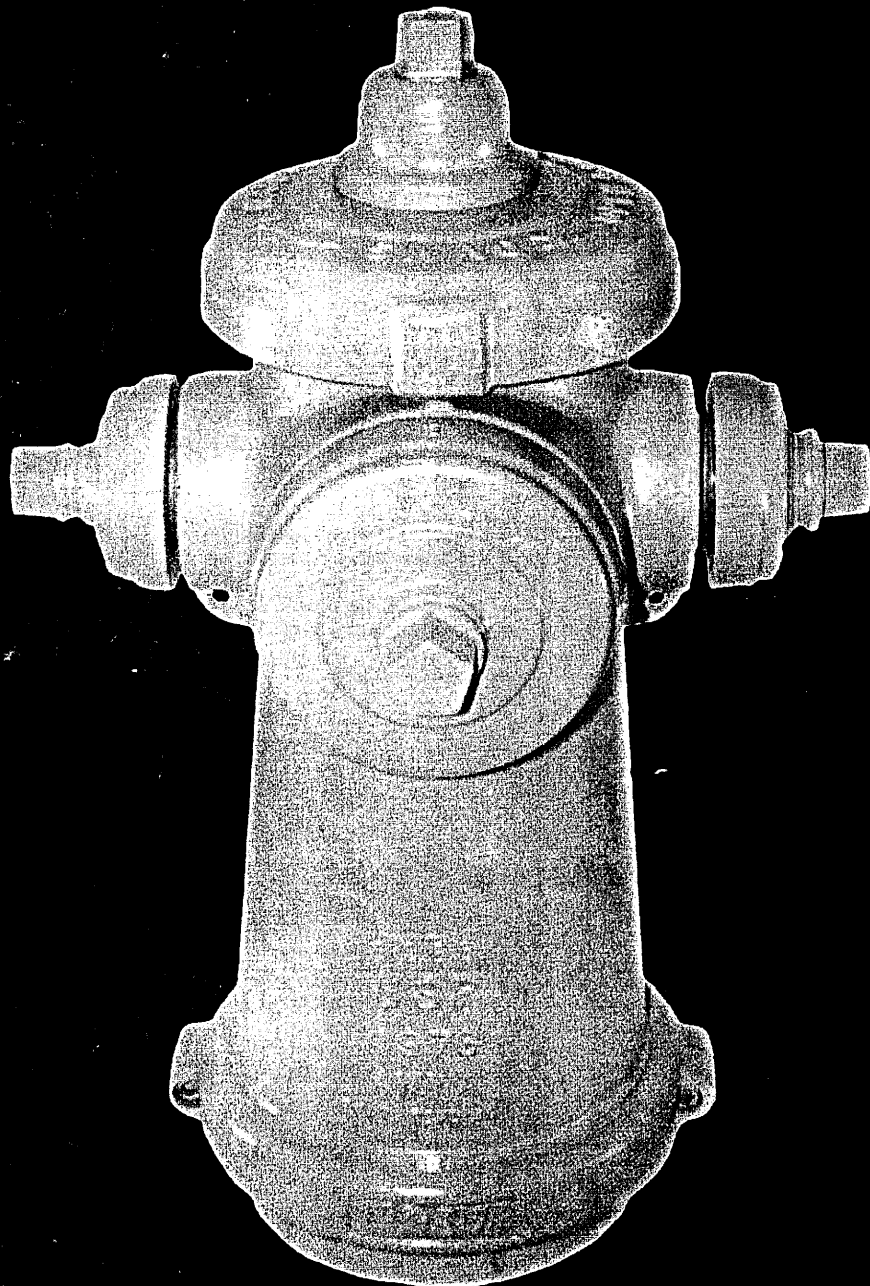


THE SENTINEL

A dry top, dry barrel fire hydrant
with a unique and superior design.



U.S. Pipe & Foundry Company



THE SENTINEL®

A truly new concept in fire hydrants: no bolts, no nuts, no flanges, compact upper barrel, oversize lower standpipe.

THE SENTINEL fulfills the primary function of a fire hydrant:

- to deliver required volume of water at adequate pressure
- to fight a fire
- to protect life and property

That's what a fire hydrant is all about!

THE SENTINEL is the fireman's strong and dependable partner. If a hydrant does not perform its primary function, it is a wasted investment.

It must be a strong, durable unit, resistant to damage by vehicle impact, simple and easy to maintain and repair. A hydrant must operate with a minimum of effort yet provide sufficient resistance in operating to prevent water hammer.

THE SENTINEL satisfies these requirements; in addition, it is a rugged, tamper-resistant hydrant with a pleasing low profile and compact appearance.

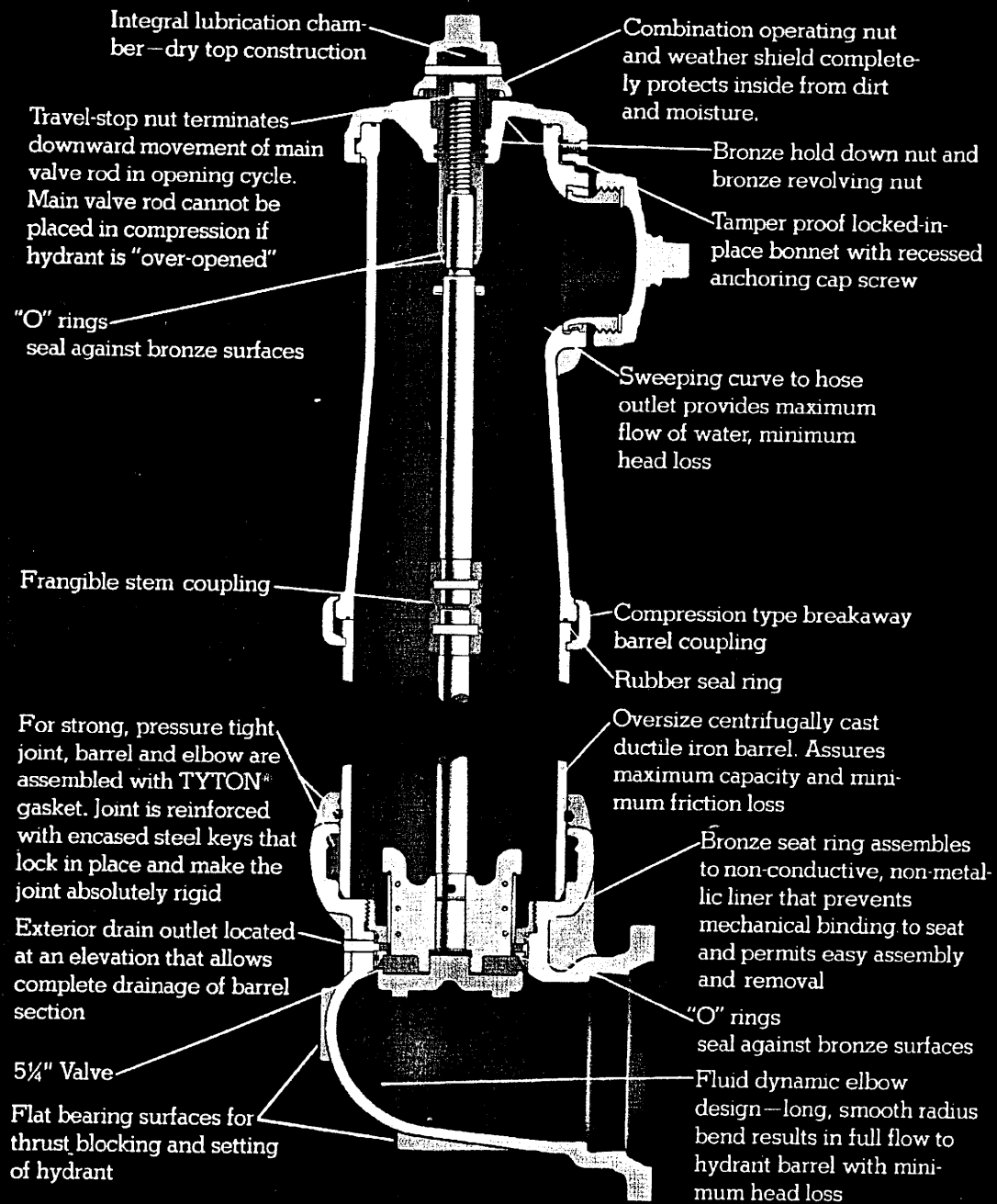
If you consider nuts and bolts as an inherent weakness, this hydrant has eliminated that weakness. There are no flanges either, cast on or screwed on. When exposed, bolts and nuts are subject to corrosion from the elements and from attack by chloride solutions splashed up from the streets following salt applications to melt ice and snow. Bonnet bolts and nuts are extremely difficult to remove after they have been

