Wet Barrel Fire Hydrant
Model No.: LF-WBHX-115 / LF-WBHM-115
LF-WBHX-100 / LF-WBHM-100

Installation, Operation & Maintenance

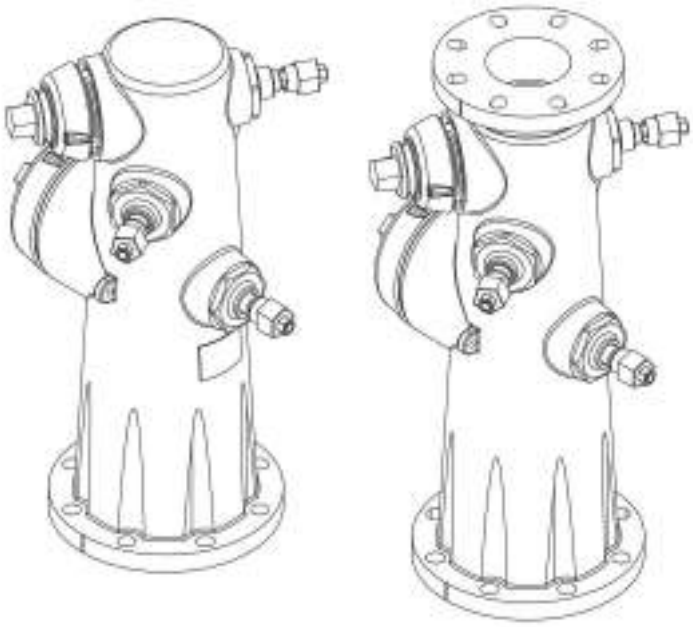
In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

Edmund House 12-22 Newhall Street Birmingham, B3 3AS, United Kingdom | T +44 1902 798 706 F +44 1902 798 679 | E sales@lifeco-uk.com | www.lifeco-uk.com

1. PRODUCT INTRODUCTION

The LF-WBH series wet barrel fire hydrant (Models LF-WBHX-115, LF-WBHM-115, LF-WBHX-100 and LF-WBHM-100) is a dedicated fixed fire water supply facility designed for various fire protection water supply systems in areas with ambient temperatures consistently above 4°C and no freezing risk. Primarily installed along both sides of roads and around buildings in urban municipal roads, residential communities, commercial buildings, industrial parks, and public spaces, this product combines dual functions: direct firefighting and water supply for fire trucks. It rapidly delivers high-pressure fire water during fires to effectively combat initial flames while providing continuous water supply for subsequent firefighting operations, making it an indispensable core component of outdoor fire water supply systems.

The LF-WBH series wet barrel fire hydrant has a nominal pressure of 250 PSI. Its inlet features a flange connection with a nominal pipe diameter of 6" and a M-flange nominal diameter of 4", compatible with standard flanged pipes conforming to ASME B16.1 Class 125, ASME B16.42 Class 150, EN1092-2 PN10, and EN1092-2 PN16. The outlet employs a threaded connection: 4.5" or 4" for fire truck nozzles, and 2.5" for hose nozzles, using NFPA 1963 standard threads (standard grade).



2. TRANSPORT AND STORAGE

2.1 Transport

2.1.1 Packaged Valves

Packaged valves must be handled using forklifts, and lifting operations require appropriate hooks.

When lifting packaged valves, operations must be performed at the designated lifting points and center of gravity locations.

During transportation, ensure the packaging remains intact to prevent valve damage.

2.1.2 Unpackaged Valves

Unpackaged valves must be handled with appropriate care during transportation; all transport must be conducted on pallets to prevent damage to the processing surfaces and spray-coated areas.

2.2 Storage

2.2.1 Short-Term Storage

Short-term storage refers to the method of storing valves for use during project construction, with installation scheduled within a relatively short period (typically one to three months). During this storage phase, the following requirements must be met:

The preferred storage location is a clean, dry warehouse.

During storage, retain the valve in its original packaging to prevent entry of dust, debris, insects, or animals.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

Valves may be stored in open, uncovered areas provided that appropriate measures are taken to withstand adverse weather conditions (such as direct sunlight or thunderstorms).

