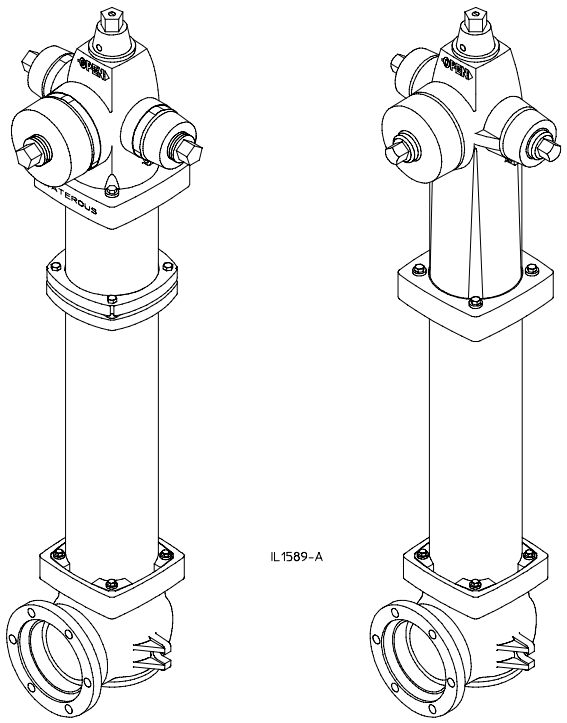
WATEROUS

Installation, Operation, Maintenance and Overhaul Instructions

Form No.	Date	Revision Date
H-351	12/04/95	02/16/10

Trend Hydrants



New Style Trend
Model WB77

Old Style Trend
Wet Top Model WT77
Dry Top Model WT77D

Table of Contents

Illustrations

Tables

AMERICAN FLOW CONTROL
American-Darling Valve and Waterous
A DIVISION OF AMERICAN CAST IRON PIPE COMPANY

Read through instructions carefully before installing, using or repairing your Waterous Trend Hydrant.

Introduction

This instruction covers installation, operation, maintenance and overhaul of Waterous Trend fire hydrants. The Trend is furnished in two main variations, the New Style and Old Style.

The New Style Trend (Model WB77) entered production in 1987 and is built to this day.

The Old Style Trend came in two varieties: the Dry Top Model WT77D (built from 1977 to 1996) and the Wet Top Model WT77 (built from 1977 to 1987).

The installation, operation and maintenance is identical for both variations; however, the overhaul and repair parts vary slightly. Refer to the identification diagram preceding the parts list and overhaul sections if ordering repair parts or overhauling your hydrant.

Trend hydrants are available as Underwriters Laboratories (UL) Listed and Factory Mutual System (FM) Approved. Model designations for these hydrants are as follows:

Table 1. UL / FM Models

Model		UL / FM Approved
New Style	Old Style	
WB77U	WT77U	Listed by UL
WB77F	WT77F	Approved by FM
WB77UF	WT77UF	Listed by UL Approved by FM

General Description

The design of the hydrant provides for the standpipe and upper portions to remain completely dry except when the hydrant is actually in use, and also permits maintenance of all the upper portions of the hydrant without shutting off the water main.

The valve opens and closes without sudden pressure surges or water hammer when the operating rod is moved downward or upward by turning the operating nut. Since the valve opens against the direction of water flow, water pressure helps close the valve and seal it. Water pressure alone will hold the valve tightly closed even when the upper portion of the hydrant is disassembled. The entire operating rod assembly is removable when the water main is shut off.

The sliding drain plunger functions automatically as the valve opens or closes. It is made of red brass, and should last indefinitely.

Synthetic rubber O-rings seal the operating rod against water main pressure and protect the operating nut from foreign matter and inclement weather.

All Trend hydrants are furnished with a breakoff feature. The breakoff feature consists of a breakable flange and breakable rod coupling designed to snap just above ground level under severe impact. This feature eliminates the necessity of digging a hydrant out of the ground to repair it after it has been hit by a vehicle.