painted multiple times thru the years. Bolts and nuts buried underground, if not adequately protected, can become the victims of soil corrosion or electrolysis. For these reasons, THE SENTINEL design eliminates bolts and nuts.

We believe THE SENTINEL is more vandal-proof than any other hydrant. The locked-in-place bonnet, anchored securely by a recessed socket Allen cap screw, offers no obvious method of disassembly by prying or bolt and nut removal.

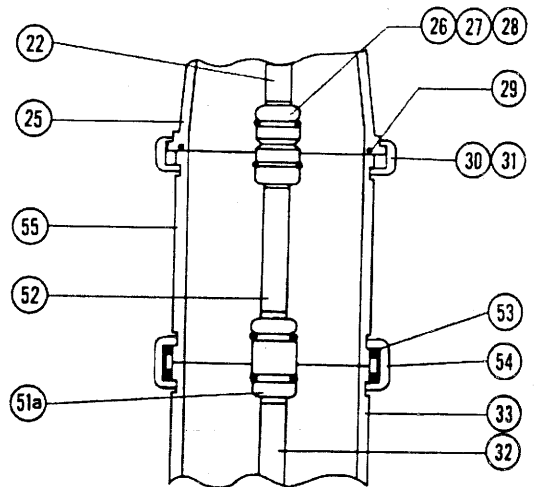
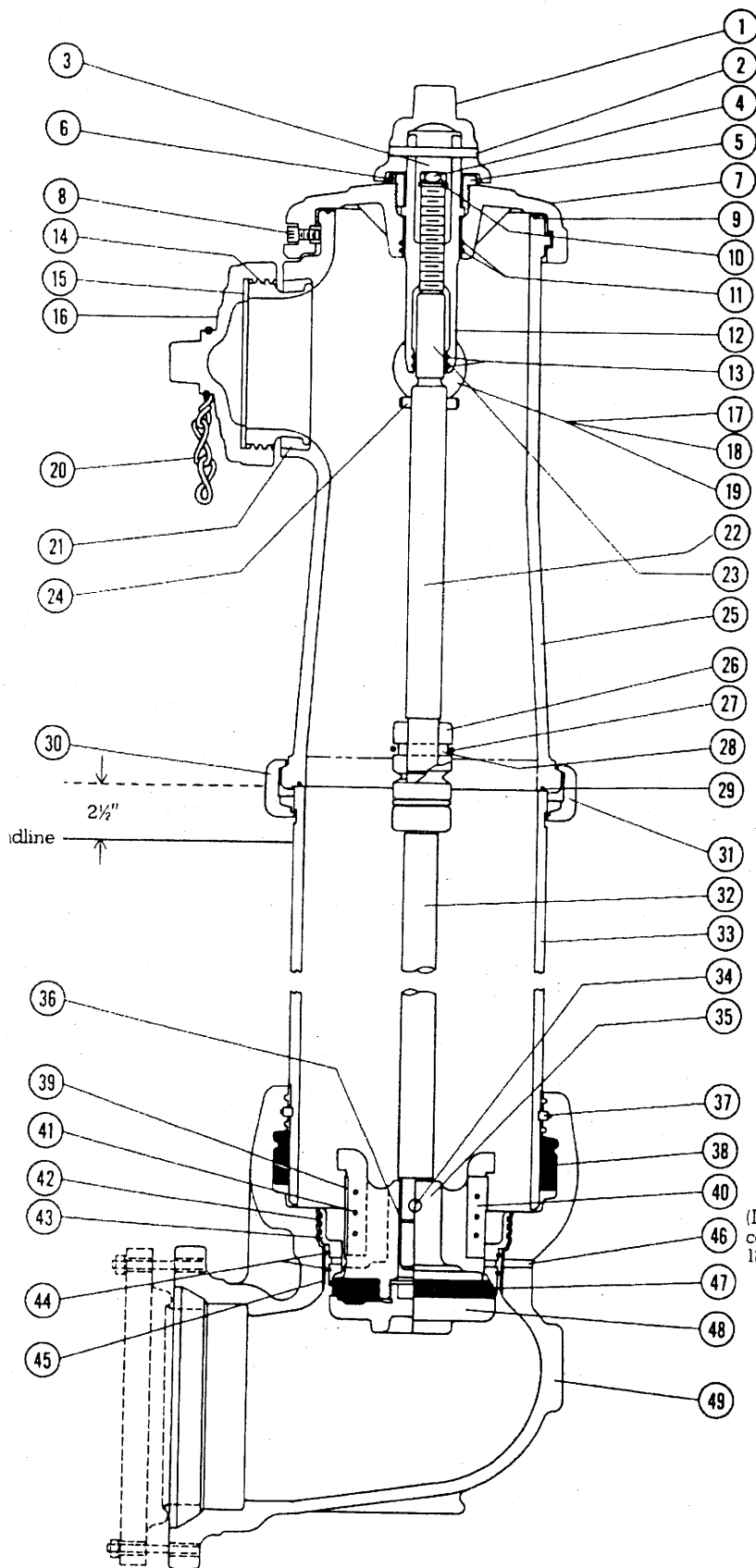
THE SENTINEL can be disassembled and placed back in service quickly and easily when repairs are necessary. The design of the breakaway barrel and stem couplings are similar to those used very successfully for many years in other types of U.S. Pipe-Smith hydrants.

As illustrated on the next page, THE SENTINEL has incorporated entirely new methods to assemble major components. The barrel has a full 8" inside diameter and is made from tough, centrifugally cast, impact-resistant, heavy wall Ductile Iron pipe. Big sweeping curves to hose outlets and a long smooth radius bend in the elbow will provide maximum flow of water at minimum head loss.



Note: Detailed engineering drawing and bill of material available upon written request.

