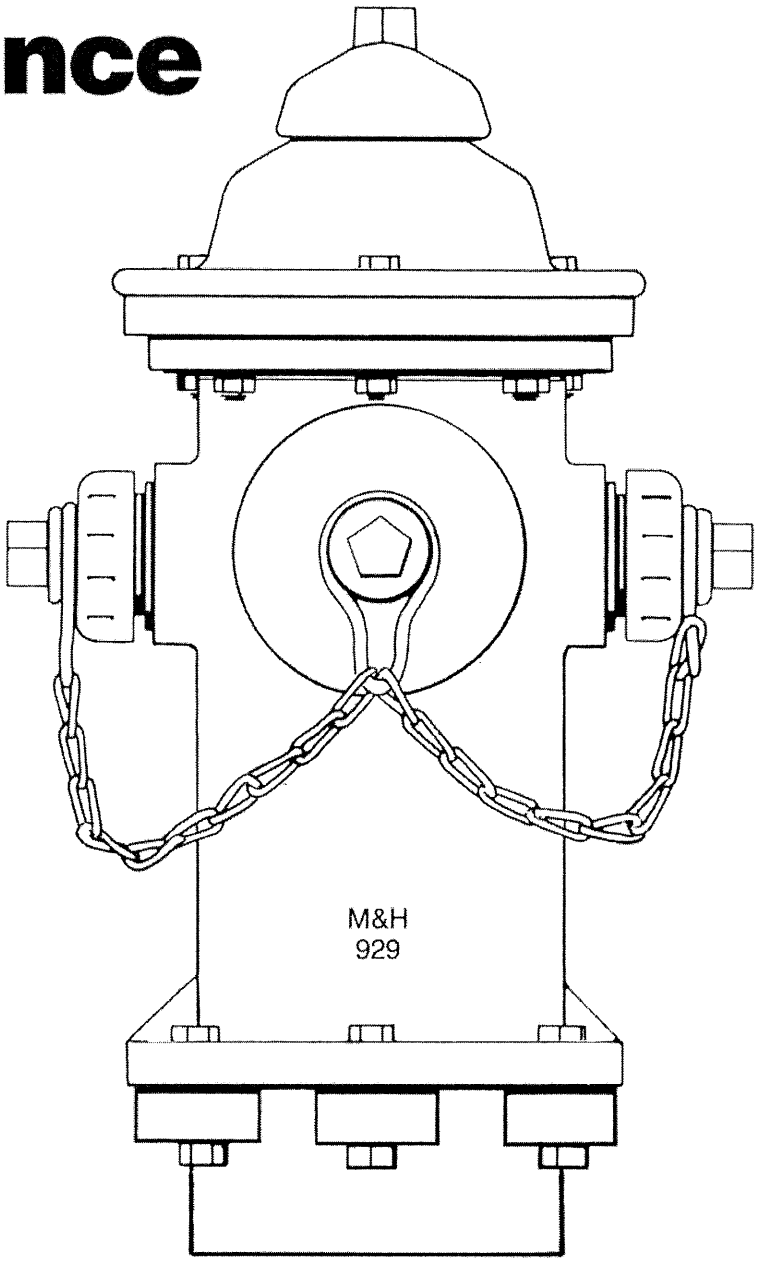
Style 929 RELIANT Fire Hydrant

Installation, Operation and Maintenance Manual



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FOREWORD:

The M&H 929 Fire Hydrant is designed to be virtually maintenance-free. The careful engineering and manufacture, plus selection of materials assuring long-life service, mean that you may never have to disturb this hydrant, once properly installed. The enclosed operating chamber provides permanent lubrication of critical operating parts with water sealed away from threads. Factory lubrication is grease; oil may be used as field maintenance option.

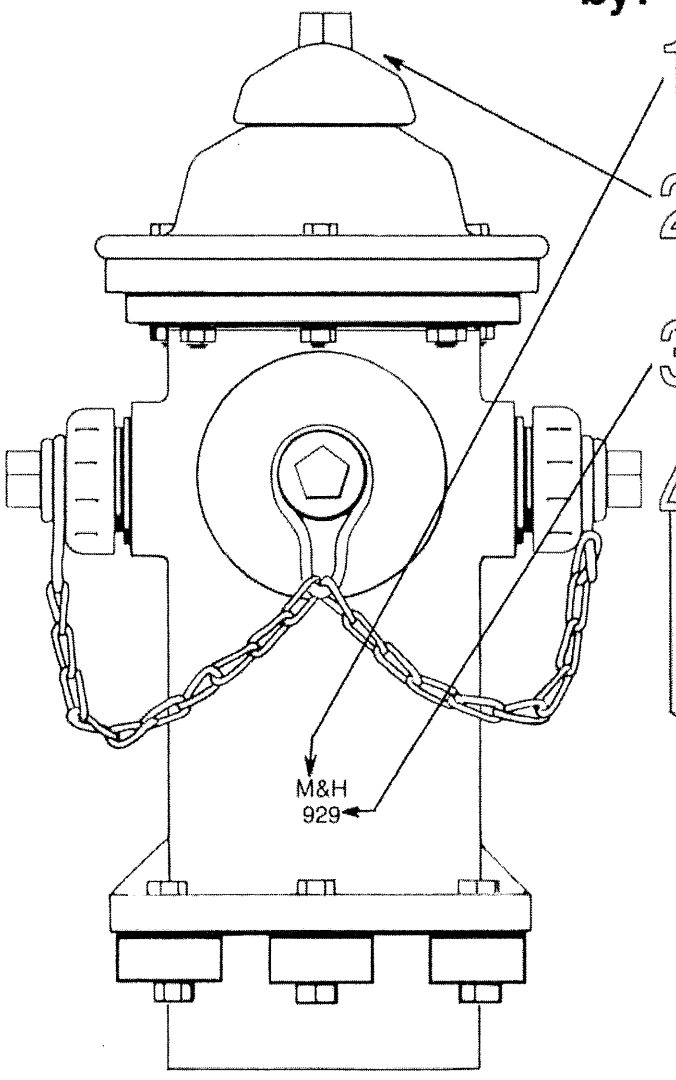
Should the M&H 929 Hydrant be involved in a traffic collision, it can be back in service in 30 minutes or less. Or if other maintenance is required, the hydrant's simple construction allows parts to be removed quickly and easily, without digging or otherwise disturbing the buried portion of the hydrant.