Kits are available which contains all parts normally needed to repair a hydrant damaged in a traffic accident, or extend a hydrant. No special tools are required.

For more information on traffic damage repairs and extending a hydrant, see the following instructions:

- H-358, *Trend Traffic Damage Repair*
- H-404, *Installation Instructions for Standpipe and Rod Extension Kit K479 in Trend Fire Hydrants*

Installation Instructions

The ideal location for a hydrant to be installed is one that is well drained and provides a firm support for the hydrant. In regions where freezing occurs, the hydrant bottom should always be below the frost line. If the hydrant is installed properly it will not freeze, break or heave. A typical installation is shown in Figure 1 on page 3.

Where there is a high ground water level or other conditions which prevent the use of hydrants with drains, ‘‘no-drain” hydrants must be used. These hydrants are available in two versions:

(a) No drain valve and no drain openings in bottom.

(b) With drain valve, but drain holes in bottom are plugged with brass pipe plugs and reducing bushings.

Both version (a) and version (b) hydrants are identified with an aluminum tag which is marked “No-drain” “Pump after use.”

Version (b) can easily be converted to a self-draining hydrant before installation by removing the brass pipe plugs. The “No-drain” tag should also be removed.

NOTE: “No-drain” hydrants should be identified and pumped after each use regardless of weather conditions and must be pumped if temperatures below freezing are likely. A ‘‘no-drain” hydrant should be checked often to make sure the barrel stays dry.

To convert a standard hydrant to a no-drain hydrant, a ‘‘no-drain” valve seat is available. Valve seat would be changed and drain plunger (27) would be eliminated. Refer to “Overhaul Instructions” section of this manual for details for the removal and installation of internal components.

While the details of hydrant installation vary with the terrain in which a hydrant is to be installed, the following general instructions will usually apply.

1. Tighten all standpipe and inlet flange bolts and nuts.
2. Make sure the hydrant inlet and main lateral pipe are clean and free of all foreign matter. Remove all contaminants that may affect water system purity before connecting the joint.
3. The installation of an auxiliary (hydrant shut-off) valve in the hydrant lateral pipe is recommended (see the Valve Installation Guide).

   NOTE: Use 1/8” thick rubber “ring” type gaskets or Toruseal® full face gaskets. Do not use composition or flat full face gaskets.