The product must be placed on a pallet, shelf, or other suitable flat surface and securely covered with waterproof fabric; direct placement on the ground is prohibited.

2.2.2 Long-Term Storage

Long-term storage refers to valve storage lasting more than three months. During this period, the following requirements must be met:

The storage location should be a clean, dry warehouse. Do not expose the valve to extreme temperatures.

During storage, retain the valve in its original packaging to prevent entry of dust, debris, insects, or animals.

The valve must be manually opened and closed once every six months (by gently closing after fully opening) to relieve rubber compression stress; additionally, the sealing surface should be cleaned before opening the valve plate.

The relative humidity of the environment should be below 75%.

Do not expose directly to ultraviolet radiation or sunlight;

Avoid contact with ozone generation equipment, as well as with flammable gases and vapors.

During storage, the temperature should be maintained below 38°C (100°F) and kept away from direct heat sources. The preferred temperature range is 4°C to 29°C (40°F to 85°F).

3. INSTALLATION GUIDE

3.1 The following checks must be completed before installation

3.1.1 Check whether the packaging box is damaged or waterlogged. Focus on inspecting internal products if packaging damage exists.

3.1.2 Check the surface coating of hydrant body, which shall be complete without obvious collision scratches, cracks and rust.

3.1.3 Ensure flange sealing surfaces and outlet threads are smooth without burrs, deformation and collision damage.

3.1.4 Rotate each outlet valve with a special hydrant wrench; all valves shall operate flexibly without jamming.

3.2 Pipeline Preparation

3.2.1 Fire hydrants shall not bear pipeline weight, thrust or bending moment. Sufficient fixing and supporting structures shall be installed for pipelines before hydrant installation.

3.2.2 Clean pipeline sealing surfaces to ensure flat and smooth end faces. Keep pipelines coaxial with hydrants, and ensure radial misalignment and flatness error of pipelines meet relevant standard requirements.

3.2.3 Install hydrants directly connected with rigid pipelines. Do not install hydrants between soft joints, rubber-coated flanges and expansion joints.

3.3 Lifting Requirements

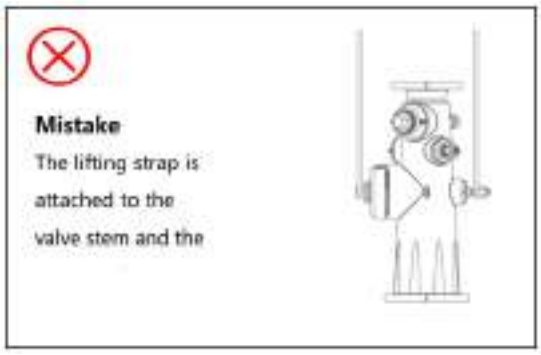
3.3.1 Lifting operation is only allowed on the upper flange, bottom flange and reserved lifting holes of hydrant body. It is forbidden to bind slings on valve stems and outlet ports.

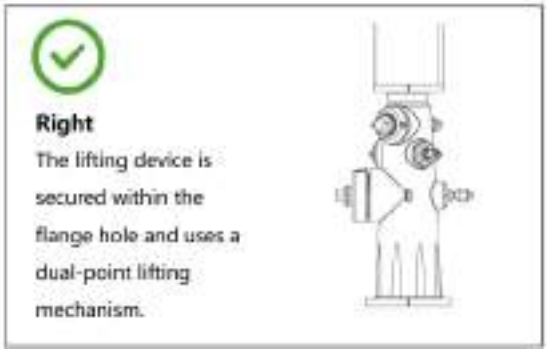
3.3.2 Use soft slings for hoisting points to prevent scratching the anti-corrosion coating of hydrant body.

3.3.3 Single-point lifting and lateral lifting are prohibited.

3.3.4 Overload lifting is strictly forbidden.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.





3.4 Safety Protection

3.4.1 Operators shall wear goggles and protective gloves during installation; fasten safety belts for high-altitude operation, and take fire prevention measures during welding work. Release pipeline pressure and drain residual water completely before installation.

