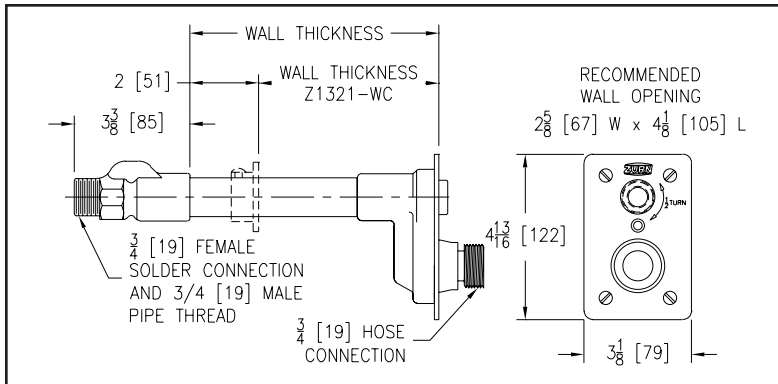
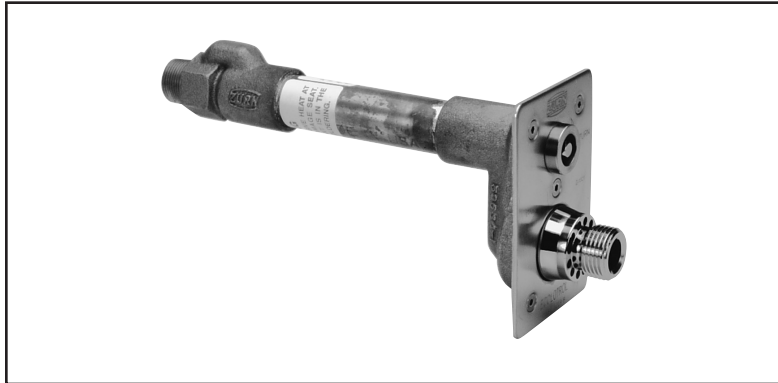


**Z1321 ECOLOTROL WALL HYDRANT WITH CERAMIC DISK – Exposed, Non-Freeze, Anti-Siphon, Automatic Draining**



**ENGINEERING SPECIFICATION:** ZURN Z1321 Exposed Ecolotrol anti-siphon automatic draining wall hydrant. Complete with copper casing, all bronze interior parts with one-half turn ceramic disc cartridge and combination 3/4" [19 mm] female solder and 3/4" [19 mm] male pipe thread inlet. Stainless steel face with operating key. (All solder connections are lead free.)

**Note:** During normal operation, the hydrant may take as long as one minute to complete the self-drainage process. This drainage feature should not be mistaken for an unsealed shut-off of the hydrant, and over-tightening of the operating coupling is not necessary.

Wall Thickness Inches [mm]	4" [102]	6" [152]	8" [203]	10" [254]	12" [305]	14" [356]	16" [406]	18" [457]	20" [508]	22" [559]	24" [610]	26" [660]	30" [762]
Overall Length* Inches [mm]	7 1/4" [184]	9 1/4" [235]	11 1/4" [286]	13 3/4" [337]	15 3/4" [387]	17 3/4" [438]	19 3/4" [489]	21 1/4" [540]	23 3/4" [591]	25 3/4" [641]	27 3/4" [692]	29 3/4" [743]	33 1/4" [845]
Approx. Weight Lbs. [Kg]	3 [1]	3 [1]	3 [1]	4 [2]	4 [2]	4 [2]	5 [2]	5 [2]	6 [3]	6 [3]	6 [3]	8 [4]	8 [4]

\*3/4" [19 mm] female solder and 3/4" [19 mm] male pipe thread connections.

**Z1321 Ecolotrol Wall Hydrant With Ceramic Disk**

The Z1321 Ecolotrol ceramic disk hydrant is an exposed, non-freeze, anti-siphon, automatic draining wall hydrant designed for commercial applications such as office buildings, institutions, hospitals, malls and retail outlets, and schools.