After installing your M&H 929 Hydrants, we suggest that this manual be filed where it can be located if needed. We confidently expect you will have few if any requirements for maintenance on this truly superior hydrant.

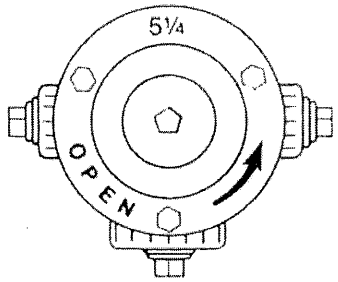
Since its introduction in 1981, some design modifications have been made to improve performance. However, these changes were made without affecting parts interchangeability or obsoleting existing customer inventories.

The M&H
Style 929 Fire Hydrant

This hydrant can be clearly identified by:



1. The Trade Make M&H on the casting — plus the hydrant style number.
2. The appearance of the bonnet and nozzle section. (Integral Operating Nut/Weather Sheild)
3. Numbers on the casting also indicates the year of manufacture.
4. Arrow on the bonnet indicates direction of operation. Lettering indicates size of main valve.



TOP VIEW

Important: When ordering parts or corresponding about the M&H 929 Hydrant, the above identifying information should be given. 1. M&H 929, 2. Main Valve Size, i.e., 4½ - 5¼, 3. Year, 4. "Left" or "Right" operation.

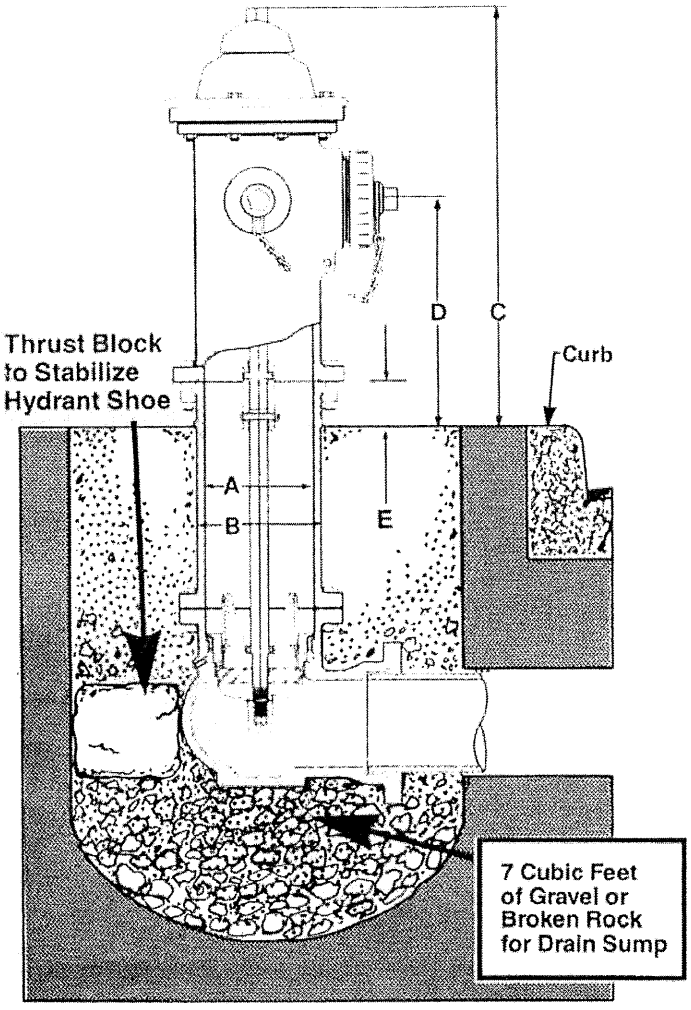
How to install the 929 Hydrant

The M&H 929 Hydrant comes to you ready to install. Since the operating chamber is already packed with a permanent lubricant, the nozzle section or other parts of the hydrant need not be disassembled.

Preparations for Setting

The "bury" or ground line of the hydrant should be 2⅞" below the traffic flange as indicated in the chart of SETTING DIMENSIONS below.

Provision should be made for quick drainage of the hydrant, particularly in frost zones. Such drainage can best be accomplished by connecting the drain to the nearest gravel, sandy or loose soil. Another method is to dig a hole a short distance from the hydrant and fill it with course gravel so that the entire contents of the hydrant can drain quickly after closing off the main valve. (See drawing below).



Be sure a firm and solid foundation is provided for the base of the hydrant. Provision should also be made for bracing the back of the hydrant shoe against water main pressure, to eliminate the possibility of blow-off. This can be accomplished either by blocking or strapping. Strapping lugs are integrally cast on the hydrant shoe.

Setting the Hydrant

See that the hydrant is perpendicular. A level may be used on the stand-pipe section. Before connecting the hydrant to the water line, make sure the inside of the hydrant shoe is free of rock, gravel, dirt or any foreign material which might become embedded in the valve, and cause leakage.

In backfilling, we recommend placing of crushed stone or coarse gravel around the bottom of the hydrant for a radius of at least 10 inches and extending well above the drain outlets, to prevent clogging. Where possible, hydrants should not be set too near the curb as this exposes them to damage.

Flushing the Hydrant

After it is completely installed and backfilled, remove one hose cap and *fully open* the hydrant, allowing the water to run until it becomes clear. "Throttling" should be avoided.

To Rotate Hydrant

If necessary to "face" hydrant in different direction, simply loosen breakaway lug bolts, rotate nozzle section to desired direction and retighten bolts to 50 foot pounds torque.

Setting Dimensions
For The M&H 929 Hydrant

Dimensions In Inches		
Dim.	4½"	5¼"
A	6 11/16	7 11/16
B	7⅝	8½
C	32	32
D	18	18
E	2⅞	2⅞
Turns to Open	15	15

How to extend the 929 Hydrant

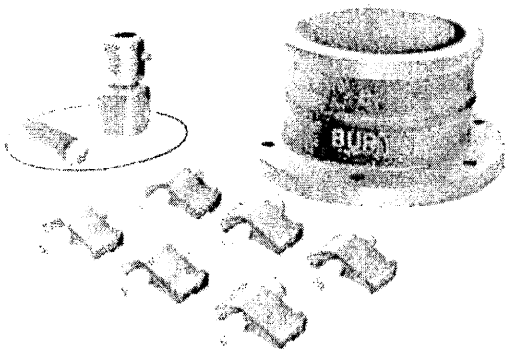
When the ground level around the hydrant is raised, it is desirable to increase length of the hydrant barrel. To do this you will need the appropriate EXTENSION KIT.