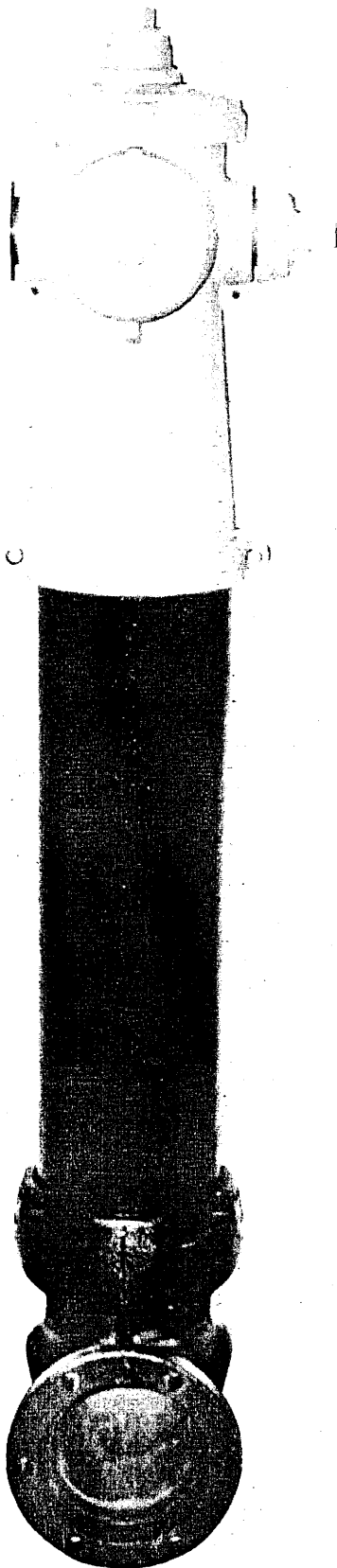
SENTINEL—SERIES J FIRE HYDRANTS



DETAIL OF EXTENSION SECTION

(Drain hole is shown 90° off center. There are 2 drain holes, 180° apart.)

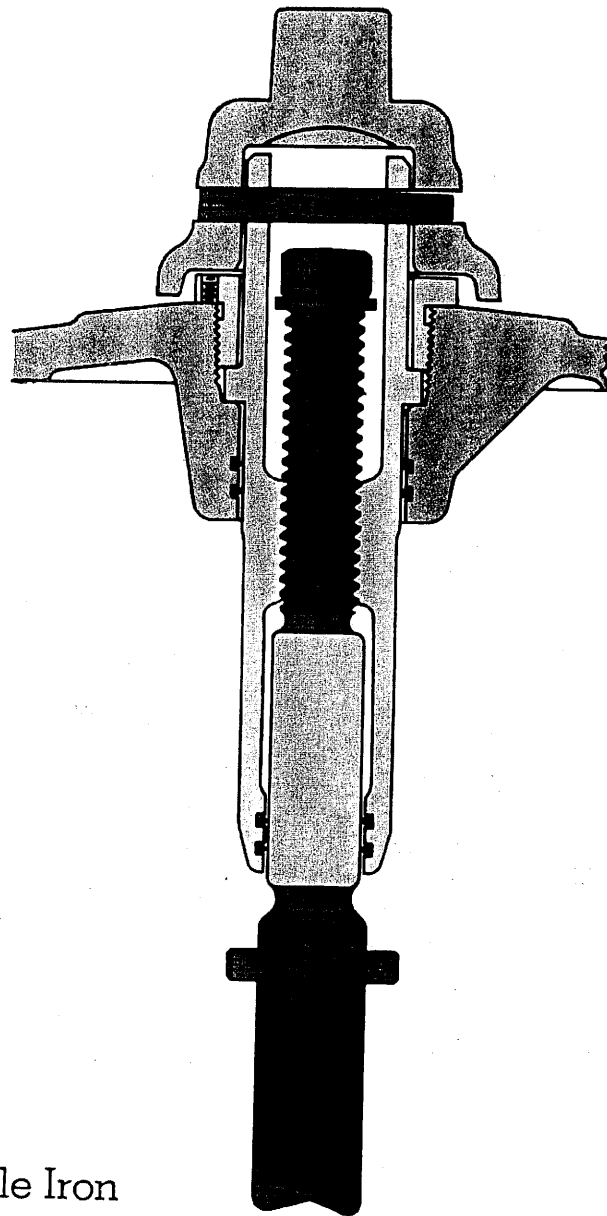
SENTINEL—SERIES J FIRE HYDRANTS PER AWWA C502



ITEM NO.	NAME OF PART	REQ. NO.	MATERIAL
1	OPERATING NUT	1	C.I. ASTM A126 CL.B
2	OPERATING NUT PIN	1	STEEL-RUST PROOFED
3	LUBRICANT CHAMBER		TEMP. -50°F TO +250°F
4	TRAVEL STOP NUT	1	STEEL-ASTM A307 GR.B
5	HOLD DOWN NUT	1	BRONZE ASTM B-62
6	HOLD DOWN NUT SCREW	1	STEEL-RUST PROOFED
7	BONNET	1	C.I. ASTM A126 CL.B
8	BONNET LOCKING SCREW	1	STEEL-RUST PROOFED
9	BONNET SEAL	1	RBR. BUNA-N 70±5
10	TRAVEL STOP WASHER	1	STEEL-LOW CARBON
11	SEAL PLATE O-RINGS	2	RBR. BUNA-N 70±5
12	REVOLVING NUT	1	BRONZE-CDA864
13	INNER REVOLVING NUT O-RINGS	2	RBR. BUNA-N 70±5
14	PUMPER NOZZLE	1	BRONZE ASTM B-62
15	PUMPER NOZZLE CAP GASKET	1	RBR. BUNA-S60-70DURO
16	PUMPER NOZZLE CAP	1	C.I. ASTM A126 CL.B
17	HOSE NOZZLE	2	BRONZE ASTM B-62
18	HOSE NOZZLE CAP GASKET	2	RBR. BUNA-S60-70DURO
19	HOSE NOZZLE CAP	2	C.I. ASTM A126 CL.B
20	CHAIN ASSEMBLY	1	STEEL-RUST PROOFED
21	LEAD-CAULKING		FED. SPEC. QQC40
22	VALVE ROD UPPER SECTION	1	STEEL-ASTM A575
23	SHEATH (PART OF ITEM 22)	1	BRASS
24	VALVE ROD PIN-SHEAR PROOF	1	STEEL-RUST PROOFED
25	STANDPIPE-UPPER SECTION	1	C.I. ASTM A126 CL.B
26	VALVE ROD COUPLING	1	C.I. ASTM A126 CL.B
27	COUPLING RETAINING RINGS	2	STN. STL. TYPE 18-8
28	VALVE ROD COUPLING PINS	2	BRONZE ASTM B-21
29	STANDPIPE COUPLING SEAL	1	RBR. BUNA-N 70±5
30	STANDPIPE COUPLING	1	C.I. ASTM A126 CL.B
31	STANDPIPE COUPLING SCREWS	2	STEEL-RUST PROOFED
32	VALVE ROD LOWER SECTION	1	STEEL-ASTM A575
33	STANDPIPE-LOWER SECTION	1	D.I. USA STD A21.51
34	TOP PLATE PIN-SHEAR PROOF	1	STEEL-RUST PROOFED
35	VALVE TOP PLATE	1	D.I. ASTM A536, 70-50-05
36	VALVE ROD LOWER O-RING	1	RBR. BUNA-N 70±5
37	ELBOW LOCKING KEY	4	STN. STL. TYPE 18-8
38	TYTON® GASKET	1	RUBBER
39	DRAIN VALVE FACING	2	RBR. BUNA-S 95DURO
40	GUIDE PLATE	2	STN. STL. TYPE 18-8
41	DRAIN VALVE SCREWS	6	STAINLESS STEEL
42	ELBOW THREAD PROTECTOR	1	ACRYLIC COPOLYMER
43	SEAT RING	1	BRONZE ASTM B-62
44	SEAT RING O-RINGS	2	RBR. BUNA-N 70±5
45	ELBOW BUSHING (PART OF #49)	1	BRONZE ASTM A-135
46	ELBOW DRAIN HOLE LINER	2	PLASTIC-BUTYRATE
47	MAIN VALVE	1	RUBBER, 93±5 DURO
48	VALVE BOTTOM PLATE	1	D.I. ASTM A536
49	ELBOW (SPECIFY TYPE)	1	C.I. ASTM A126 CL.B
50	MJ ACC. PKG. (WHEN REQUIRED)	1	AWWA C111 SPEC.
51a	ROD COUPLING NON-FRANGIBLE ASS'Y.	1	C.I. ASTM A126 CL.B
52	ROD EXT. (SPECIFY LENGTH)	1	STEEL ASTM A575
53	EXT. GASKET	1	RUBBER
54	STP. COUPLING NON-FRANGIBLE WITH SCREWS	1	C.I. ASTM A126 CL.B
55	STP. EXTENSION (SPECIFY LENGTH)	1	D.I. USA STD A21.51