3.5 Installation Orientation (Confirm Application)

3.5.1 Install fire hydrants in accordance with local municipal regulations and design standards.

3.5.2 Connect hydrants to matched fire water supply pipelines.

3.5.3 Unless otherwise specified by local codes, keep a minimum distance of 2 feet from road edge to hydrant.

3.5.4 Face fire engine nozzles towards the road to realize quick connection with fire engine water pumps.

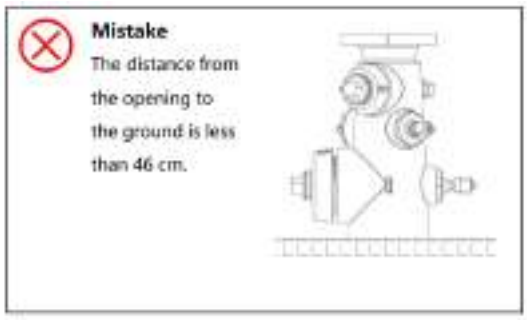
3.5.5 The height of hose nozzle shall be at least 18 inches (46cm) above the ground, ensuring enough operating space for hydrant wrenches to disassemble nozzle caps and operate valves.

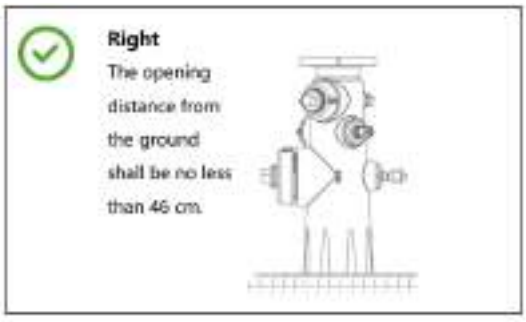
3.5.6 Install isolating gate valves on pipelines to separate hydrants from main pipelines for maintenance or emergency shutdown. Set end caps or supporting structures at pipeline joints to realize hydrant disassembly without closing main water supply.

3.5.7 Arrange isolating gate valves as close to main pipelines as possible.

3.5.8 Install hydrants on firm concrete or stone bases to avoid settlement and deformation of pipelines and vertical pipes. Equip supporting structures at pipeline joints.

3.5.9 Remove debris on sealing surfaces before closing valves. Tighten all nozzle caps to prevent manual disassembly, and keep isolating gate valves fully open.





3.6 Installation Procedures

3.6.1 Pre-installation Preparation

Flush pipelines thoroughly to remove internal impurities.

Clean hydrant sealing surfaces to eliminate surface contaminants.

Confirm hydrant model and nominal diameter match pipeline parameters.

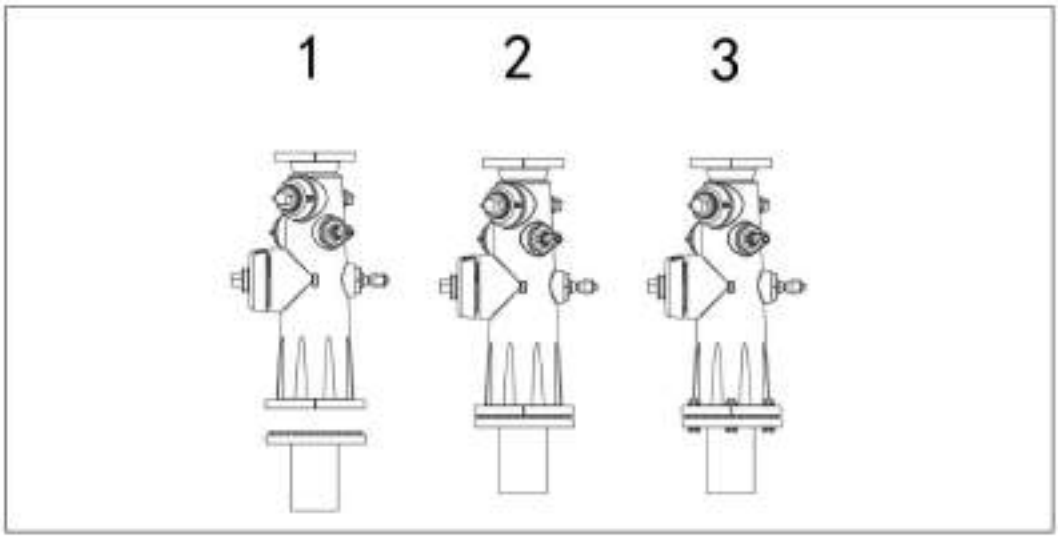
3.6.2 Hydrant Positioning and Flange Connection