The hydrant nozzle section and stem are removed down to the breakaway flange and breakaway coupling, as follows:

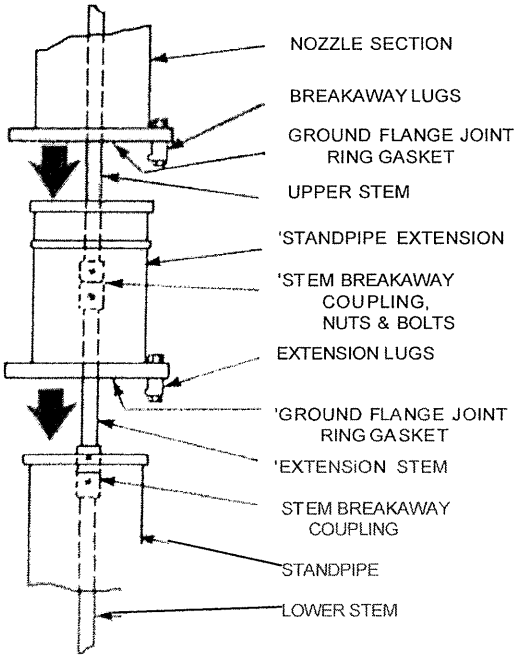
1. Remove weather shield bolt, using Allen wrench, and lift off weather shield.
2. Using lock-nut wrench, unscrew stem nut lock nut. Remove lock nut by turning in opposite direction of "Open" arrow cast on bonnet.
3. Unscrew stem nut from stem.
4. Remove the three bonnet bolts and lift off bonnet and bonnet gasket.
5. With stem stop wrench (opposite end of lock nut wrench), unscrew stem stop nut, turning in same direction as arrow on bonnet.
6. Remove the three bolts holding the seal plate and lift off the seal plate and seal plate gasket.
7. Remove the flange bolts and lugs at the ground line flange and lift off the nozzle section.
8. Remove the top part of the stem by removing top bolt in the breakaway stem coupling.
9. Attach the extension stem to the lower breakaway coupling and reconnect to upper stem using new breakaway coupling provided in the Extension Kit. (See note below)
10. Join the standpipe extension piece to the top flange of the existing standpipe with the gasket, extension lugs and bolts provided in the Extension Kit.*
11. See that all parts are clean and greased in accordance with instructions shown on page 7.
12. Replace the nozzle section using the original ring gasket, the breakaway lugs and bolts removed under 7, above. Regrease ring gasket groove.
13. Reassemble the hydrant following steps 1 through 6 above, in reverse order

Note: If you prefer to use a completely new stem below the breakaway flange, the main valve must be removed, following procedure on page 5.

When nozzle or extension section is ready to be set in place with ring gasket, insert flange bolts in flange without nuts to serve as centering means.
*All necessary parts included in Extension Kit shown above.