CUTAWAY DRAWING OF SENTINEL HYDRANT REVOLVING NUT AND UPPER MAIN ROD.

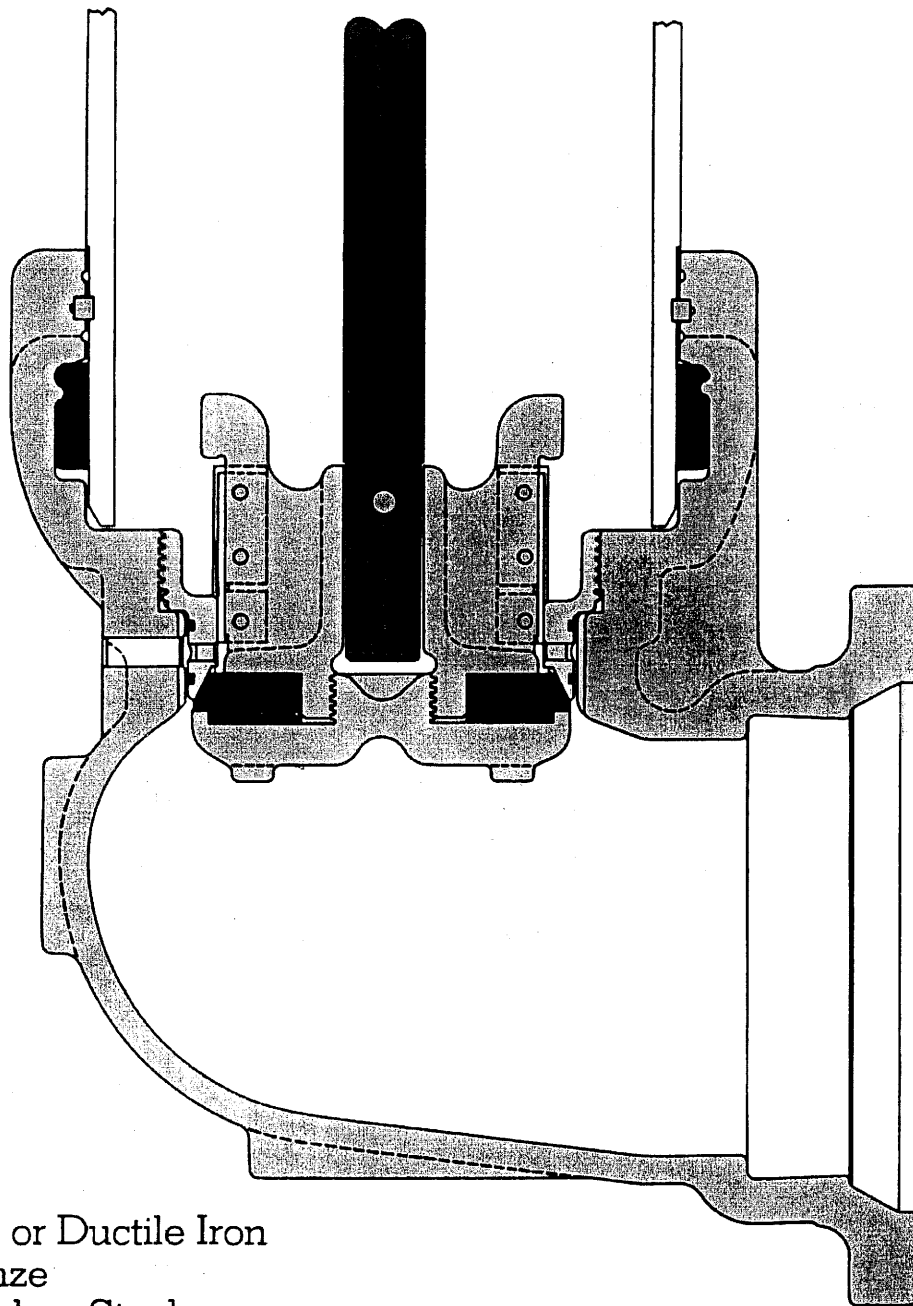
A dynamic "O" ring application is employed to provide a tight seal between the hydrant upper rod and the inside of the revolving nut. Water under pressure must be prevented from entering the lubrication chamber above this seal. Surfaces against which the moving "O" rings bear must be smooth and non-corrodible. The revolving nut is bronze and the upper stem below the threads is bronze sheathed.








Cast or Ductile Iron
Bronze
Steel

CUTAWAY DRAWING OF SENTINEL HYDRANT MAIN VALVE ASSEMBLY.

A dynamic "O" ring application is employed to provide a seal for the two "O" rings between the seat ring and the elbow bushing. The surfaces that engage the moving "O" rings when the seat ring and main valve assembly is removed must be smooth and non-corrodible. The seat ring is made of bronze and the bushing is made of bronze to provide the required protection.

