

# SIGELOCK

SYSTEMS, LLC

Saving water, saving costs, saving lives.

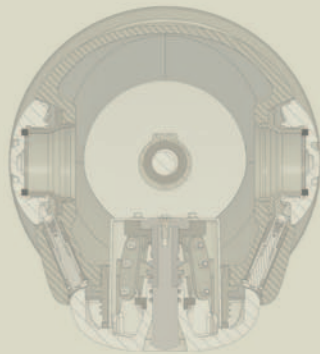


The worlds most secure fire hydrant.



# Security

Saving water, saving costs, saving lives.



The Sigelock SPARTAN hydrant achieves the toughest objectives facing water authorities and fire departments in the 21st century: reliability, water conservation, personnel safety, and water supply security.

The first significant new hydrant design in more than a century, the patented Sigelock SPARTAN features rugged ductile iron and stainless steel construction that withstands the toughest environments and promotes homeland security. Its nozzles, outlets, and operating nut are completely encapsulated.

Unauthorized access is prevented because its internal ergonomic locking clamshell mechanism clamps down tighter as unauthorized individuals attempt to break into it or force it open. This unprecedented protection is a primary line of defense against those seeking unlawful water usages, as well as against potential terrorist threats.

Due to its secure locking system, the Sigelock SPARTAN virtually guarantees that proper water pressure will be available at all times...for firefighting... and for public usage. Conceived and built in the USA, the Sigelock SPARTAN's unique design also provides excellent cost efficiencies for installation, operation and maintenance.

## About the inventor:

The Sigelock hydrant was designed and developed by George Sigelakis. A veteran New York City firefighter, George recognized the need to improve the reliability, security and safety of fire hydrants for all authorized personnel, authorities and communities. The Sigelock SPARTAN hydrant is the result of over 15 years of dedicated research and development.



**George Sigelakis**

# Safety



## ULTIMATE RELIABILITY

The Sigelock SPARTAN hydrant is an excellent conduit for safe, uninterrupted and timely water delivery. It ensures the highest degree of hydrant capability for emergency firefighting use. Its readiness at all times stems from its design. Since it cannot be forced open, no foreign objects such as glass, nails, cans, rags or other debris can accumulate. The caps cannot be stolen, damaged or destroyed; therefore, the hydrant is not exposed to situations that could prove deadly in the event of a fire. Also, the water supply is not subject to potential contamination through the hydrant. The Sigelock SPARTAN:

- Can be opened in less than five seconds, dramatically quicker than today's unreliable hydrants. Thus, providing water to the fire sources faster to accelerate emergency response time.
- Maintains optimal water pressure; Open hydrants, which can cause sudden fluctuations in water pressure and compromise fire suppression, are eliminated.
- Virtually eliminates the incidence of frozen internal hydrant mechanisms, which can render hydrants inoperable for firefighting.



## WATER CONSERVATION

Conserving Earth's greatest natural resource is a priority around the globe due to periodic shortages, over development, and skyrocketing costs. The Sigelock SPARTAN hydrant ties in perfectly with water conservation programs. The Sigelock system patented security features dramatically reduce or eliminate the unauthorized use and the outright theft of water. Optimal water supply is assured, even in the most demanding months, by allowing only authorized personnel to tap into the water supply with the use of the optional Sigelock Sprinkler Cap System.

# SIGELOCK: Visionary design to benefit water authorities, fire departments and the public they serve.



## PERSONNEL SAFETY

Ensuring the safety of firefighters, water authority personnel, first responders and the public is of utmost concern. Illegally opened hydrants endanger children playing in the streets, motorists, as well as residents. The Sigelock SPARTAN hydrant facilitates effortless opening with the easy to use Sigelock opening tool. This minimizes the chances of firefighters being injured on job. Further, the increased assurance and accessibility provided by the Sigelock SPARTAN means decreased risk for all.



## SECURITY

We live in a world filled with uncertainties. The Sigelock SPARTAN hydrant is the ultimate deterrent, making our water supply less vulnerable to tampering. Because its locking clamshell effectively prevents unauthorized usage, the Sigelock SPARTAN is extremely difficult to disable or sabotage and offers the highest degree of security. It safeguards water supplies against contamination, potential terrorist acts, and vandalism.