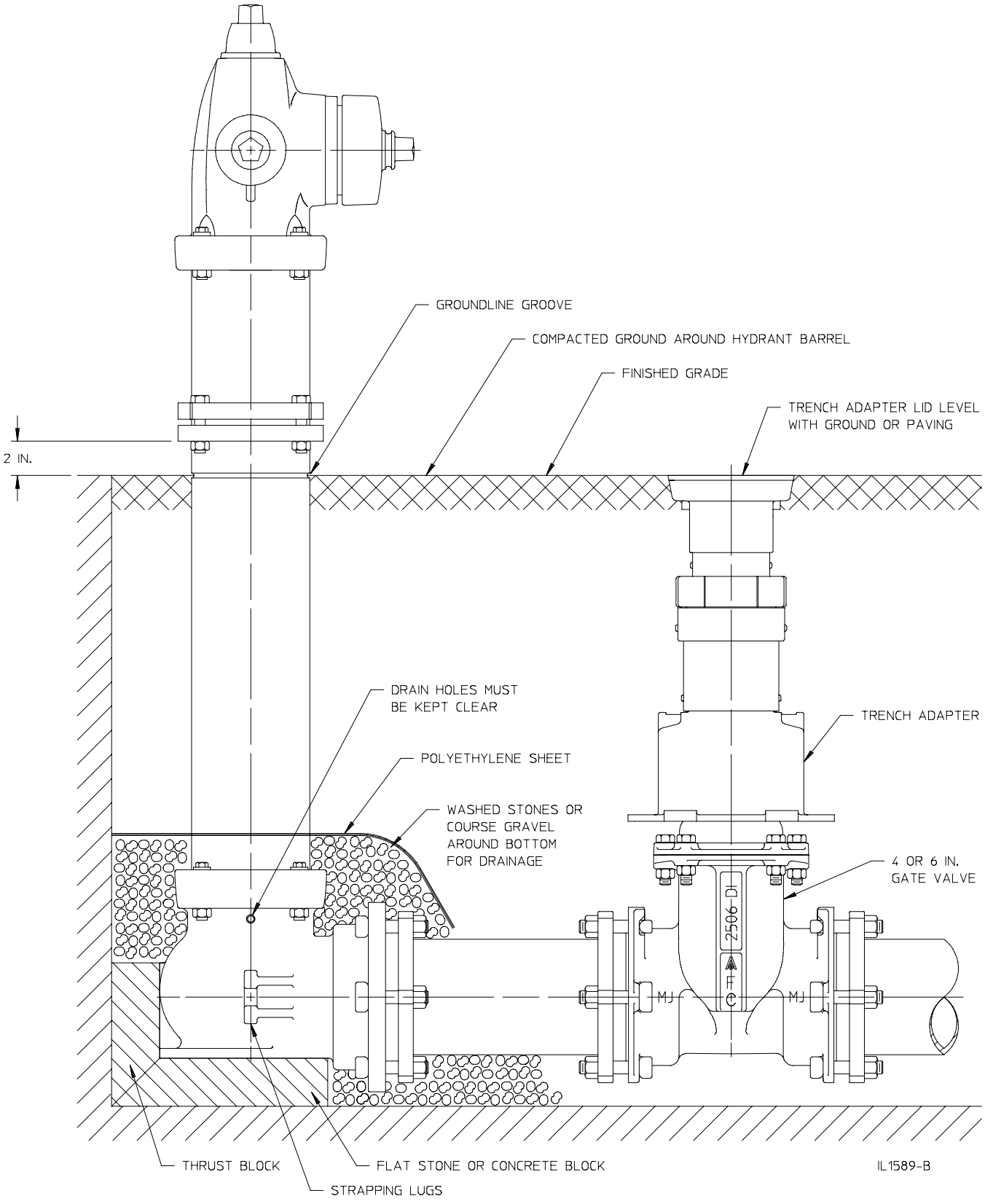
⚠WARNING

Water hammer and high pressure. Can cause personal injury, major damage to the hydrant, water main, hose or attached equipment.

Only screw type gate valves, requiring a minimum of eight full turns to open or close, should be used on fire hydrants. Rapid opening or closing of hydrant valves can cause water hammer and high pressure. AFC series 2500 ductile iron resilient wedge valves are recommended.

4. Support hydrant on a flat stone or cement block. Check hydrant to make sure it is plumb. Use standpipe for vertical alignment.
5. Restrain hydrant movement with appropriate thrust blocking or approved mechanical strapping method to prevent pipe joint separation.
6. Check drain holes in hydrant inlet to make sure they are clear.
7. Provide a drain area around the hydrant inlet to a level several inches above the drain holes using clean, washed stones or coarse gravel. Material should not be smaller than the drain hole diameter or larger than egg size.
8. Cover drainage stones with polyethylene (4-6 mil thick) or a similar waterproof material to prevent dirt from clogging the drainage area.
9. Backfill over pipe only. Leave the complete hydrant exposed to check for leaks at the inlet joint during testing.
10. Turn on water main valve fully, open hydrant valve fully and flush at full flow for several minutes until water becomes clear. If hydrant is not flushed thoroughly after installation, sand or other foreign matter left in water main or hydrant during installation may become imbedded in main valve and eventually cause leakage.