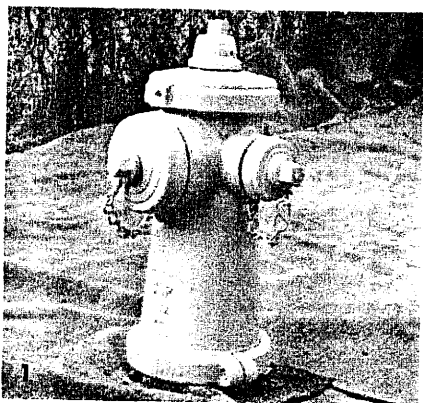


-  Cast or Ductile Iron
-  Bronze
-  Stainless Steel
-  Steel
-  Co-Polymer Acrylic Liner

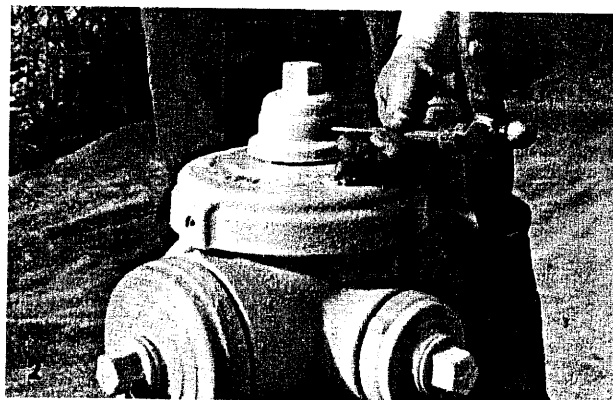
U.S. PIPE—SENTINEL—SERIES J FIRE HYDRANTS

MAINTENANCE & REPAIR One man using the wrenches illustrated on the back cover plus standard small tools, can, without excavating, quickly and easily remove the entire internal operating parts of the hydrant as a unit regardless of depth of bury. All parts are removed thru the standpipe.

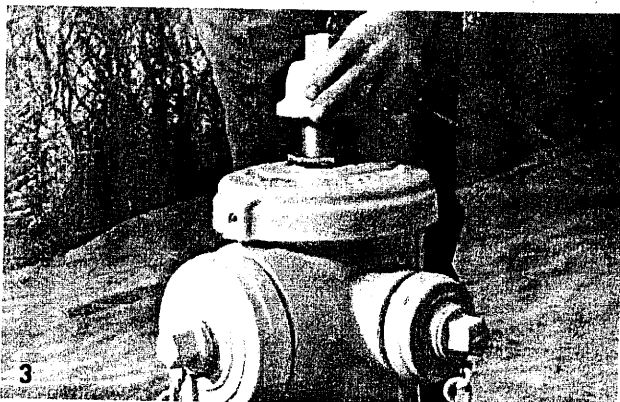
CLOSE AUXILIARY GATE VALVE—Proceed as follows:



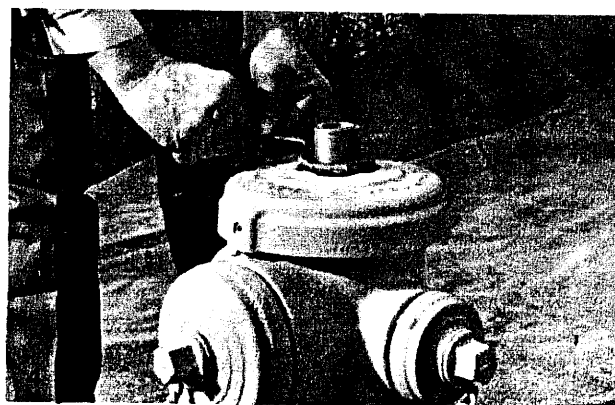
Remove one hose cap. Open hydrant 2 full turns to relieve pressure on hydrant.



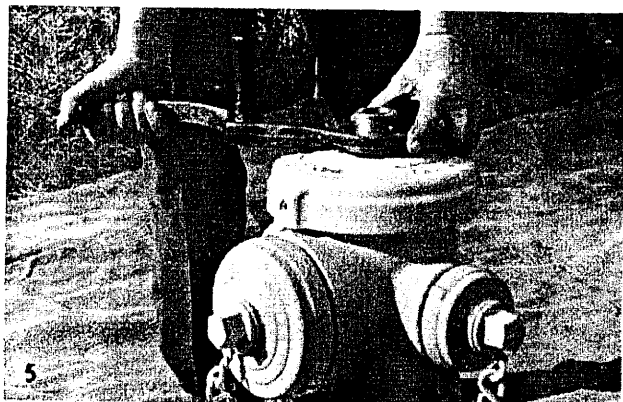
Drive out groove pin (Part #2) to free operating nut (Part #1).



Remove combination weathershield/operating nut (Part #1).



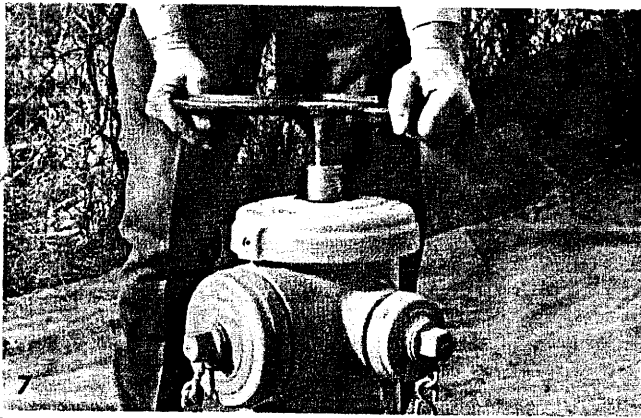
Using small Allen wrench loosen set screw (Part #6) on hold down nut (Part #5).



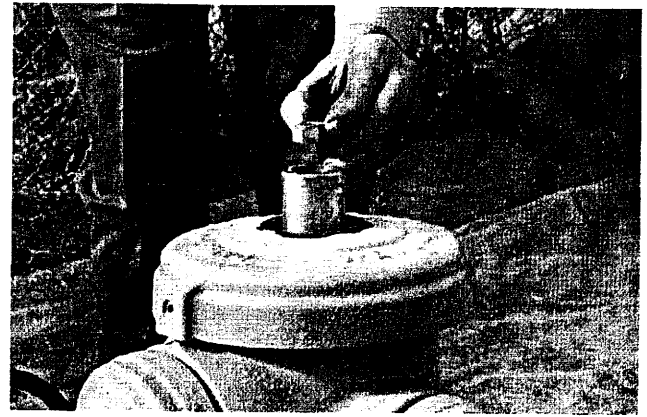
Using utility wrench box end loosen hold down nut (Part #5).



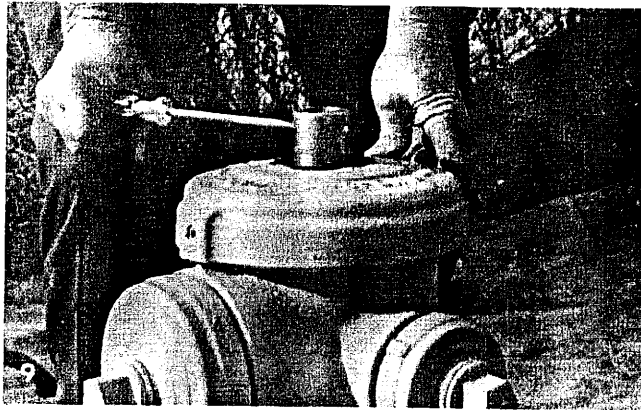
Remove hold down nut (Part #5).



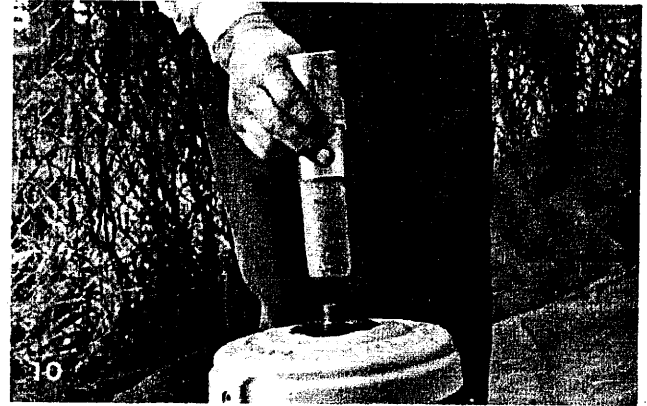
Using socket on utility wrench loosen travel stop nut (Part #4).