## COST SAVINGS

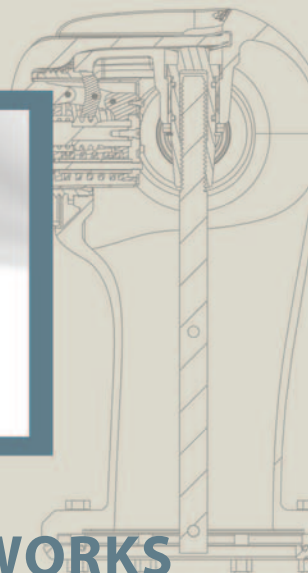
The need to control costs while still delivering excellent services is a situation that confronts most municipalities and water authorities. The Sigelock SPARTAN hydrant offers significant cost control and savings in a number of ways:

- Virtually maintenance free
- High quality, non-corrosive, precision made parts built to last
- Damaged water outlets, stripped operating nuts, missing caps and gaskets are no longer an issue
- Significantly decreases the disturbance and digging up of streets and sidewalks
- Retrofitting is possible with virtually all existing hydrant types and water supply systems



## MAINTENANCE

Due to its ergonomic design and patented locking clamshell technology, the Sigelock SPARTAN hydrant is significantly more efficient than other hydrants. Unlike today's hydrants, the Sigelock SPARTAN is impervious to its environmental elements; it has no vulnerable parts that need replacing, and requires minimal maintenance. Therefore routine hydrant inspections, including oiling, greasing and flushing, can be performed by authorized personnel with greater efficiency.



## HOW THE SIGELOCK "SPARTAN" WORKS

The patented Sigelock SPARTAN hydrant represents a leap forward in design innovation. The Sigelock SPARTAN is simple and streamlined in nature. It can be installed, retrofitted and deployed with great ease, and requires no more expertise to do so than any other hydrant.

The Sigelock SPARTAN is a self-contained assembly that leaves nothing exposed. The pumper and hose nozzles, as well as the operating nut, are completely shielded behind a ductile iron and stainless steel "clamshell". This patented device locks the hydrant and causes it to clamp tighter as unauthorized entry is attempted.

The hydrant easily opens with a specially designed opening tool. The Sigelock opening tool enables authorized personnel to exert some 3,000 pounds of force and unlock the hydrant in less than five seconds. The function of the opening tool is to disengage the pumper nozzle cap until water or fire personnel are concluded with hydrant use. The opening tool can only be retrieved after the hydrant is re-secured by replacing the pumper cap and disengaging the tool.

The hose nozzle caps become unlocked and can be disengaged when the pumper cap is removed. A ratcheting mechanism allows the hose caps to be re-secured in seconds when the hydrant is no longer in use. This revolutionary concept has never been used before in this application and its functionality is unsurpassed.

Innovative in design and simple to use, the Sigelock SPARTAN provides true reliability and benefits water authorities, fire departments and the public they serve. The fire hydrant is the lifeline to the firefighter and the public they safeguard, without it; property loss and loss of life are inevitable.

# REDESIGNED MAIN VALVE ASSEMBLY



Most hydrants in use today operate with a main valve assembly that was developed over a hundred years ago. Sigelock Systems has redesigned the main valve assembly to tackle the most imperative issues with modern hydrant design: frozen hydrants, unstable valves and undermined topsoil.

All of the parts in the main valve assembly are constructed with the latest precision sand and investment casting techniques.

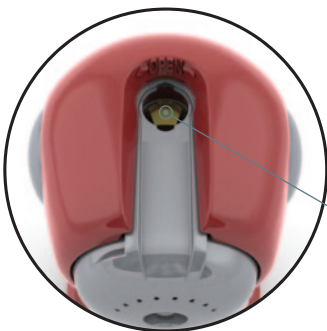
The upper valve plate utilizes a patented tri-arm configuration. When in use, this prevents the assembly from becoming unstable while in turbulent flow, keeping the components from becoming damaged.