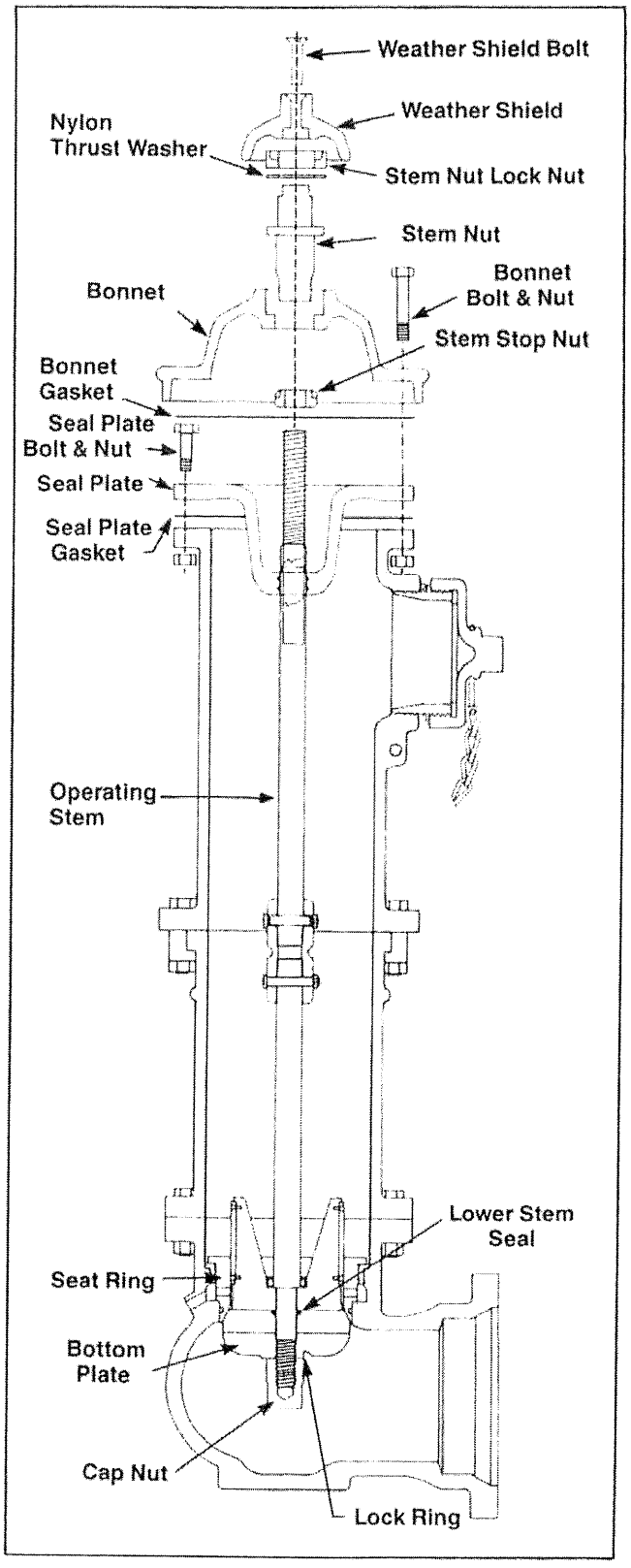


PACKAGED EXTENSION KIT



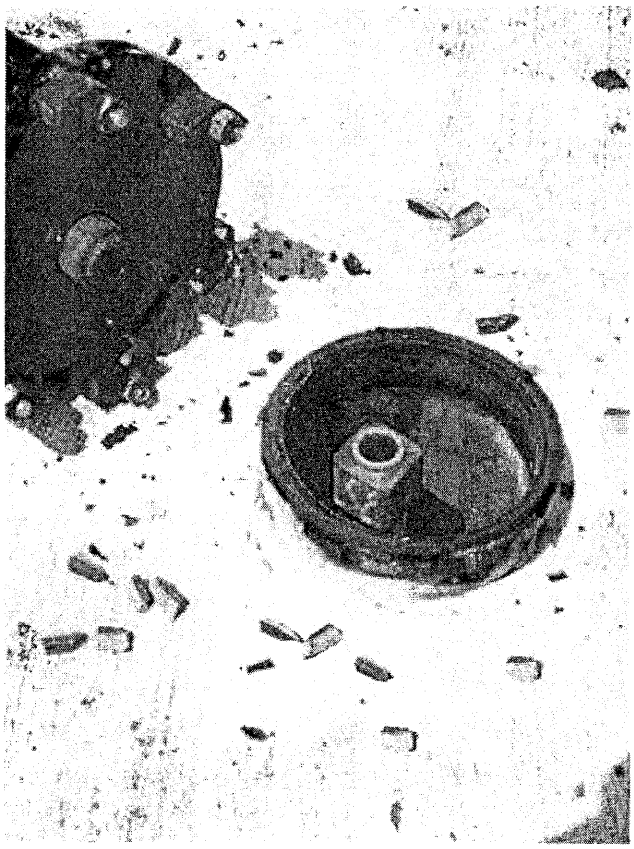
How to remove and service the main valve

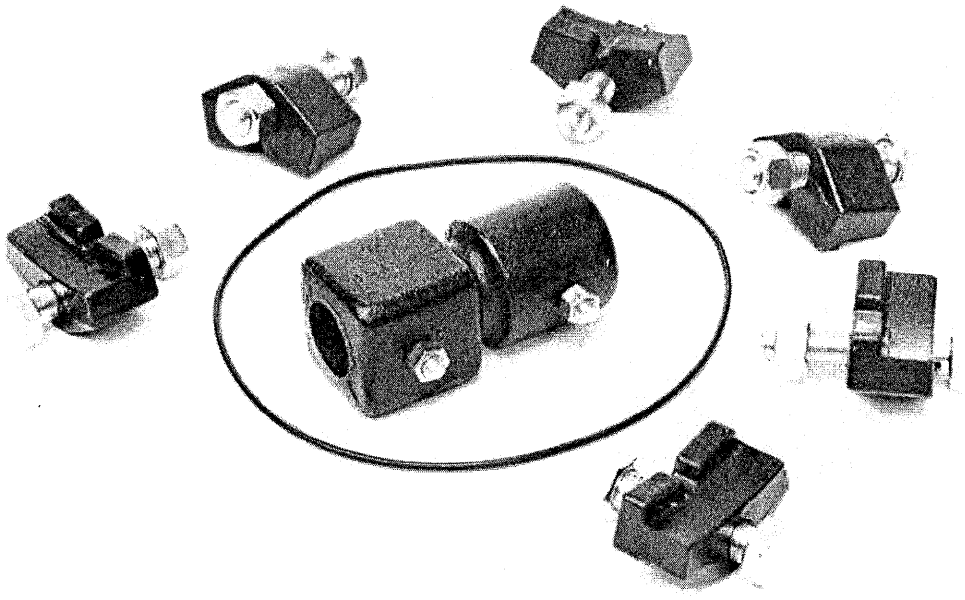
1. Shut off water at auxiliary valve and release pressure by opening hydrant slightly (three to five turns).
2. Remove weather shield bolt, using $\frac{5}{16}$" Allen wrench (turn to left) and lift off weather shield.
3. Using lock-nut wrench, unscrew stem nut lock nut. Remove lock nut by turning in opposite direction of "Open" arrow cast on bonnet.
4. Unscrew stem nut from stem.
5. Remove the bonnet bolts and lift off bonnet and bonnet gasket.
6. With stem stop wrench, unscrew stem stop, turning in the same direction as for valve operation.
7. Remove the bolts holding the seal plate and lift off the seal plate and seal plate gasket.
8. Using short disassembly wrench, slide square tube over operating stem and lower down to engage square portion of breakable traffic coupling. Turn wrench to the left until main valve seat is free. If using long, direct drive wrench, lower socket down to main valve and engage drive lugs on seat ring.
9. When seat ring is free, remove main-valve disassembly wrench and lift stem, main valve and seat ring out of hydrant.
10. Disassemble the main valve from the stem by flattening the lock ring, unscrewing the cap nut and removing the bottom plate.
11. While stem parts are disassembled, check the lower valve-stem seal (part #47) as well as the drain-valve facings and the seat ring gaskets.
12. Before inserting main valve in seat ring, generously lubricate drain-valve facing with grease.
13. All ring gaskets and threads should be generously lubricated with grease.
14. Replace main valve and seat ring in the hydrant, following the above steps in reverse, making sure all parts are clean and greased in accordance with instructions shown on page 7.



How to repair the Traffic Model Hydrant after collision

1. Remove broken stem coupling from the upper stem and from the lower stem by removing nuts from the bolts and sliding the bolts out until free of the stem.
2. Remove breakaway lugs and bolts from nozzle section.
3. Remove the weather shield, stem nut lock nut, stem nut, bonnet stem stop and seal plate as described on preceding page thru step #7, being careful to prevent damaging ring gasket seals at the seal plate and stem.
4 Install square end of new coupling onto lower stem and bolt in place, then install upper stem in coupling and bolt in place.
5. Wipe off breakaway joint ring gasket and *be sure there is no dirt in the gasket groove.* Check to be sure ring gasket has not been damaged. Refill ring gasket groove with grease. Press the ring gasket into the grease to hold it in place during installation. When nozzle section is to be set on standpipe, insert breakaway joint bolts without nuts in nozzle bottom flange to serve as centering means.
6. With nozzle section in place on standpipe, replace damaged breakaway lugs from the repair kit and tighten joint.





Repair Kit Includes one breakaway stem coupling, stem coupling bolts, and nuts, 6 standpipe bolts and nuts, set of 6 breakaway lugs and one ground flange o-ring gasket.