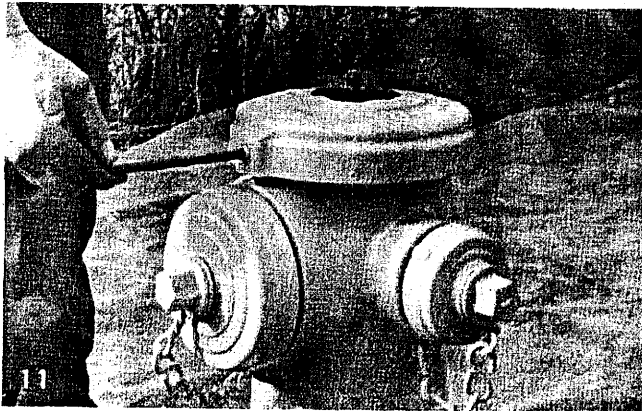
Remove travel stop nut (Part #4) and washer (Part #10).



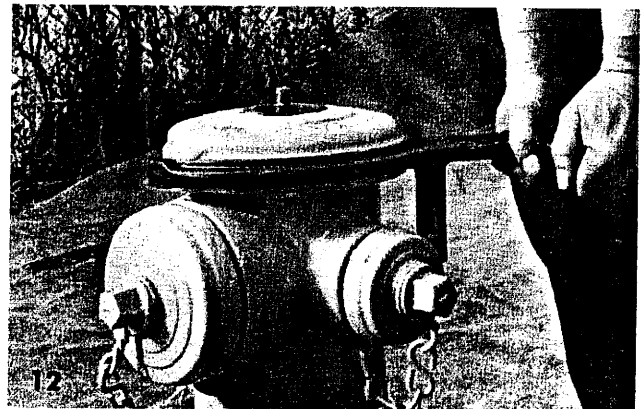
Using screwdriver as a pin loosen revolving nut (Part #12).
(Turn same as opening direction of hydrant.)



Remove revolving nut (Part #12).



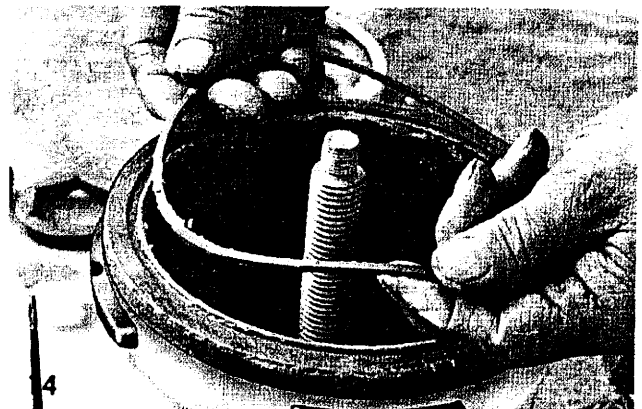
Using Allen wrench loosen and remove bonnet locking set screw (Part #8).



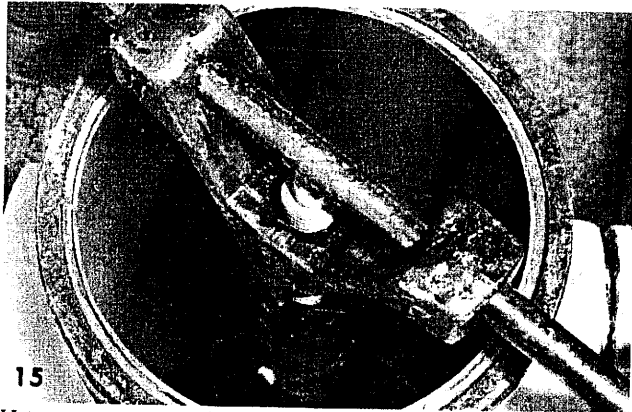
Using spanner end of utility wrench turn bonnet (Part #7)
22½° counterclockwise.



Remove bonnet (Part #7).

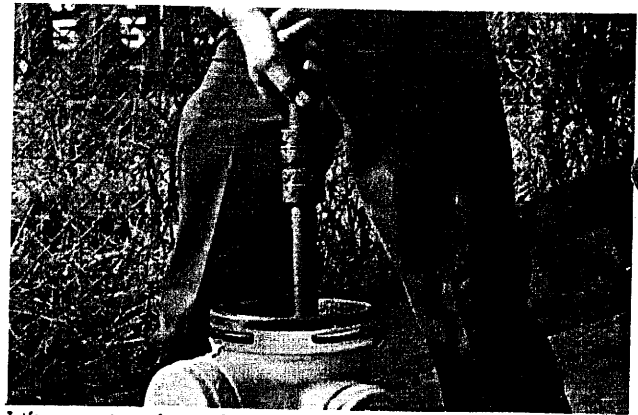


Remove square sealing gasket (Part #9).

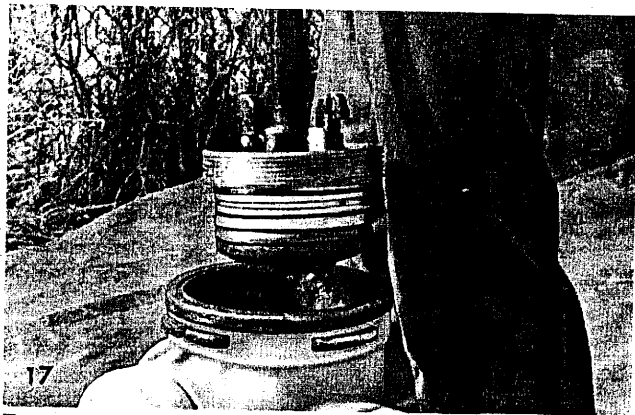


15

Using seat removal wrench loosen main valve rod assembly as a unit.

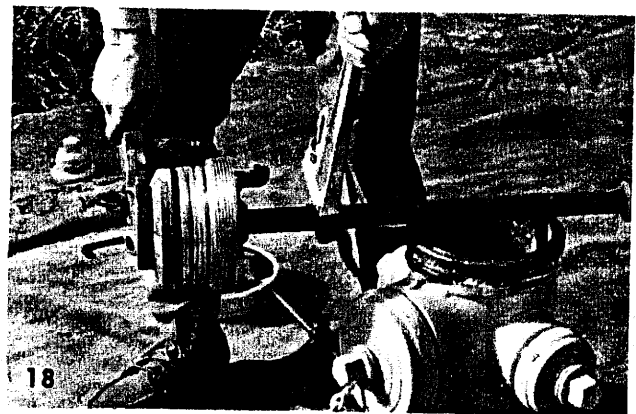


Lift up main valve rod assembly using Part #22.