The saturation plate is specifically designed to keep debris from obstructing drain flow by distributing drain water evenly around eight low profile outlets while encapsulating the drain rings channels. This works in conjunction with the drain ring, which employs four oblong shaped drain channels, to further deter roots from finding their way into the main valve assembly chamber.

By incorporating this main valve design into the Sigelock SPARTAN, inoperable hydrants that cause loss of property and loss of life will become a thing of the past.

# SIGELOCK SPRINKLER CAP SYSTEM

To satisfy urban demands in sweltering weather conditions, optional sprinkler caps can be activated and properly regulated, only by using the Sigelock sprinkler cap system and wrench. This averts hydrant tampering, prevents street flooding, and keeps control in the hands of designated personnel and authorities.



**Operating nut can be accessed only when authorized users unlock the Sigelock Sprinkler Cap**

# SIGELOCK SPARTAN

## FEATURES AND BENEFITS

Patented impenetrable clamshell design is of modern styling and has no protruding features

High strength ductile iron nozzle section highly resistant to physical abuse

Heavy duty bronze operating nut with Acme threads is stronger and more durable than V-threads

Anti-friction washers below the operating nut allow for ease of operation

Nozzle section can be easily detached from main valve assembly by removing snap ring and unthreading operating nut

Two stainless steel hose caps are secured with the ratcheting side locking mechanism

Fully enclosed side locking mechanism can only be disengaged when the pumper cap is removed



Eight zinc-plated steel bolts secure the nozzle section to the bury standpipe

Breakaway traffic flange and stainless steel safety coupling

Three specially positioned ears on the stainless steel pumper cap allow only the SIGELOCK opening tool to be secured to its face

Locking pin requires 3000 lbs of inward force to disengage locking mechanism

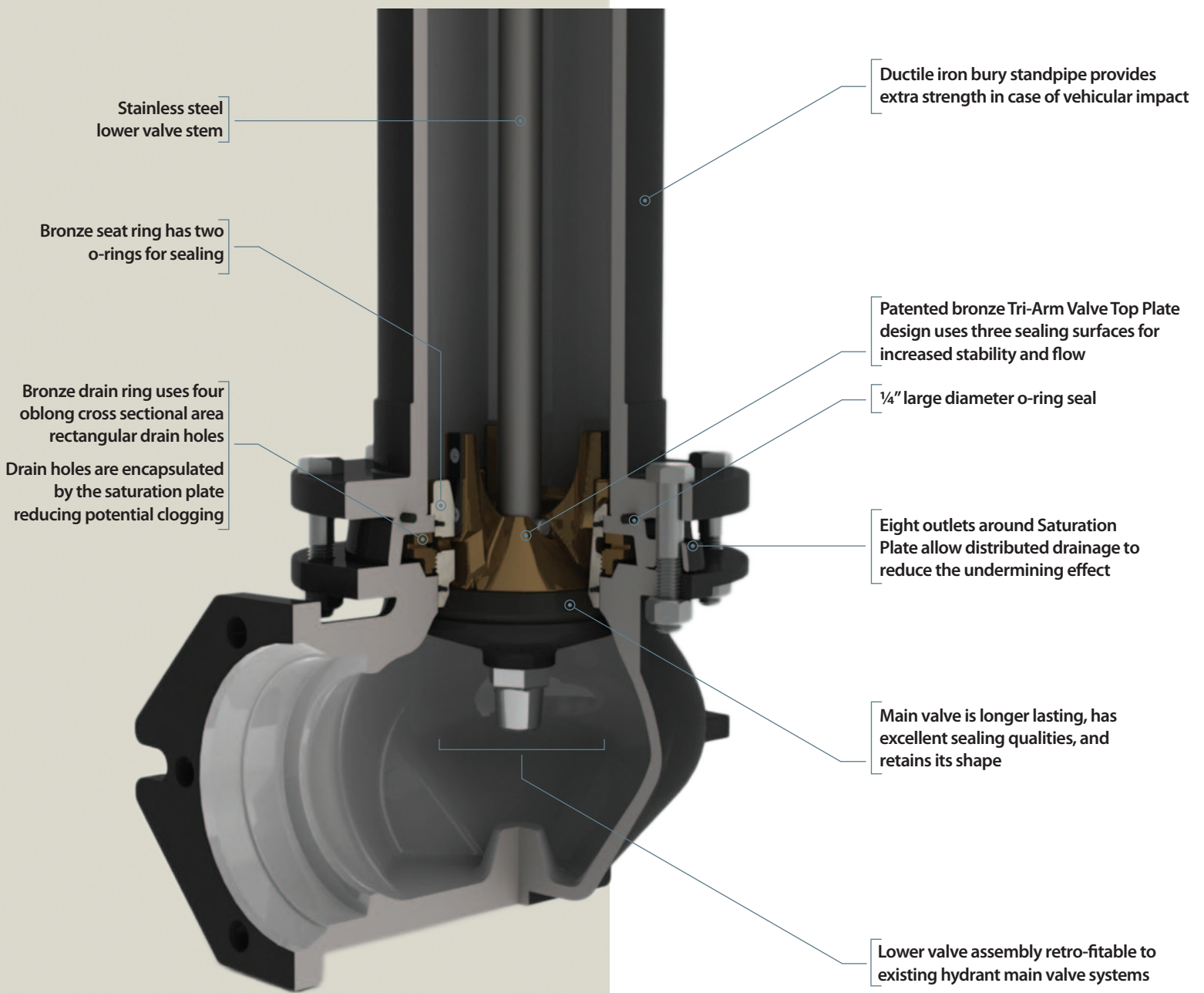
Stainless steel pumper and bronze hose nozzles are fully encapsulated by the pumper and hose caps

