prepay all shipping costs. COD shipments will not be accepted. Warranty service must be performed by the factory or an authorized service center. Damage caused by improper packaging is the responsibility of the sender. When In-Warranty repair or replacement is completed, the factory pays for return shipping to the dealer or customer.

8.4 PRODUCT USE WARNING

Blue-White products are manufactured to meet the highest quality standards in the industry. Each product instruction manual includes a description of the associated product warranty and provides the user with important safety information. Purchasers, installers, and operators of Blue-White products should take the time to inform themselves about the safe operation of these products. In addition, Customers are expected to do their own due diligence regarding which products and materials are best suited for their intended applications. Blue-White is pleased to assist in this effort but does not guarantee the suitability of any particular product for any specific application as Blue-White does not have the same degree of familiarity with the application that the customer/end user has. While Blue-White will honor all of its product warranties according to their terms and conditions, Blue-White shall only be obligated to repair or replace its defective parts or products in accordance with the associated product warranties. BLUE-WHITE SHALL NOT BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY LOSS OR DAMAGE WHETHER DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF OR RELATED TO THE FAILURE OF ANY OF ITS PARTS OR PRODUCTS OR OF THEIR UNSUITABILITY FOR A GIVEN PURPOSE OR APPLICATION.

17.5 CHEMICAL RESISTANCE WARNING

Blue-White offers a wide variety of wetted parts. Purchasers, installers, and operators of Blue-White products must be well informed and aware of the precautions to be taken when injecting or measuring various chemicals, especially those considered to be irritants, contaminants or hazardous. Customers are expected to do their own due diligence regarding which products and materials are best suited for their applications, particularly as it may relate to the potential effects of certain chemicals on Blue-White products and the potential for adverse chemical interactions. Blue-White tests its products with water only. The chemical resistance information included in this instruction manual was supplied to Blue-White by reputable sources, but Blue-White is not able to vouch for the accuracy or completeness thereof. While Blue-White will honor all of its product warranties according to their terms and conditions, Blue-White shall only be obligated to repair or replace its defective parts or products in accordance with the associated product warranties. BLUE-WHITE SHALL NOT BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL, ARISING OUT OF OR RELATED TO THE USE OF CHEMICALS IN CONNECTION WITH ANY BLUE-WHITE PRODUCTS.