Place matched flange gaskets in the center of pipeline sealing surfaces, and lift wet hydrants to the upper side of pipelines stably.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

Adjust pipelines and hydrant flanges to keep coaxial alignment and matched bolt holes, and ensure gaskets completely cover sealing surfaces without offset.

Penetrate all flange bolts, pre-tighten bolts loosely in diagonal sequence, then fasten bolts step by step.



3.6.3 Diagonal Graded Fastening of Flange Bolts

Fasten bolts in four stages according to torque proportion: 30% → 50% → 70% → 100%.

One-time full tightening of single bolt is prohibited. Follow diagonal tightening sequence to avoid flange deflection, uneven gasket stress, seal failure and bolt fracture.

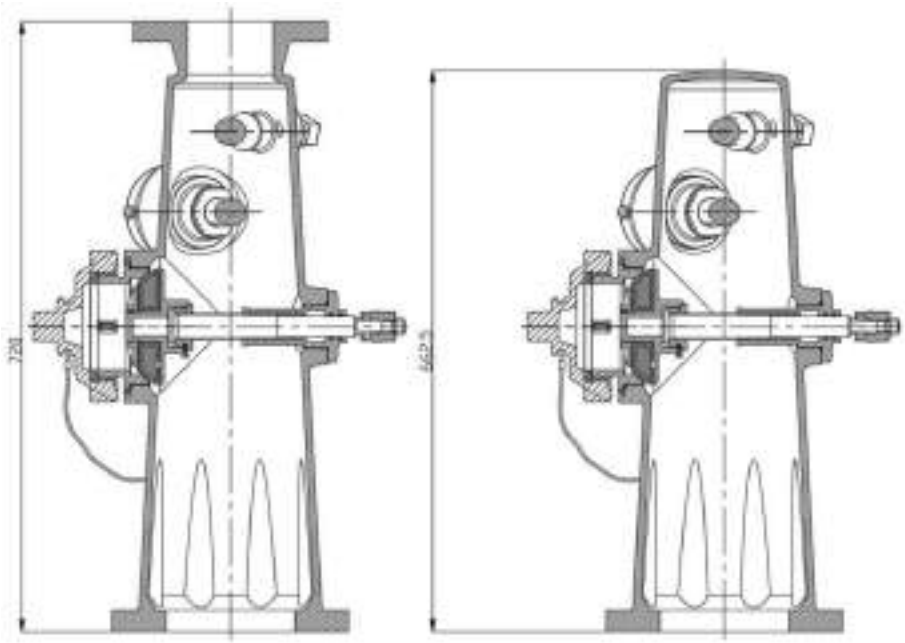
Ensure two flanges fit closely and in parallel, gaskets are centered without wrinkles and offset, and 2~3 threads of bolts are exposed outside nuts after fastening.

3.6.4 Post-installation Inspection

Open and close valves repeatedly to verify normal full-open and full-close positions and smooth rotation of valve stems.

Inspect flange connections and valve seat sealing surfaces for medium leakage.

Check valve stems and operating components are installed in correct position without dislocation.



In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

4. OPERATING INSTRUCTIONS

4.1 Pipeline Flushing

Keep hydrants fully open during pipeline flushing to prevent impurities from jamming valve plates or scratching sealing surfaces.

4.2 Pressure Test

Boost pressure gradually during pressure test. Inspect hydrant body, flange joints and shaft end seals for external leakage after pressure stabilization.

4.3 Functional Test

Operate valves for opening and closing test; no abnormal noise and jamming shall occur during the whole process.

4.4 Record Filing

Record installation data and debugging parameters completely and file into equipment archives. Regularly operate valve stems during long-term shutdown to prevent valve seizure.