Figure 1 . Standard Fire Hydrant Installation Detail



Operating Instructions

Always open a hydrant completely, never just part way. Unless the hydrant is open far enough, the drain valve will be partially open, and water gushing out of the drain ports may wash away the soil around the hydrant bottom. Also, a partially closed hydrant may trap small stones and other debris between the hydrant valve and seat.

⚠ WARNING

Hydrant cap hazard.
Can result in serious injury.

Make sure the hydrant is not charged when removing caps. If the hydrant is charged, the cap will blow off.

If hydrant does not shut off completely, do not attempt to force it. Stones or other foreign matter between the main valve rubber (32) and valve seat (29) may prevent the valve from closing. Partially opening and closing valve several times may dislodge obstruction between valve and seat.

If this does not work, remove operating rod assembly as described in the “Overhaul Instructions” section of this manual. Also remove the obstruction, replacing the main valve rubber if it has been damaged.

Since a Waterous hydrant will open and close easily if maintained properly, extra long operating wrenches should not be used.

Each time hydrant is shut off, back off operating nut slightly to relieve tension on operating rod. Since water pressure will hold valve up against its seat, turning operating nut to a dead stop is not necessary if valve and seat are in good condition.

NOTE: If the main valve rubber or seat have been damaged, it may be necessary to apply extra torque to achieve shut-off. If this condition exits, the hydrant should be repaired as soon as possible.

Maintenance Instructions

The ease of operation and the frequency of repairs depends on the condition of the water system and the maintenance given. Dirt, gravel and other foreign material in the water system may prevent the hydrant from closing or draining properly, or may damage the main valve. Under most operating conditions, the following recommended semi-annual lubrication and inspection is the only maintenance required.

Inspection

1. Every spring and fall, open hydrant completely and let water run for several minutes. Open and close valve to make sure it works properly, and check for leaks.
2. After the valve is closed, the water in the hydrant should drain rapidly. If it does not, the drain ports may be clogged. To clear drain ports, install nozzle cap, and tighten until water tight, then open hydrant two or three turns for several minutes. This will leave drain port partially open and permit water pressure to wash out the obstruction. If this method is unsuccessful, remove the operating rod assembly and clean the drain mechanism. If neither of above methods permits water to drain, it indicates that the drainage area around the hydrant base should be rebuilt.

Lubrication

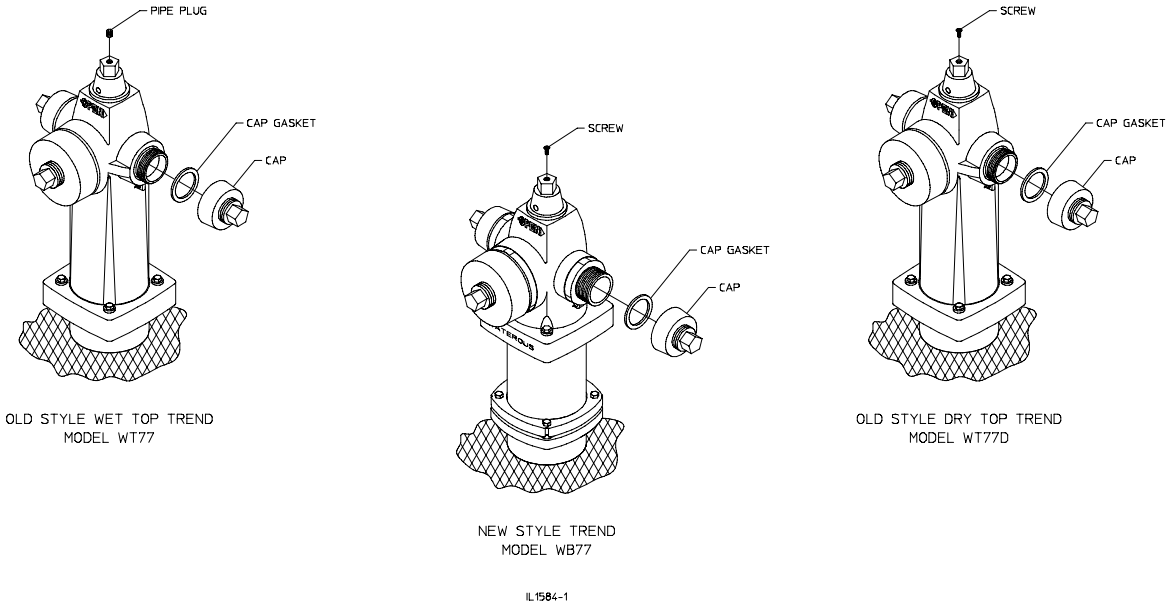
1. Remove flat head screw or socket head pipe plug from operating nut and add approximately one tablespoon of oil through opening. Replace screw or pipe plug.