7. Reinstall seal plate gasket and seal plate.

8. Screw stem stop down to the end of the stem thread using the stem stop wrench. Tighten to 10 to 20 foot pounds torque. Lubricate in accordance with instructions below.

9. Place bonnet gasket on seal plate then reinstall bonnet.

10. Screw stem nut with nylon thrust washer (part no. 36) on top shoulder onto stem, then tighten stem nut lock nut in place with the lock nut wrench.

11. Assemble weather shield on stem nut with weather shield bolt and hydrant is ready for operation.

Lubrication Instructions

M&H Style 929 Fire Hydrants come to you properly lubricated and there is no need to disassemble the hydrant for lubrication at time of installation. *In the future if the hydrant is disassembled for maintenance or repair,* the following lubrication instructions should be followed:

1. **Grease:**
   Use food-grade grease only.

2. **Stem Nut and Operating Threads:**
   Generously lubricate the stem operating threads making sure the threads are filled with grease. Completely fill the thread area of the stem nut with grease, leaving the unthreaded void inside the nut empty to allow grease to flow into that area.

3. **Ground Line Flange Ring Gasket:**
   Completely fill ring gasket groove with grease and press ring gasket into grease prior to setting the nozzle section on standpipe.

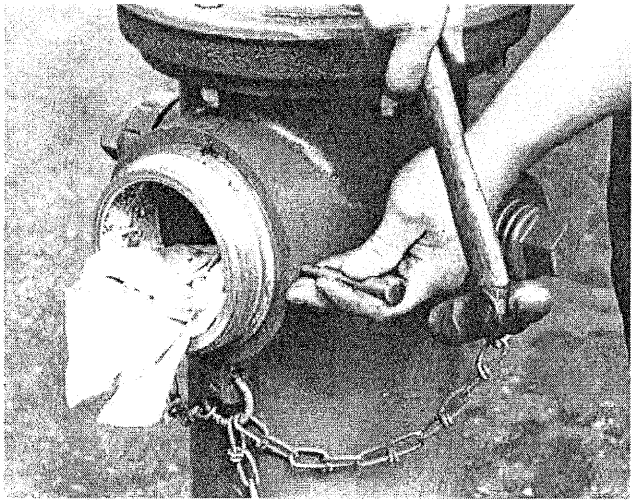
4. **Drain Valve Facing:**
   Before inserting the main valve into the seat ring, generously lubricate the drain valve facings.

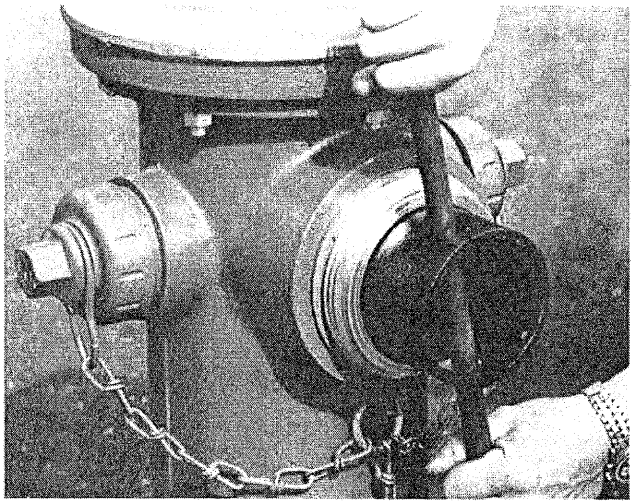
5. **All Threads I.E., Brass, Cast Iron or Steel:**
   Generously lubricate all threads prior to assembly to provide ease of assembly and avoid corrosion from line content or condensation.

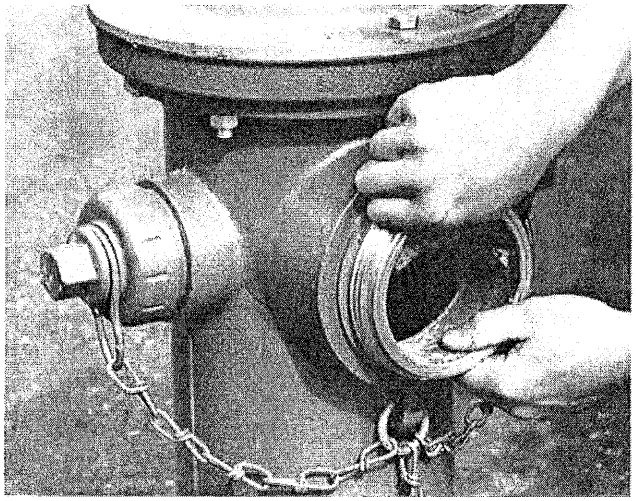
6. **All Ring Gaskets:**
   Lubricate all ring gasket grooves at time of assembly to provide maximum ring gasket performance and long service life.

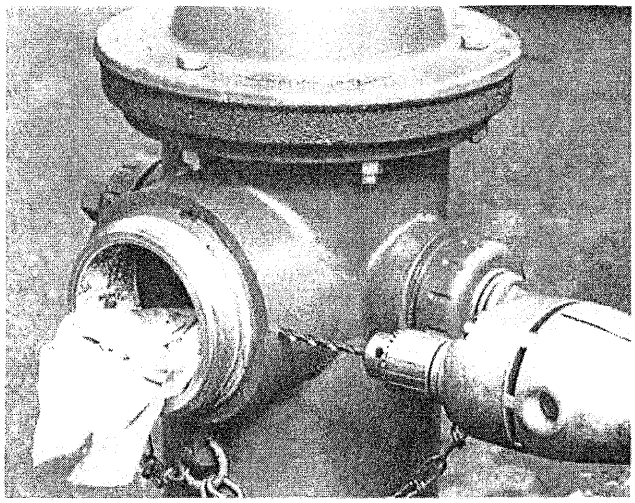
How to change a Pumper or Hose Nozzle

FOR HYDRANTS WITH YEAR '92 CASTING DATE AND PRIOR.









1. Unscrew nozzle cap using hydrant operating wrench.

2. To remove either pumper or hose nozzle, drive steel locking pin through from the outside, holding hand or rag inside to prevent loose pin from dropping down hydrant barrel.

3. Unscrew either nozzle by engaging internal lugs with pumper or hose nozzle wrench. *Pumper nozzle brass is removed by turning to right while hose nozzle is removed by turning left.*

4. Install replacement brass nozzle using new gasket to assure tight joint where nozzle shoulder butts against the hydrant.