9.0 Product Information, Accessories, and Replacement Parts

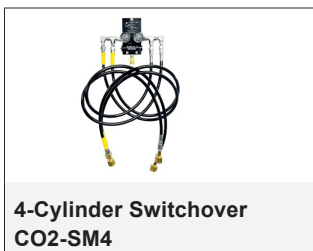
9.1 Model Number Matrix

CO2

Model Number

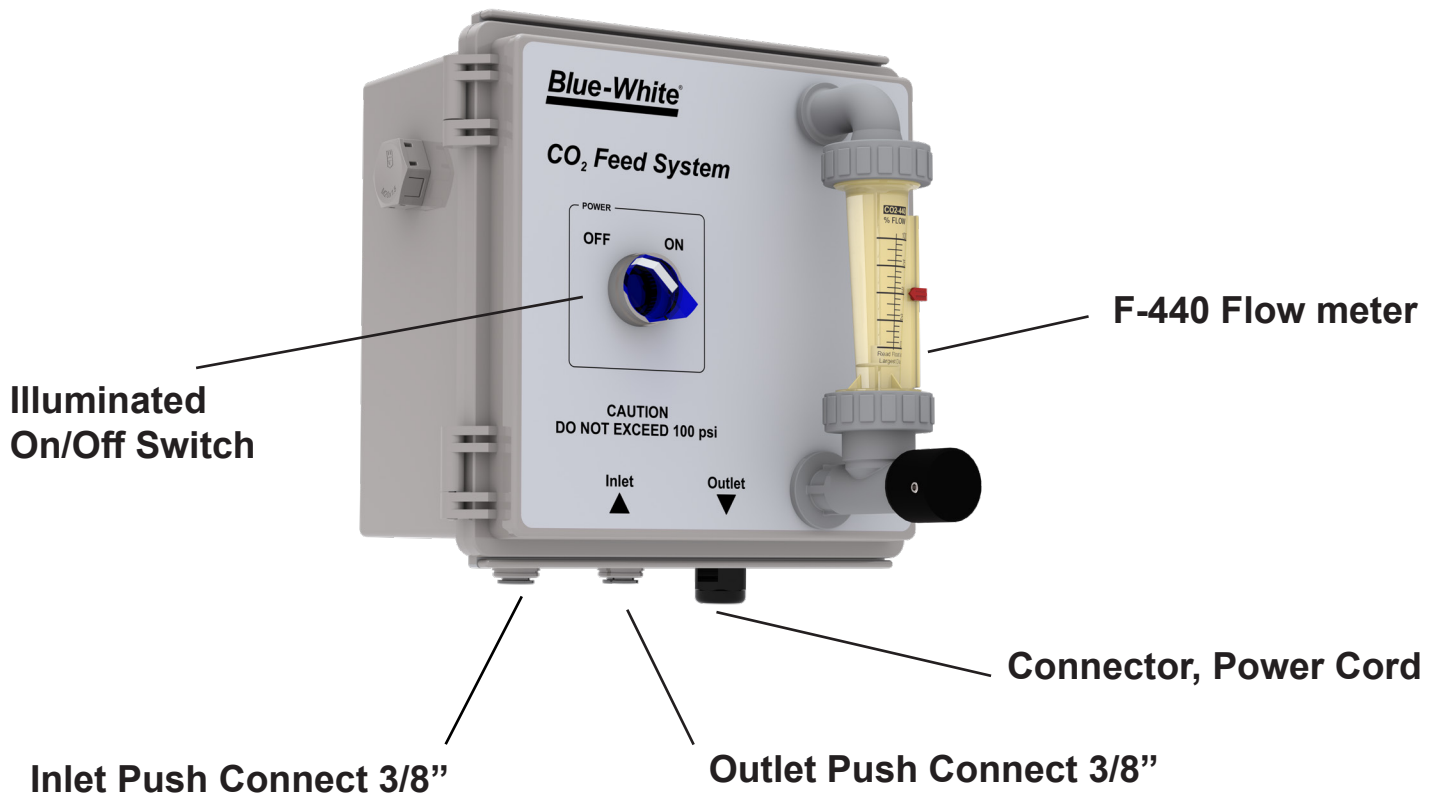
CO2	CO ₂ Feed System			
Series Control Options				
X	Manual / Local Control Only			
Power / Operating Voltage / Cord				
2	24VDC			
4	115V / 60Hz, power cord NEMA 5/15 plug (US)			
Options				
X	No option selected			
CO2	X	4	X	Sample Model Number

Accessories



9.2 Spare Parts

Item	Part No.	Description	Qty. Req.
1	90010-731	On/Off Switch, Illuminated	1
2	71010-935	F-440 Flow Meter (includes both floats)	1
3	90018-022	3/8 in. Polyurethane Tubing, 10 ft	1
4	90018-010	Push Connector, Elbow	2
5	90010-733	Solenoid Valve, SS	1
6	90010-110	Power Cord, 6 ft	1
7	90008-035	Connector, Liquid Tight, Power Cord	1
8	90018-009	Push Connector, Inlet/Outlet	2



NOTES:

NOTES:



Users of electrical and electronic equipment (EEE) with the WEEE marking per Annex IV of the WEEE Directive must not dispose of end of life EEE as unsorted municipal waste, but use the collection framework available to them for the return, recycle, recovery of WEEE and minimize any potential effects of EEE on the environment and human health due to the presence of hazardous substances. The WEEE marking applies only to countries within the European Union (EU) and Norway. Appliances are labeled in accordance with European Directive 2002/96/EC.

Contact your local waste recovery agency for a *Designated Collection Facility* in your area.

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