⚠WARNING

Do not add more than 1/2 oz. of oil.

2. Remove all nozzle caps, clean rust or corrosion from threads of nozzles and caps, and replace cap gaskets if necessary. Apply a light coat of grease to nozzle threads before replacing cap.

Figure 2. Inspection and Lubrication



Lubricants

The recommended lubricants for the Trend hydrant are as follows:

Oil

Where oil is specified in these instructions, use white mineral oil USP (Lubriplate FMO-350-AW or equal).

Grease

Where grease is specified, use Citgo Clarion® Food Machinery Grease No. 2 (formerly named Citgo Mystik® FG- 2 Food Machinery Grease).

Identifying Trend Hydrant Variations

Figure 3. Old Style Trend

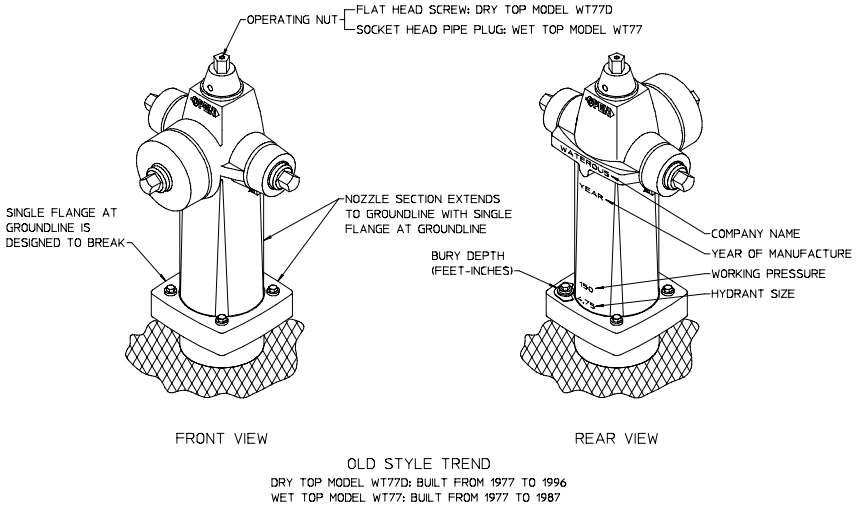
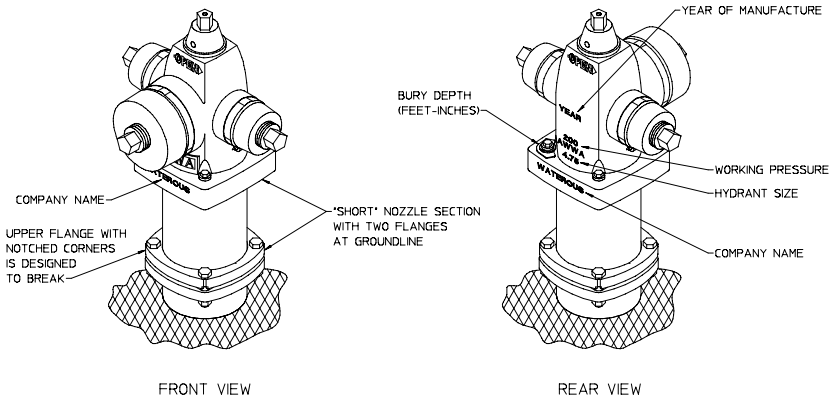


Figure 4. New Style Trend



Repair Parts

To assure prompt delivery and shipment of the correct parts, furnish the following information with each repair parts order.