5. Tighten pumper nozzle or hose nozzle with appropriate nozzle wrench by engaging internal lugs. Use 150 ft. lbs. torque to tighten pumper nozzle and 100 ft. lbs. torque for hose nozzle. Use grease on gasket to reduce friction between the nozzle shoulder and gasket.

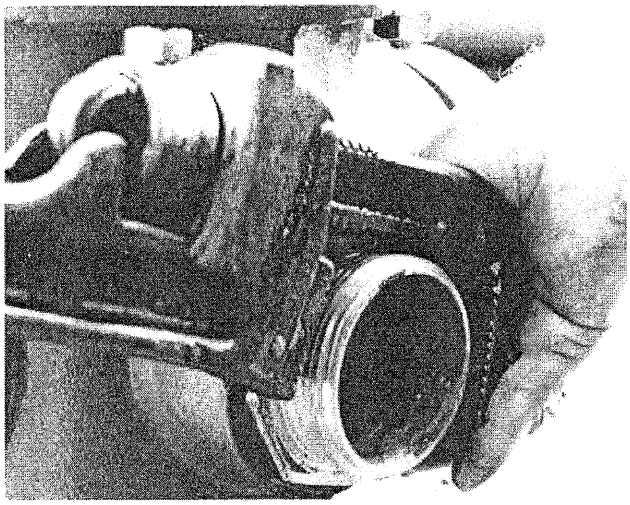
6. Reinstall nozzle cap and tighten. Pressurize hydrant (full open) to assure leak-proof joint.

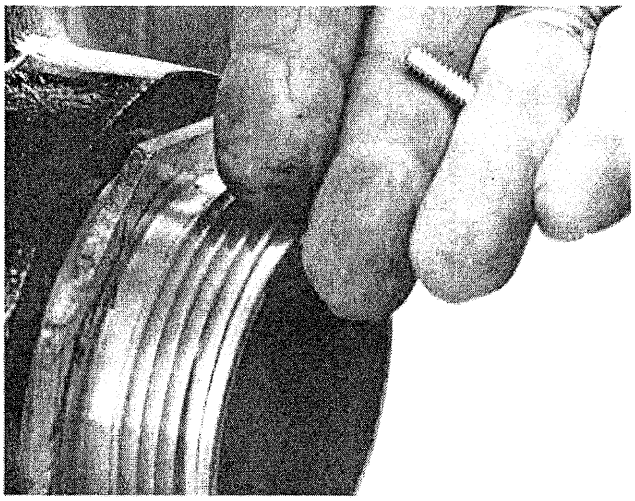
7. After testing, drill $\frac{5}{16}$" hole through replacement nozzle at existing hole in cast iron nozzle outlet. Make sure new hole is centered.

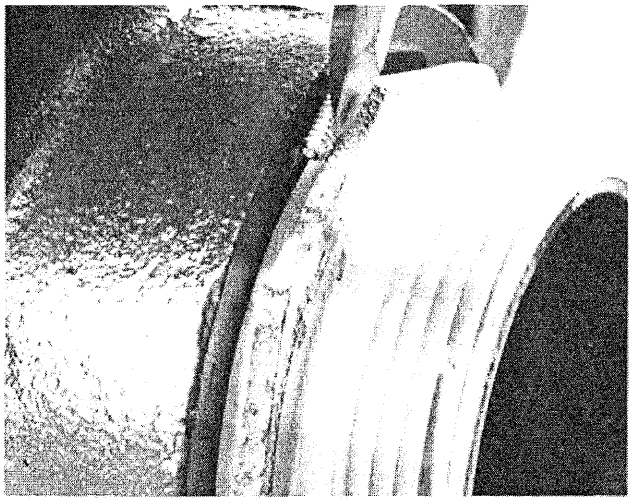
8. Grease locking pin and O-Ring gasket and drive fluted end first into hole until flush with outside.

How to change a Pumper or Hose Nozzle

FOR HYDRANTS WITH YEAR '92 CASTING DATE AND AFTER.