5. MAINTENANCE AND CARE

5.1 Routine Inspection

5.1.1 Appearance Inspection: Check hydrant body, flanges and bolts for rust, cracks and deformation;

5.1.2 confirm valve stems and operating nuts are intact and operate flexibly without jamming;

5.1.3 check shaft sealing parts for leakage and complete surface coating.

5.2 Opening and Closing Inspection

Manually open and close valves 1-2 times to verify accurate full-open and full-close positions.

5.3 Sealing and Leakage Inspection

Close valves completely and check downstream side for water seepage and dripping; inspect flange joints for leakage and loose bolts.

5.4 Quarterly Maintenance

5.4.1 Check chains and nozzle caps for binding, and ensure nozzle caps can rotate freely.

5.4.2 Remove nozzle caps, and visually inspect inlet flanges, outlet nozzles, valve seats and valve shaft holes for leakage. Tighten connectors appropriately for slight leakage; mark defective products for subsequent maintenance if leakage cannot be eliminated.

5.4.3 Check outlet threads for damage and foreign accumulation, and clean threads timely to ensure smooth thread engagement.

5.4.4 Repair paint for exposed metal parts of hydrant body timely to prevent rust.

5.4.5 Close isolating gate valves to isolate hydrants from pipeline pressure, then fully open and close each valve twice to ensure free rotation of valve shafts.

5.4.6 Visually inspect valve disc rubber seals through outlet ports; the compression amount of seals shall not exceed 3mm. Mark products with damaged seals for replacement maintenance.

5.4.7 Close all valves completely, slightly open the top valve to exhaust air inside hydrants.

5.4.8 Slowly open isolating gate valves, and close exhaust valves when clear water flows out steadily.

5.4.9 Repeat the above exhaust operation for all outlet valves, and treat drained water properly.

5.4.10 Close all valves and tighten nozzle caps to prevent manual disassembly.

5.4.11 Confirm isolating gate valves are kept fully open.

5.4.12 Record all inspection data and follow-up maintenance items.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

5.4.13 Put qualified hydrants back into normal service.

5.4.14 Record inspection, maintenance and repair information including date, inspection items, test results and operator information completely.

6. TROUBLESHOOTING

Fault Phenomenon	Root Cause	Solutions	Precautions
Valve seat sealing leakage	Damaged sealing surfaces of hydrant body or valve disc	Grind slightly scratched sealing surfaces; replace valve disc for severe damage	Mark all disassembled parts to avoid assembly dislocation
	Foreign matters trapped between sealing pairs	Disassemble hydrant and clear internal impurities	
	Aged sealing components	Replace failed sealing parts	
Valve shaft end leakage	Worn and deformed valve disc shaft	Replace worn valve disc and shaft components	Apply special fire medium-compatible sealing grease on valve shaft and shaft hole after replacing seals
	Aged or damaged O-rings	Replace invalid O-rings	
Leakage between hydrant and pipeline	Uneven tightening of flange bolts	Retighten all bolts evenly according to standard torque in diagonal sequence	One-sided bolt tightening is forbidden to prevent flange surface deformation
	Damaged or offset flange gaskets	Replace damaged gaskets and adjust gasket position	
	Impurities on flange sealing surfaces	Clean sealing surfaces and reinstall flanges	
Valve opening and closing jamming	Pipeline impurities jamming valve disc	Clear impurities inside pipeline and hydrant	Only use fire water compatible lubricant; mixed use of different grease is prohibited
	Shaft sleeve wear leading to shaft system offset	Replace valve shaft and related accessories, and calibrate shaft system position	

7. SAFETY PRECAUTIONS

7.1 Safety Warnings

7.1.1 This hydrant is only applicable to specified fire water medium and working conditions. Overpressure, overtemperature and mismatched medium use are forbidden, which may cause hydrant rupture, medium leakage and serious safety accidents.

7.1.2 Installation, commissioning and maintenance work must be operated by professional certified personnel. Cut off pipeline pressure and take complete safety protection measures before all operations.