**Hydrant Features**

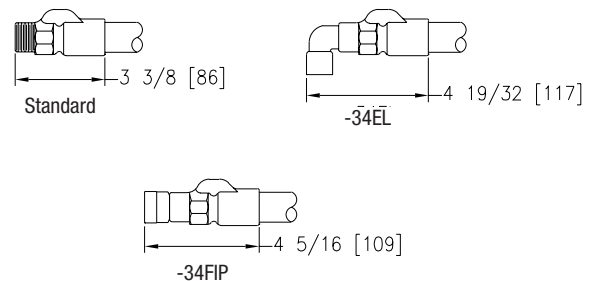
- **Certification** – IAPMO® listed. Approved under ASSE standard 1019-B (3/4" [19 mm] connection).
- **Integral Anti-Siphon Vacuum Breaker/Backflow Preventer** – Unique design utilizes an internal Equa-Balance® seal to prevent contamination of the potable water supply through back siphonage. The use of an additional hose-connection vacuum breaker with ASSE 1011 approval is not necessary.
- **Ceramic Valve Cartridge** – One-piece assembly, ceramic disk cartridge controls the flow through the hydrant with a maximum one-half (1/2) turn operation.
- **Casing** – Copper tubing.
- **Solder Joints** – Manufactured using no-lead solder.
- **Operating Screw** – Chrome-plated brass operating screw operates the valve cartridge and controls the drainage of the hydrant with use of an orificed retaining washer. Allows air intake to facilitate draining of the hydrant when in the closed position.
- **Operating Tube** – 3/8" [10 mm] seamless brass tubing.
- **Faceplate** – Constructed of type 304 stainless steel with brush finish and air intake port.
- **Modular Installation** – Hydrant may be installed in a horizontal or vertical orientation. Fits standard modular brick course when installed horizontally.
- **Drainage** – Through circular drain ports of the nozzle.
- **Operating Pressures** – Minimum running pressure 8 psi. Maximum static pressure 125 psi.
- **Temperature Range** – Minimum 33°F. Maximum 130°F.

**OPTIONS**

**SUFFIXES**

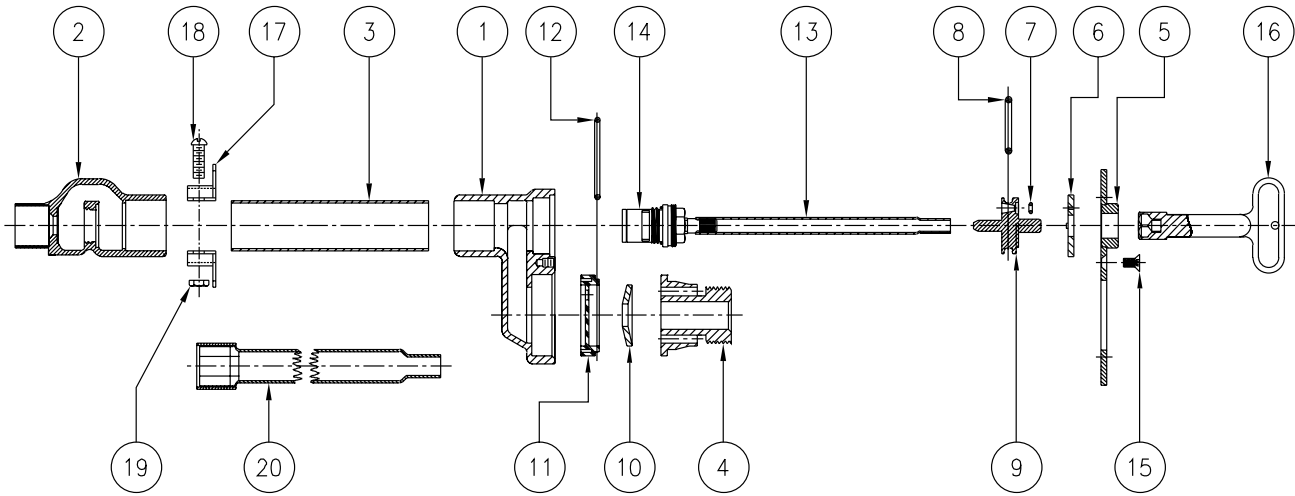
- PB Polished Bronze Face
- RK Hydrant Parts Repair Kit
- RT12 Ceramic Cartridge Removal Tool (Up to 12" [305 mm] Wall)
- RT24 Ceramic Cartridge Removal Tool (Up to 24" [610 mm] Wall)
- RT36 Ceramic Cartridge Removal Tool (Up to 36" [915 mm] Wall)
- WC Wall Clamp
- 34EL 3/4" [19 mm] 90° Solder Inlet Elbow
- 34FIP 3/4" [19 mm] IP Straight Female Inlet Adapter

**Inlet Descriptions**



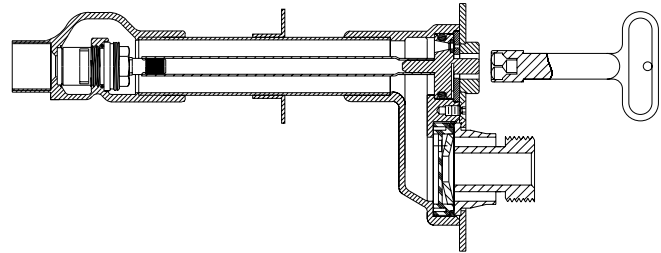
**Z1321 ECOLOTROL WALL HYDRANT WITH CERAMIC DISC** Parts Assembly, Parts List, and Operating Rod Assemblies