Flat bury pipe gasket allows for easy installation and a secure seal

No tools are required to remove safety coupling from upper and lower stems, simply remove the cotter key and pin



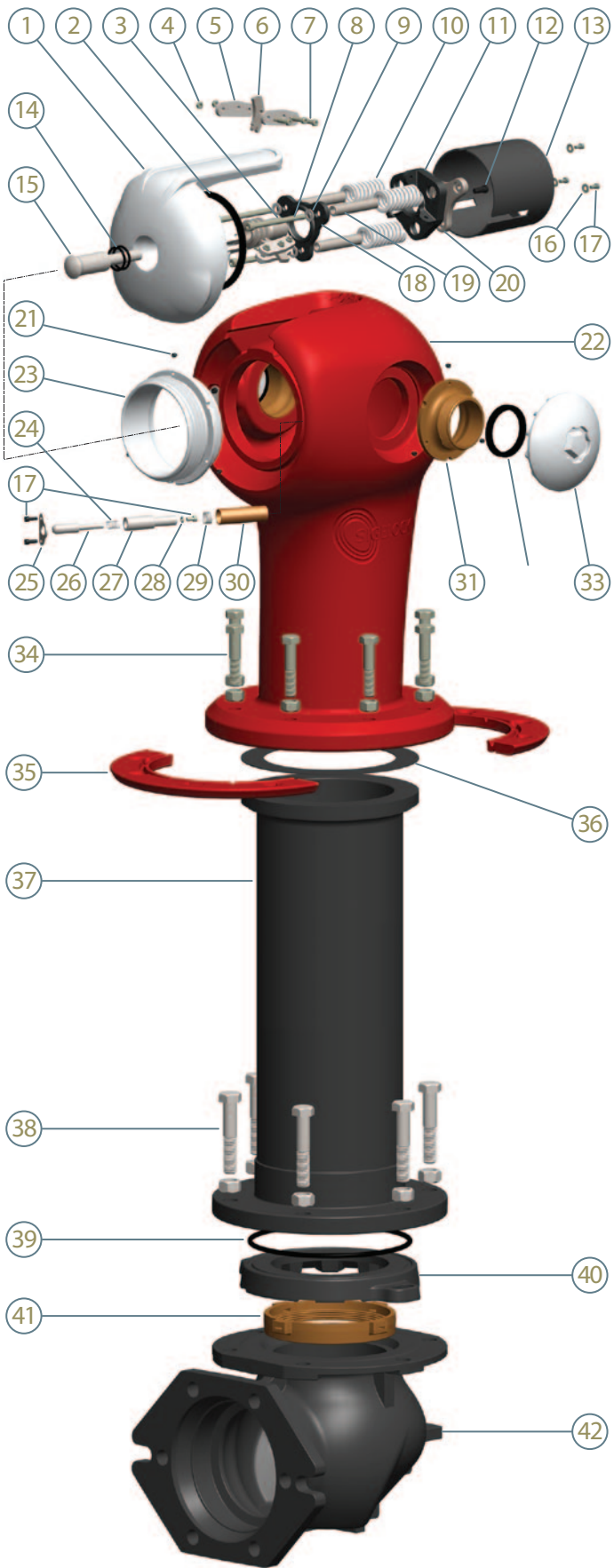




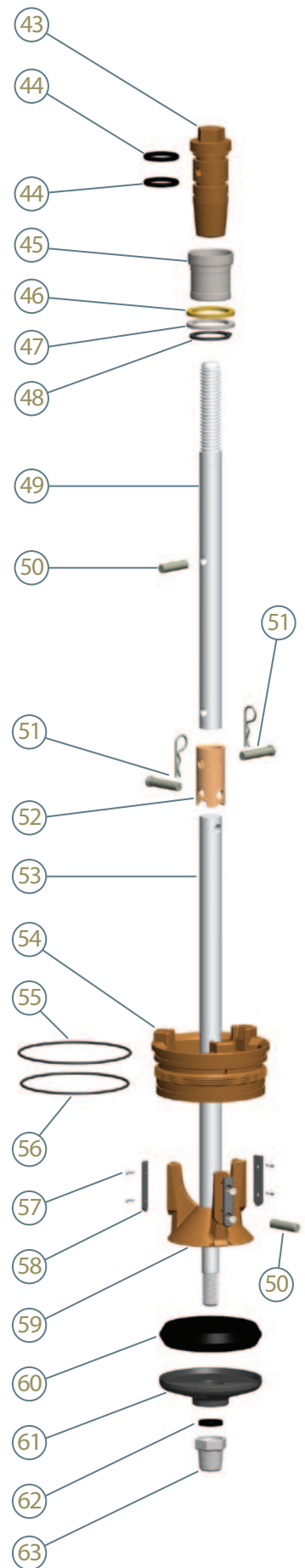
## CUSTOM SPECIFICATION

Hydrants shall successfully meet the latest revisions of ANSI/AWWA Standard C502.

- The main seat valve shall fit a 5 1/4" opening and not be less than 1" thick.
- The operating nut shall be a one piece design.
- All nuts and bolts below grade shall be 304 stainless steel.
- O-rings shall be the Quad-Ring® type.
- Stem threads shall be Acme type with no 60 degree V-threads allowed.
- Drains shall be bronze lined and a minimum .110 in<sup>2</sup> cross sectional area.
- The inlet/shoe shall be fusion bonded epoxy coated, per ANSI/AWWA C550, with an NSF61 approved coating.
- The inlet/shoe shall have ample blocking pads for sturdy setting.