7.1.3 Do not close isolating valves arbitrarily during fire protection system operation. Formulate emergency response plans for fire protection system before maintenance shutdown.

7.1.4 Mark and clean components during hydrant disassembly, and reassemble strictly according to original factory requirements. Non-original accessories are not allowed to replace original parts randomly.

7.1.5 If hydrants need to be installed at pipeline ends, please inform the manufacturer in advance for special matching solutions. Unauthorized modification of products is prohibited.

7.2 Daily Operation Guidelines

7.2.1 Inspect valve operation status, sealing performance and signal feedback function regularly to ensure normal standby state of hydrants.

7.2.2 Operate idle valves at least once every 3 months.

7.2.3 Inspect shaft sealing parts every 6 months, and replace aged and damaged seals timely.

7.2.4 Restore all valves to normal working position after system pressure test and routine inspection, and confirm normal signal feedback.

7.2.5 Keep complete inspection, maintenance and debugging records to establish perfect equipment archives for traceability.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

7.2.6 Carry out comprehensive performance detection after products reach design service life. Replace unqualified products immediately, and over-age service is prohibited.

8. DECOMMISSIONING AND DISPOSAL

8.1 Mandatory Scrap Standards

8.1.1 Hydrant Body Defects

Hydrant body cracks, sand holes and penetrating corrosion;

body deformation, flange or interface breakage leading to sealing failure;

serious rust and wall thickness reduction of cast iron hydrants with burst risk.

8.1.2 Permanent Sealing Failure

Aging, cracking, peeling and hardening of valve disc rubber seals;

deep scratch and deformation of sealing surfaces with serious leakage after replacing seals.

8.1.3 Damaged Valve Shaft and Transmission Structure

Bending, rust and thread damage of valve shafts;

valve shaft fracture and excessive wear leading to opening/closing failure;

deformation, corrosion and excessive concentric offset of sealing seats.

8.1.4 Failed Flange Connection Structure

Flange deformation, deep indentation and cracks;

flange cracks, bolt sliding thread or fracture;

damaged sealing groove unable to form effective seal.

8.1.5 Other Mandatory Scrap Conditions

Service life exceeds 10~12 years (recommended by fire protection specifications);

hydrants used in fire accidents, impacted violently or deformed by pipeline water hammer.

8.2 Scrap Disposal Safety Process

8.2.1 Pressure Relief and Water Drainage: Close front and rear control valves, release pipeline pressure completely and drain residual water. Never disassemble hydrants with pressure to avoid water hammer and high-pressure water spray injury.

8.2.2 Marking and Isolation: Hang "Scrapped, Forbidden to Use" warning tags on waste hydrants; isolate scrapped products from qualified products, and prohibit reconditioning and reuse.

8.2.3 Flange Disassembly: Loosen flange bolts reversely according to fastening sequence to prevent sudden flange popping; avoid scratching pipeline flange surfaces when removing residual gaskets.

8.2.4 Final Disposal: Break or cut cast iron hydrants to prevent illegal refurbishment and resale. Do not sell complete waste hydrants to waste recycling stations. Cut valve shafts or damage hydrant bodies before recycling disposal.

8.3 Prohibited Actions

- ✕ Welding repair, glue repair and makeshift use of scrapped hydrants are prohibited
- ✕ Reusing scrapped hydrants on non-fire pipelines is prohibited
- ✕ Only replacing seals while retaining defective hydrant body for continuous use is prohibited
- ✕ Replacing special fire isolation valves with non-standard industrial valves is prohibited

For information about this product and other LIFECO products, please contact Lichfield Fire & Safety Equipment Co. Ltd (LIFECO) at sales@lifeco-uk.com or visit www.lifeco-uk.com.

In line with our policy of continuous product improvement LIFECO reserves the right to modify specifications without prior notice.

Lichfield Fire & Safety Equipment Co. Ltd
Edmund House, 12-22 Newhall Street
Birmingham, B3 3AS, United Kingdom
Tel: +44 (0) 1902 798 706 I Fax: +44 (0) 1902 798 679
Email: sales@lifeco-uk.com

www.lifeco-uk.com