**Z1321 Parts Assembly**



**Z1321 Parts List**

Item	Description	Qty.	Part No.
1	Head	1	59634-001
2	Cartridge Housing	1	59629-004
3	Casing	1	60225-XXX
4	3/4" Nozzle	1	50799-005
5	Faceplate	1	56115-003
*6	Retaining Washer	1	60228-001
*7	O-Ring	1	23750-232
*8	O-Ring	1	23750-028
*9	Operating Coupling	1	60227-002
*10	Equa-Balance® Seal	1	50785-001
11	Disc	1	50819-001
*12	Disc O-Ring	1	23750-204
13	Operating Tube	1	60226-XXX
14	Cartridge Assembly	1	59626-001
15	Faceplate Screw	5	22698-047
*16	Key	1	59546-001
17	Wall Clamp (Optional)	2	56071-002
18	Clamp Screw (Optional)	2	14853-046
19	Clamp Nut (Optional)	2	14850-002
20	Cartridge Wrench (Optional)	1	62078-XXX



**Operating Rod Assemblies**

4" Wall	6-1/8"
6" Wall	8-1/8"
8" Wall	10-1/8"
10" Wall	12-1/8"
12" Wall	14-1/8"
14" Wall	16-1/8"
18" Wall	20-1/8"
20" Wall	22-1/8"
22" Wall	24-1/8"
24" Wall	26-1/8"
26" Wall	28-1/8"
30" Wall	32-1/8"



\*Items are available in -RK Repair Kit Option bag (#66955-195-9).

## Z1321 ECOLOTROL WALL HYDRANT WITH CERAMIC DISC Troubleshooting Guide

### Z1321 Troubleshooting Guide

PROBLEM	CAUSE	SOLUTION
Hydrant will not operate when turned on.	Water supply is shut off.	Turn on water supply.
Cannot turn the hydrant on with key.	Retaining washer is not properly orientated.	See "Orientating the Retaining Washer" below.
	Hydrant hasn't been used for a long time – O-Ring has adhered to the operating screw and head.	Follow steps 1-2, 4-5, and 8-10 of the Service Guide.
	Ceramic disc is broken and jammed.	Follow steps 1-2, 4, and 6-10 of the Service Guide.
Water sprays from holes around nozzle when hydrant is on.	Equa-Balance® seal is damaged.	Follow steps 1-3 and 8-10 of the Service Guide.
Water sprays through the faceplate's keyway drainage port when the hydrant is on.	Retaining washer pin is not properly orientated into operating coupling groove.	See "Orientating the Retaining Washer" below.
	Operating coupling's O-Ring or air relief orifice O-Ring is damaged or missing.	Follow steps 1-2, 4-5, and 8-10 of the Service Guide.
Hydrant will not self-drain when it is shut off (hose and hose nozzle are attached).	The orifice in the operating coupling, retaining washer, or both is blocked.	Follow steps 1-2, 4 (using a paper clip, evacuate debris from orifice), and 8-10 of the Service Guide.
	Operating coupling is not properly orientated.	See "Orientating the Retaining Washer" below.
Water does not shut off completely when hydrant is turned off.	Retaining washer is not properly orientated.	See "Orientating the Retaining Washer" below.
	Cartridge assembly is loose or damaged.	Follow steps 1-2, 4 (then check that the cartridge assembly is tightly seated), and 6-10 of the Service Guide.
	Debris in the ceramic disc, or disc is broken and jammed.	Follow steps 1-2, 4, and 6-10 of the Service Guide.
Hydrant exhibits low flow.	Water supply to the hydrant is restricted.	Check water supply to ensure that all upstream valves are fully open.
	Retaining washer is not properly orientated.	See "Orientating the Retaining Washer" below.
	Cartridge assembly is damaged or debris in the ceramic disk.	Follow steps 1-2, 4, and 6-10 of the Service Guide.

### Orientating the Retaining Washer

If hydrant performance is hindered by the orientation of the retaining washer (**see Troubleshooting Guide**) then follow these simple steps:

**Step 1:** Turn water supply to hydrant off.

**Step 2:** Loosen the five faceplate screws (#15) (DO NOT COMPLETELY REMOVE).

**Step 3:** Use the operating key to gently cycle the hydrant from OFF to ON and back to OFF again (180° OF ROTATION).

**Step 4:** Tighten the five faceplate screws (#15) until screws are snugged tight (by hand only).

⚠ **WARNING:** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
 ⚠ **ADVERTENCIA:** Cáncer y daño reproductivo - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)  
 ⚠ **AVERTISSEMENT:** Cancer et effets néfastes sur la reproduction - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**Z1321 ECOLOTROL WALL HYDRANT WITH CERAMIC DISC Service Guide**

**Z1321 Service Guide**

**Step 1: Shutting Off the Water Supply to the Hydrant**

Locate the supply shut-off valve and rotate until water supply is off.