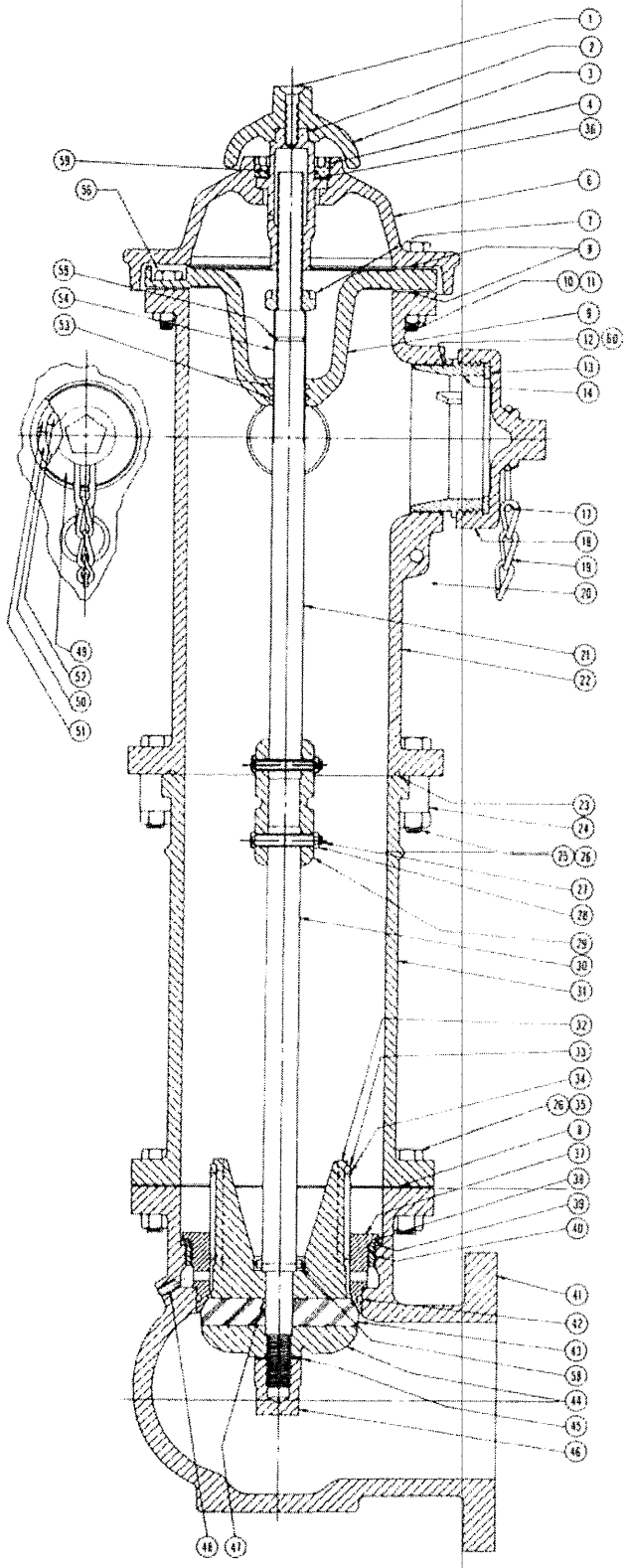


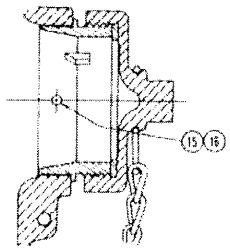




1. Unscrew nozzle cap using hydrant operating wrench.
2. To remove either pumper nozzle or hose nozzle, drive zinc plated steel lock pin from slot between C.I. shoulder of nozzle section and brass flange of nozzle outlet. Use hammer and punch or nail.
3. Unscrew pumper nozzle brass by turning to *right,* engaging internal driving lugs with pumper nozzle wrench as shown on page 8. Unscrew hose nozzle brass by turning *left* using pipe wrench on hex flange as shown on this page.
4. Install replacement nozzle using new gasket to assure a tight joint where nozzle shoulder butts against the hydrant.
5. Tighten pumper nozzle brass with pumper nozzle wrench using 150ft. lbs. torque. Tighten hose nozzle brass to 100 ft. lbs. torque with pipe wrench. Use grease on gasket to reduce friction while tightening.
6. Reinstall nozzle cap and tighten. Pressurize hydrant (full open) to assure leak-free joint.
7. Insert zinc plated steel lock pin in groove between C.I. shoulder of hydrant and brass flange of nozzle. Force lock pin into groove with screwdriver and hammer.

Parts List

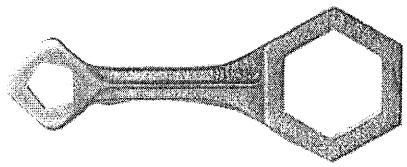




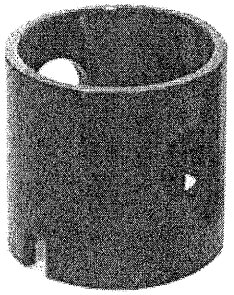
Nozzle pinning method on hydrants manufactured 1992 and prior, part #15 & 16. Current method employs zinc plated nozzle lock pin between shoulder of C.I. outlet and brass nozzle flange. Part #60.

	PART NO.	NO. REQ'D.	DESCRIPTION	MATERIAL	
	1	1	WEATHER SHIELD BOLT/OIL FILL PLUG	STEEL	
	2	1	STEM NUT	BRONZE	
	3	1	WEATHER SHIELD	CAST IRON	
	4	1	STEM NUT LOCK NUT	BRONZE	
	6	1	BONNET	CAST IRON	
	7	1	STEM STOP	BRONZE	
	8	3	SEAL PLATE GASKETS	CLOTH/RUBBER	
	9	1	O-RING SEAL PLATE/OIL RES.	CAST IRON	
	10	3	SEAL PLATE BOLTS	STEEL PLATED	
	11	6	SEAL PLATE/BONNET NUTS	STEEL PLATED	
	12	1	PUMPER NOZZLE O-RING	RUBBER	
	13	1	PUMPER CAP GASKET	RUBBER	
	14	1	PUMPER NOZZLE	BRONZE	
	*15	3	NOZZLE LOCK PIN (OLD STYLE)	STEEL	
* Available as parts only. Phased-out late 1992.	*16	3	LOCK PIN GASKET (OLD STYLE)	RUBBER	
	17	3	CHAIN PEAR LINK	STEEL	
	18	1	PUMPER NOZZLE CAP	CAST IRON	
	19	3	NOZZLE CAP CHAIN	STEEL	
	20	3	CHAIN RING	STEEL	
	21	1	UPPER STEM	STEEL	
	22	1	NOZZLE SECTION	CAST IRON	
	23	1	GROUND FLANGE O-RING GASKET	RUBBER	
	24	6	BREAKAWAY LUG	CAST IRON	
	25	6	BREAKAWAY JOINT BOLTS	STEEL PLATED	
	26	12	BREAKAWAY JOINT/STANDPIPE NUTS	STEEL PLATED	
	27	2	STEM BREAKAWAY BOLT	STEEL PLATED	
	28	2	STEM BREAKAWAY NUT	STEEL PLATED	
	29	1	STEM BREAKAWAY COUPLING	CAST IRON	
	30	1	LOWER STEM	STEEL	
	31	1	STANDPIPE	DUCTILE IRON/CI	
	32	1	DRAIN VALVE TOP PLATE	BRONZE	
	33	2	DRAIN VALVE FACING	RUBBER	
	34	4	STAPLES/RIVETS	COPPER	
	35	6	SHOE STANDPIPE BOLTS	STEEL PLATED	
	36	1	THRUST WASHER	NYLON	
	37	1	SEAT RING	BRONZE	
	38	1	SEAT RING SEAL (UPPER)	RUBBER	
	39	1	GASKET RETAINER	LOCTITE	
	40	1	RETAINER RING (NOT FIELD REPLACEABLE)	BRONZE	
	41	1	HYDRANT SHOE	CAST IRON-EPOXY COATED	
	42	1	SEAT RING SEAL (LOWER)	RUBBER	
	43	1	MAIN VALVE	RUBBER	
	44	1	BOTTOM PLATE	CAST IRON-EPOXY COATED	
	45	1	LOCK RING	STAINLESS STEEL	
	46	1	CAP NUT	CAST IRON-EPOXY COATED	
	47	1	LOWER STEM SEAL	RUBBER	
	48	2	DRAIN VALVE BUSHING	BRONZE	
	49	2	HOSE NOZZLE CAP	CAST IRON	
	50	2	HOSE NOZZLE O-RING	RUBBER	
	51	2	HOSE NOZZLE	BRONZE	
	52	2	HOSE CAP GASKET	RUBBER	
	53	2	SEAL PLATE O-RINGS	RUBBER	
	54	1	UPPER STEM SLEEVE	BRASS	
	55	1	STEM SLEEVE O-RING	RUBBER	
	56	3	BONNET BOLTS	STEEL PLATED	
**Improved lock pin use started late 1992.	58	1	STEM LOCK PIN	CHROME-VANADIUM STEEL	
	59	1	STEM NUT LOCK NUT O-RING	RUBBER	
	**60	3	NOZZLE LOCK PIN	ZINC-PLATED STEEL	