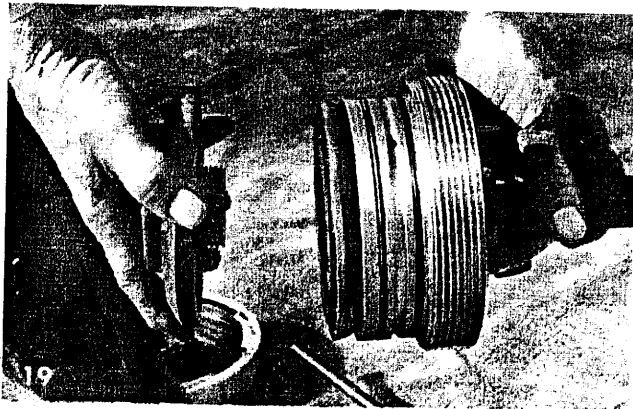
17

Remove main rod and valve assembly as a unit.



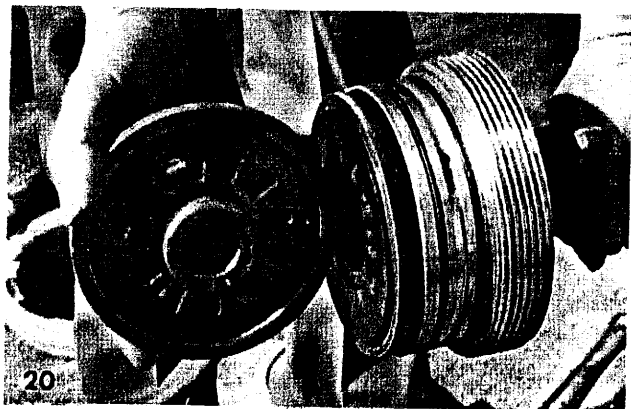
18

Using a pipe wrench and socket end of utility wrench loosen bottom valve plate (Part #48).



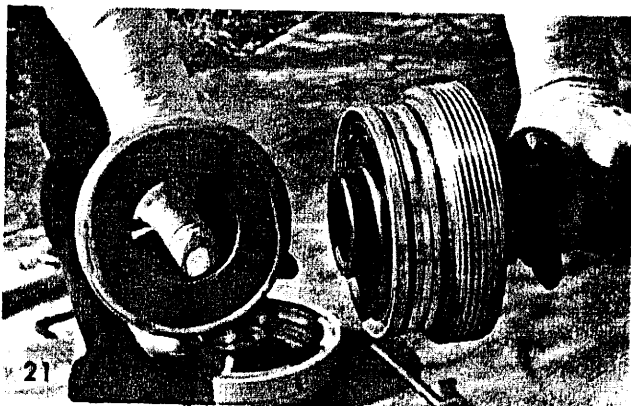
19

Unscrew bottom valve plate (Part #48).



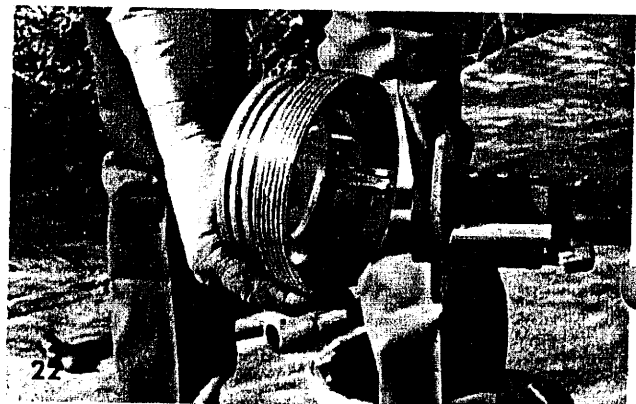
20

Examine main valve assembly.



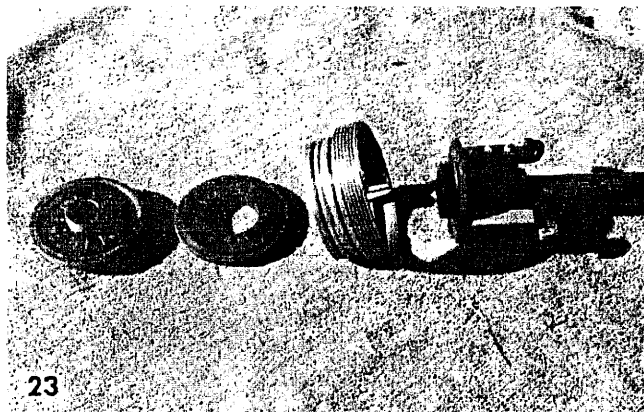
21

Examine hydrant valve (Part #47).

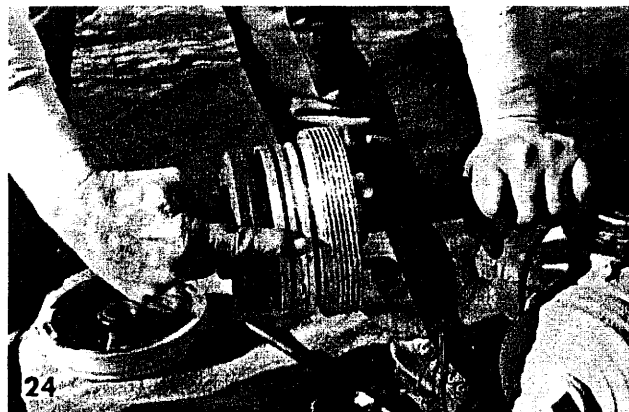


22

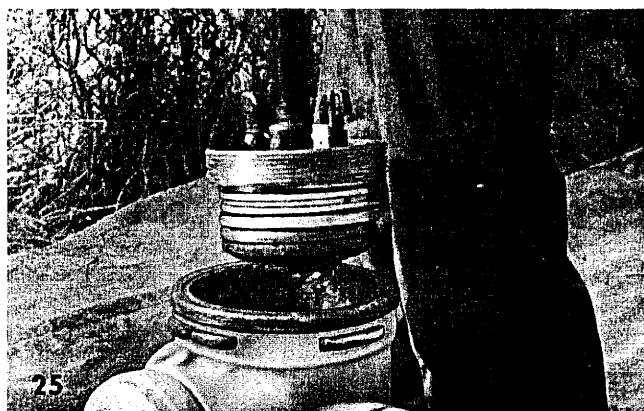
Remove seat ring (Part #43) from upper valve (Part #35).



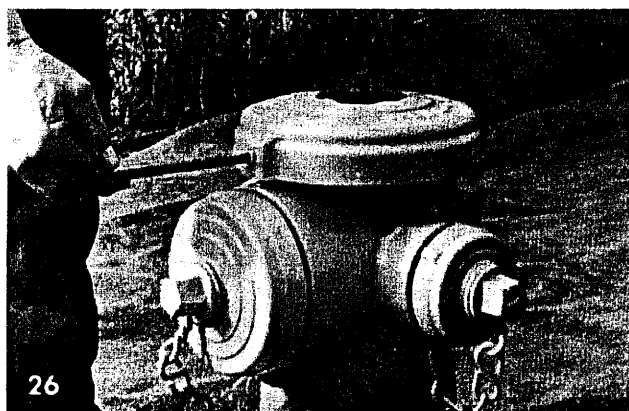
23
Lay out component parts – main valve assembly. Replace any damaged components.