**Step 2: Removing the Faceplate and Adjacent Components**

Using 1/8" Allen wrench, remove the five faceplate screws (15) from head (1) by turning counterclockwise. Remove the faceplate (5), nozzle (4) and retaining washer (6).

If the Equa-Balance® seal was not the reason for service – skip to step 4.

**Step 3: Replacing the Equa-Balance® Seal**

Remove the current Equa-Balance® seal (10). Check seal for damage (punctures, rips, etc.). Replace damaged seal with a new seal (10) observing proper orientation (EQUA-BALANCE® SEAL SHOULD CUP INWARD IN ITS REPLACED STATE.)

**Step 4: Removing the Operating Coupling**

The operating coupling (9) can be removed by gripping the 5/16" square end of the operating coupling (9) with a pair of pliers and gently (being careful not to damage the O-Ring) pulling straight out until the coupling (9) breaks free from the operating tube (13).

If the operating coupling, O-Ring and the air relief orifice O-Ring were not the reason for service – skip to step 6.

**Step 5: Replacing the Operating Coupling O-Ring and the Air Relief Orifice O-Ring**

Slip the old O-Ring (8) off, and replace with new O-Ring (8). Remove the old air relief orifice O-Ring (7) and replace with new air relief orifice O-Ring (7).

If the cartridge and operating tube assemblies were not the reason for service – skip to step 8.

**Step 6: Removing the Cartridge and Operating Tube Assemblies**

Insert the 17 mm cartridge wrench (20) into the hydrant, and over the operating tube (13) until it stops, then with gentle forward pressure, turn the cartridge wrench (20) clockwise until it engages the hex portion of the cartridge assembly (14). Then rotate cartridge wrench (20) counterclockwise, unscrewing the cartridge assembly (14) until the cartridge assembly (14) is free from the housing (2). Remove the cartridge wrench (20) with the cartridge and operating tube assemblies (13-14). **IMPORTANT:** Ensure that the entire cartridge assembly is removed and that the housing seating area is free of debris.

**Step 7: Installing Cartridge and Operating Tube Assemblies**

Place the cartridge and operating tube assemblies (13-14) into the cartridge wrench (20) so that the operating tube (13) is inside of the cartridge wrench (20), and is engaged on the hex portion of the cartridge assembly (14). Insert the cartridge wrench (20) with the cartridge and operating tube assemblies (13-14) into the hydrant until making contact with the housing (2), then rotate the cartridge wrench (20) clockwise screwing the cartridge assembly (14) in until it stops, then torque to 15 ft/lbs. (Make sure that the cartridge assembly is in the off position.)

**Step 8: Installing the Operating Coupling and Retaining Washer**

Orient the operating coupling (9) so that the air relief orifice is in the uppermost position. Press the operating coupling (9) firmly into the head (1) and the operating tube (13). (**Note:** Lubricate the operating coupling O-Ring (8) with Lubriplate FGL-2 if needed.) Insert the retaining washer (6) onto the operating coupling (9) ensuring that the guide pin fits into the operating coupling (9) groove properly and that the air relief orifice is aligned with the operating coupling (9) air relief orifice. (If necessary, lubricate lightly between the operating coupling (9) and retaining washer (6) with Lubriplate FGL-2 for smoother operation.)

**Step 9: Replacing the Faceplate**

Insert nozzle (4) into place and fasten the faceplate (5) to head (1) using the 1/8" Allen wrench and the five faceplate screws (15). Rotate the screws clockwise until screws are snugged tight. (By hand only!)

**Step 10: Turning On the Water Supply**

Locate the water supply shut-off valve and rotate until water supply is on.

Z1321 Ecolotrol Wall Hydrant with Ceramic Disc – 3/4" Hose Connection				
Static Pressure (psi)	Running Inlet Pressure (psi)	Running Outlet Pressure (psi)	Flow Rate (gpm)	Pressure Drop Across Unit (psi)
10	6.1	0.0	2.6	6.0
20	14.9	0.0	4.3	14.9
30	24.3	0.5	5.6	23.8
40	33.2	0.9	6.5	32.3
50	42.3	1.4	7.3	40.9
60	49.7	1.7	7.9	48.0
70	62.1	2.3	8.8	59.8
80	70.6	2.7	9.3	67.9
90	78.7	3.1	9.8	75.7