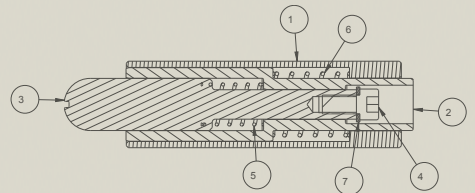


Item No.	QTY	Part Name / Description	Material
1	1	Pumper Nozzle Cap	Stn. Stl.
2	1	Pumper Nozzle Cap O-Ring	Buna-N
3	1	Actuator Gear	Stn. Stl.
4	9	Cam Flex-Top Locknuts	Stn. Stl.
5	6	Cam Arms	Al. Alloy
6	3	Cam Gears	Stn. Stl.
7	9	Cam Shoulder Bolts	Stn. Stl.
8	3	Cam 4" Socket Screws	Zn. Pl. Stl.
9	3	Cam Washers	Zn. Pl. Stl.
10	3	Die Springs	Cr. Alloy
11	1	Spring Top Plate	Al. Alloy
12	1	Actuator Pin Socket Screw	Bl. Ox. Stl.
13	1	Lock Cover	ABS
14	2	Actuator Pin O-Rings	Buna-N
15	1	Actuator Pin	Stn. Stl.
16	3	Lock Cover Washers	Zn. Pl. Stl.
17	7	Lk. Cover / Side Lk. Screws	Zn. Pl. Stl.
18	1	Spring Cap Plate	Al. Alloy
19	3	Spring Shafts	Al.
20	1	Spring Support	Stn. Stl.
21	9	Nozzle Set Screws	Bl. Fi. Stl.
22	1	Nozzle Housing	D. I.
23	1	Pumper Nozzle	Stn. Stl.
24	2	Side Lock Front Plungers	Stn. Stl.
25	2	Side Lock Cap Plates	Stn. Stl.
26	2	Side Lock Comp. Springs 1	Stn. Stl.
27	2	Side Lock Side Plungers	Stn. Stl.
28	2	Side Lock Washer	Stn. Stl.
29	2	Side Lock Comp. Springs 2	Stn. Stl.
30	2	Side Lock Sleeves	Si. Brz.
31	2	Hose Nozzles	Bronze
32	2	Hose Nozzle Cap O-rings	Buna-N
33	8	Hose Nozzle Caps	Buna-N
34	2	Safety Flange Bolts & Nuts	Zn. Pl. Stl.
35	1	Safety Flange	C. I.
36	1	Lower Standpipe Gasket	Buna-N
37	6	Lower Standpipe	D. I.
38	1	Inlet Flange Bolts & Nuts	Stn. Stl.
39	1	Inlet Flange O-Ring	Buna-N
40	1	Saturation Ring	C.I.
41	1	Drain Ring	Bronze
42	1	Inlet Elbow	C.I.
43	2	Operating Nut	Bronze
44	1	Operating Nut O-rings	Buna-N
45	1	Operating Nut Sleeve	Stn. Stl.
46	1	Low-Friction Thrust Washer 1	Bronze
47	1	Low-Friction Thrust Washer 2	Stn. Stl.
48	1	Operating Nut Retain-Ring	Stn. Stl.
49	2	Upper Operating Stem	Stn. Stl.
50	2	Stem Grooved Pins	Zn. Pl. Stl.
51	1	Coupling Pin & Cotter Keys	Zn. Pl. Stl.
52	1	Safety Coupling	Stn. Stl.
53	1	Lower Operating Stem	Stn. Stl.
54	1	Valve Seat Ring	Bronze
55	1	Valve Seat Ring O-ring (Top)	Buna-N
56	6	Valve Seat Ring O-ring (Bot)	Buna-N
57	3	Drain Valve Screws	Stn. Stl.
58	1	Drain Valve Facing	TBD
59	1	Tri-Arm Valve Top Plate	Bronze
60	1	Main Seat Valve	TBD
61	1	Valve Bottom Plate	C.I.
62	1	Bottom Plate Nut Seal	Buna-N
63	1	Bottom Plate Nut	Stn. Stl.



C.I. - Cast Iron  
D.I. - Ductile Iron

# SIGELOCK SYSTEMS...SECURING AND PRESERVING EARTH'S GREATEST RESOURCE FOR USE TODAY... AND TOMORROW.





**SIGELOCK SYSTEMS, LLC**

**New York Office:**

10 Bulaire Road  
East Rockaway, NY  
11518 USA

Tel: 1 . 888 . SIGELOCK  
1 . 888 . 744 . 3562

Fax: 1 . 888 . 671 . 0990

**Atlanta Office:**

8088 Revere Drive  
McDonough, GA  
30252 USA

Tel: 770 . 320 . 8102

Fax: 1 . 888 . 671 . 0990

[www.sigelock.com](http://www.sigelock.com)



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saving lives.**