1. Date of manufacture or purchase of hydrant.
2. If hydrant is New Style Trend or Old Style Trend.
3. If Old Style Trend, specify if it is a Dry Top (Flat head screw in operating nut) or a Wet Top (Socket head pipe plug in operating nut).
4. Depth of bury. As shown on depth plate (19).
5. Hydrant opening direction.
6. Check original order to see if any special parts are required. For replacement nozzles, caps, and operating nuts, be sure to furnish thread data and size and shape of nut.
7. For each part ordered, give reference number and description as found on the following parts lists.

   NOTE: Kits are available for making most repairs or extending the hydrant.

Parts List - New Style Trend

Figure 5. New Style Trend (Model WB77)

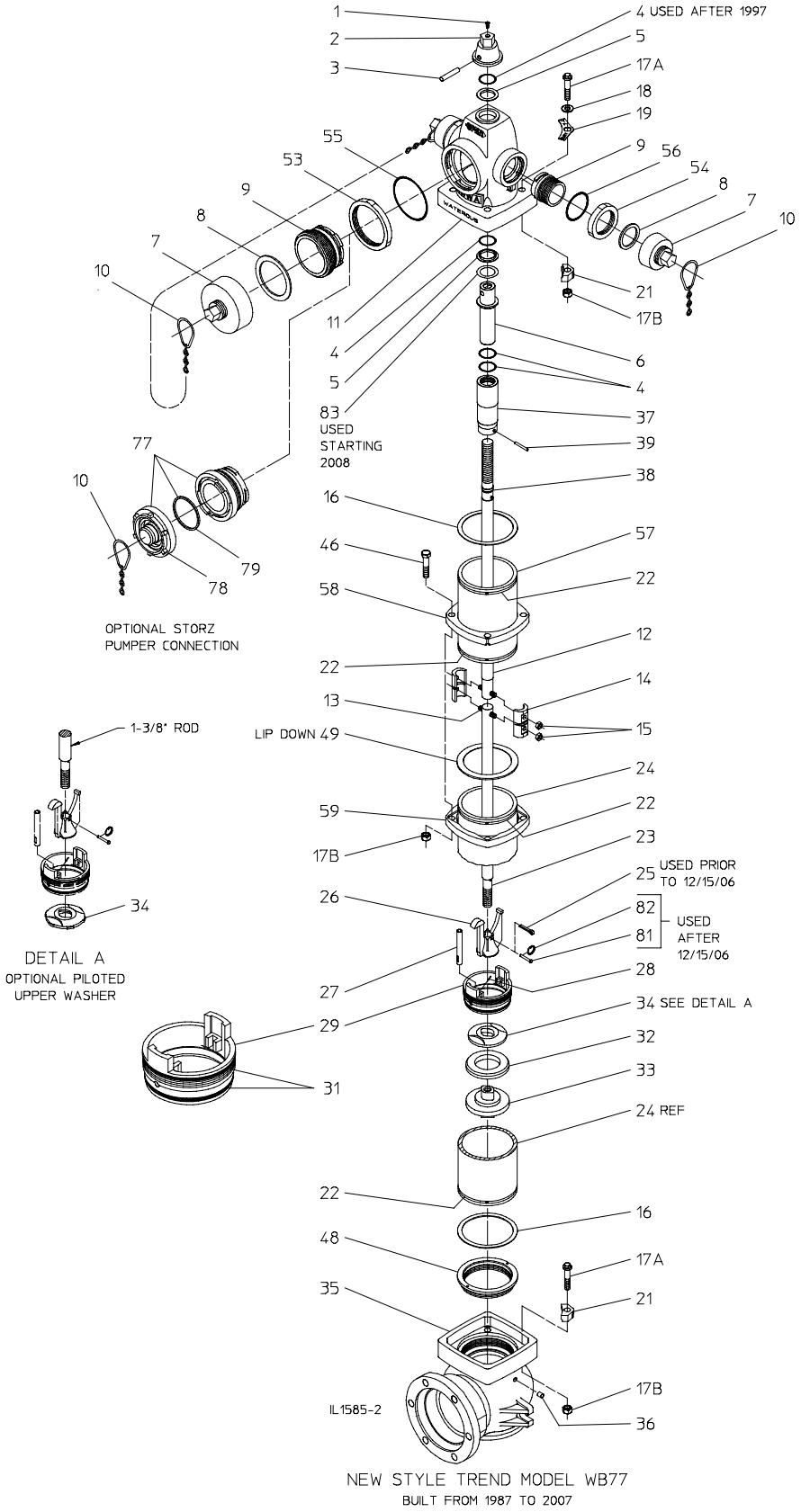


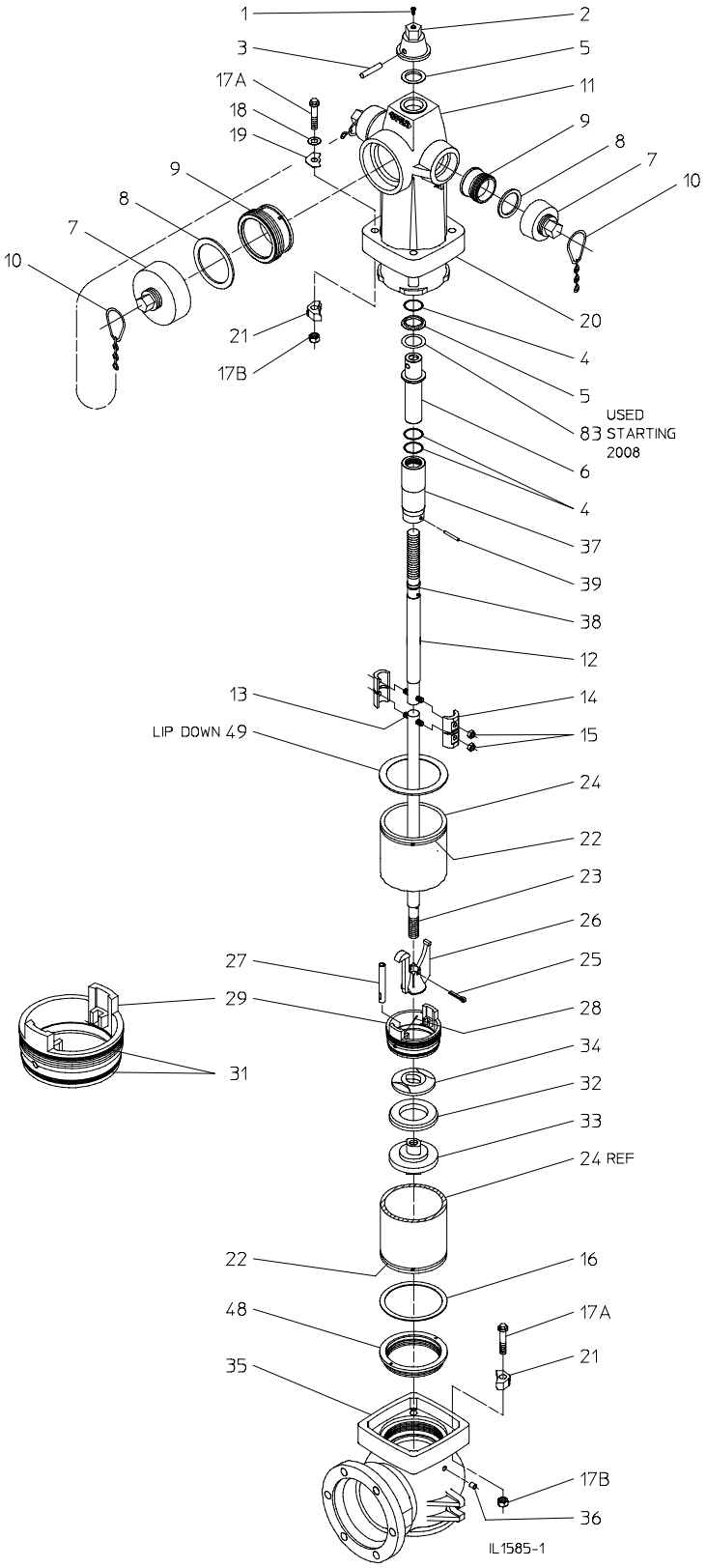
Table 2. Parts List for New Style Trend (Model WB77)