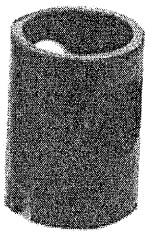
M&H Style 929 RELIANT Fire Hydrant
Operating and Maintenance Tools



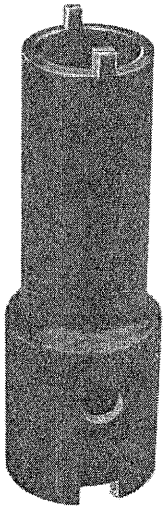
Operating/Spanner Wrench



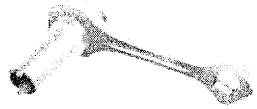
Pumper Nozzle Wrench



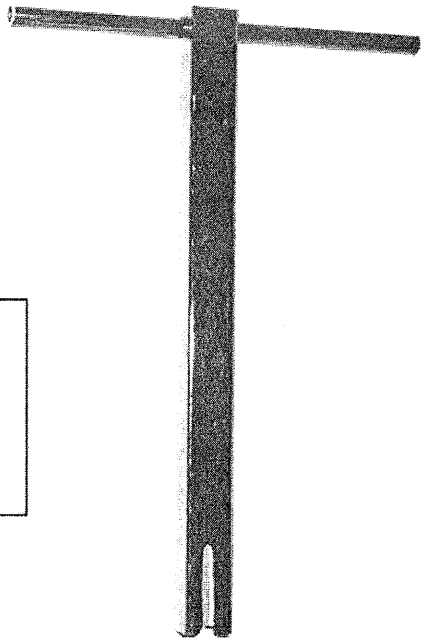
Hose Nozzle Wrench
(1992 & Prior Models)



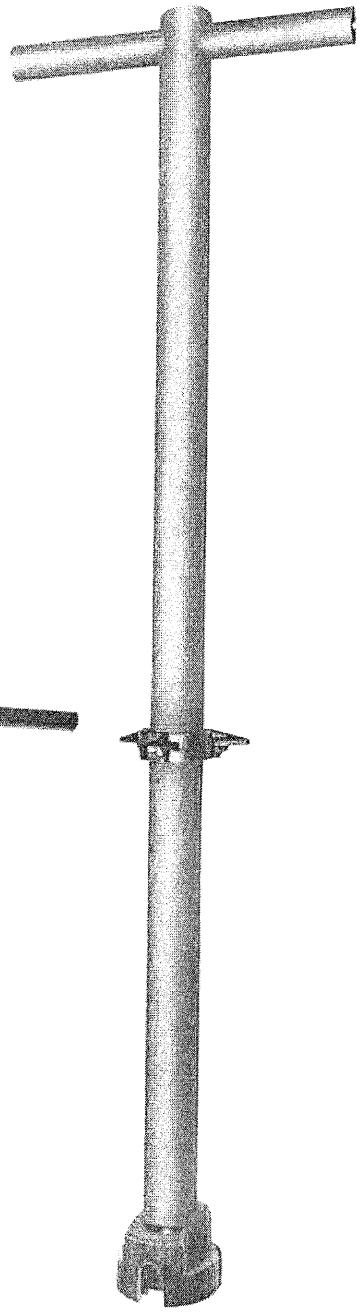
Lock Nut &
Stem Stop Wrench



Combination Wrench-Operating,
Lock Nut & Stop Nut Removal



Short Disassembly
Wrench



Main Valve
Disassembly Wrench

OPERATING/SPANNER WRENCH

The small end of this wrench is to engage operating nut to open or close any hydrant and for removal of pumper or hose nozzle caps. The size and shape is made for 1½" pentagon shape nuts or can be made for special configuration. Large end is standard size for removal of thrust nut on Style 129 hydrants . . . it has no purpose for the Style 929.

LOCK NUT & STEM STOP WRENCH

The purpose of this simple fabricated tool is to facilitate the removal of the stem lock nut (part no. 4) after first removing the integral weathershield/operating nut (part no. 3) using a 5/16" Allen wrench. The larger diameter end has slots to engage the lock nut and removal is by turning in opposite direction of "open" arrow cast on bonnet.

After removing lock nut, remove the operating stem nut (part no. 2). Reverse wrench ends and slide over operating stem to engage the stem stop nut (part no. 7). To remove, turn in same direction as "open" arrow cast on bonnet.

COMBINATION WRENCH

This wrench combines both the operating/spanner wrench and the lock nut & stem stop nut wrench as a special purpose wrench for use only with the Style 929 hydrant.

PUMPER NOZZLE WRENCH

After removing nozzle lock pin, this wrench is inserted into nozzle I.D. with slotted end engaging two drive lugs inside nozzle. Pumper nozzles have left-hand threads and thus are removed by turning to the right.

HOSE NOZZLE WRENCH

This wrench functions identically to the pumper nozzle wrench except that nozzle threads are right-hand and nozzle is removed by turning to the left. This wrench is for hydrants with a casting date of '92 or prior date.

A design change was initiated in late '92 incorporating a hex flange on the nozzle brass and the internal drive lugs were removed. Therefore, to remove hose nozzle brass from (some) hydrants with '92 or any with later date, use a conventional pipe wrench to engage the hex flange.

MAIN VALVE DISASSEMBLY WRENCHES

The short disassembly wrench is the most popular main valve disassembly tool because of its standard length regardless of hydrant bury and its manageable light weight. The square tube slides over the main valve stem and engages the square portion of the stem coupling. Hydrant main valve assembly is easily removed by turning wrench to the left. Turning torque is transferred from wrench through the lower stem.

The longer, direct drive disassembly wrench is for those who prefer to engage the drive lugs on the main valve seat itself. This wrench must be in sufficient length to accommodate hydrant bury depth.

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