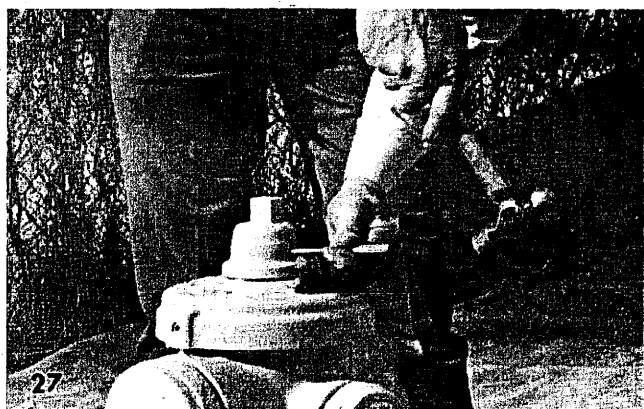
24
Reassemble components and lubricate seat ring threads and "O" rings with water soluble lubricant.



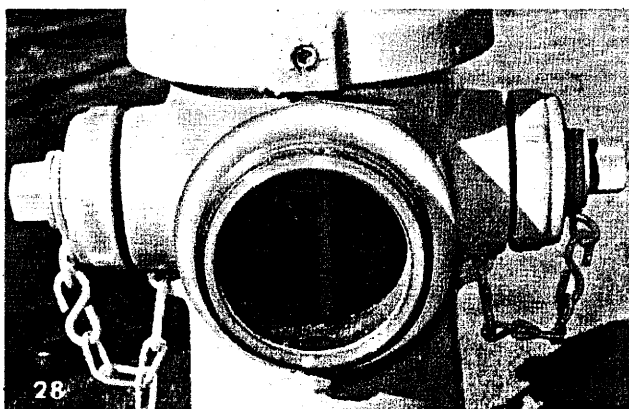
25
Lower main rod assembly into hydrant and tighten with seat removal wrench. At this point, pull up rod and open auxiliary valve and check for leaks between valve and seat ring.



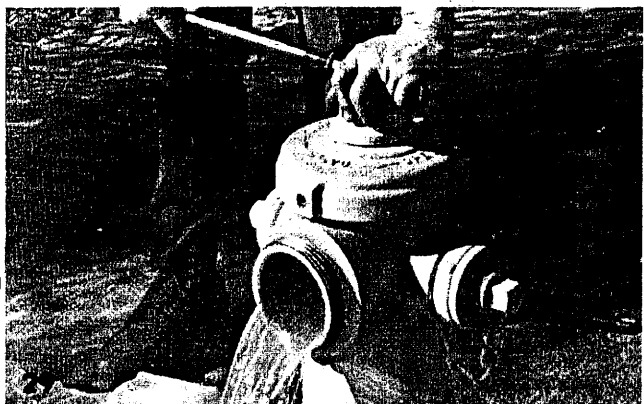
26
Replace gasket seal (Part #9) and bonnet (Part #7). Turn clockwise into position. Tighten set screw (Part #8).



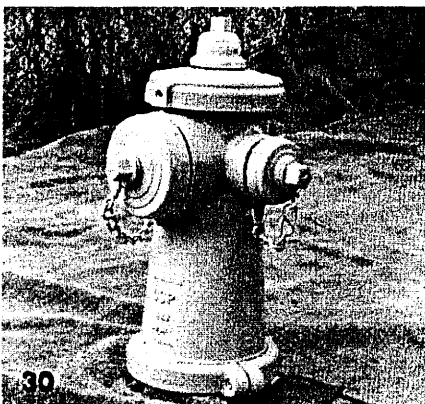
27
Replace revolving nut (Part #12), travel stop nut and washer (#10 & 4), hold down nut (#5), tighten set screw (#6). Replace operating nut (#1) and pin (#2).



28
Remove steamer nozzle cap.



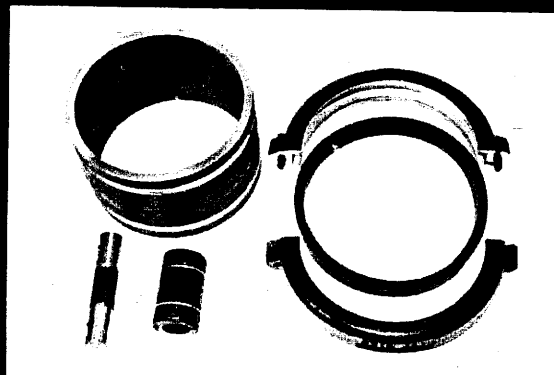
29
Open hydrant and flow. Close and check for proper draining.



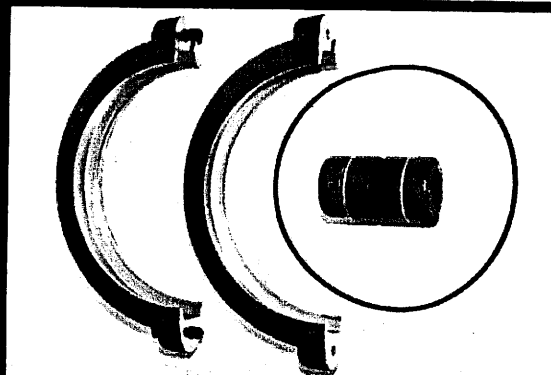
30
Hydrant closed and back in service.

ACCESSORIES

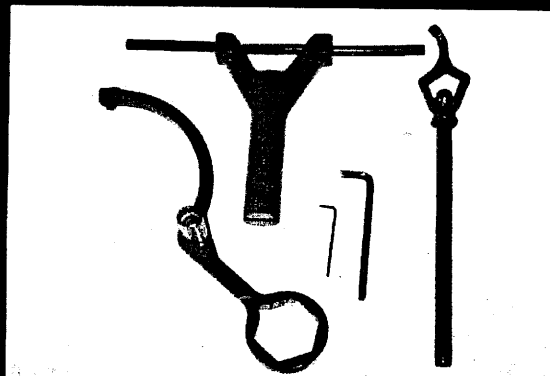
Extension Kits Extension of THE SENTINEL fire hydrant for change in ground elevations easily accomplished without excavation through the use of an extension kit which includes the extension barrel unit, 6"-12"-18" lengths, a non-breakable stem coupling, a non-breakable barrel coupling and gasket and an extension to the operating rod



THE SENTINEL Hydrant Repair Kit—If THE SENTINEL is toppled by motor vehicle impact upper barrel can be reassembled quickly and easily without excavation using hydrant repair kit! This repair kit consists of rubber seal ring, frangible stem coupling and replacement breakaway barrel coupling



The Disassembly Tool Kit—The standard tool kit consists of a lightweight main valve assembly removal wrench, two Allen wrenches and a combination spanner wrench which removes the bonnet, the bottom valve plate and the travel stop nut. Also required is a standard adjustable hydrant wrench



ORDERING INSTRUCTIONS

When ordering THE SENTINEL fire hydrant please specify the following

- 1 Quantity required
- 2 Size of main valve opening
- 3 Number and size of hose outlets
- 4 Operating nut and cap nut size and configuration (square or pentagonal), NST or other
- 5 Nozzle thread detail (NST or other)
- 6 Opening direction
- 7 Depth of bury (ground line to bottom of hydrant inlet)
- 8 Type and size of inlet connection. Mechanical Joint with or without accessories, flanged or TYTON® Pipe Joint
- 9 Color code. Unless otherwise specified the upper barrel and coupling will be fire engine red.

**U.S.
PIPE**

U.S. Pipe & Foundry Co. P.O. Box 10406 Birmingham, AL 35202
Telephone: (205) 254-7215