REF NO.	DESCRIPTION	MATERIAL
*1	Flat hd screw, 1/4-20 x 1/2 in.	Stainless steel
2	Weathershield nut	Cast iron
3	Spirol pin, hvy, 1/2 x 2-3/4 in.	Stainless steel
4	O-ring (weathershield nut, operating nut housing, nozzle section), 1-3/4 x 2	Buna-N
5	Thrust bushing	Sintered bronze
6	Operating nut	Bronze
*7	Nozzle cap, hose or pumper	Ductile iron
*8	Cap gasket, hose or pumper	Neoprene
*9	Nozzle, hose or pumper	Bronze
*10	Nozzle cap chain, single or double	Zinc plated steel
11	Nozzle section	Cast iron
12	Upper rod	Steel rod
*13	Coupling stud, 1/2-20 x 2-9/16 in.	Stainless steel
*14	Coupling sleeve (two halves)	Cast iron
*15	Coupling nut, 1/2-20	Brass
16	Standpipe gasket	Neoprene
*17A	Hex hd bolt, 5/8-11 x 3 in.	Zinc plated steel
*17B	Hex nut, 5/8-11	Zinc plated steel
*18	Bury depth plate washer	Zinc plated steel
*19	Bury depth plate	Aluminum
*21	Lock ring clamp	Malleable iron
22	Flange lock ring	Stainless steel
*23	Lower rod	Steel rod
24	Lower standpipe	Centrifugally cast ductile iron pipe
*25	Cotter pin, 1/4 x 1-1/2 in.	Stainless Steel
26	Crossarm	Ductile iron
*27	Drain plunger	Red brass
*28	Groove pin, 3/32 x 7/16 in.	Beryllium copper
29	Valve seat	Bronze
31	O-ring (valve seat), 4-7/8 x 5-1/4	Buna-N
32	Main valve rubber	Urethane
33	Lower valve washer	Cast iron
34	Upper valve washer	Cast iron
35	Hydrant bottom	Cast iron
*36	Drain bushing	Red brass
37	Operating nut housing	Cast iron
38	O-ring (upper rod), 1 x 1-1/4	Buna-N
39	Spirol pin, hvy, 1/4 x 2-1/4 in.	Stainless steel
46	Hex hd bolt, 5/8-11 x 3 in.	Zinc plated steel
48	Valve seat insert	Bronze
49	Standpipe gasket (with lip)	Neoprene
*53	Pumper nozzle retainer	Ductile iron
*54	Hose nozzle retainer	Ductile iron
*55	O-ring (pumper nozzle), 5-1/4 x 5-3/4	Buna-N
*56	O-ring (hose nozzle), 3-1/4 x 3-5/8	Buna-N
57	Upper standpipe	Centrifugally cast ductile iron pipe
58	Breakable flange	Gray iron
59	Standpipe flange	Ductile iron
77	Nozzle, pumper, Storz (with cap and gasket)	Bronze and Aluminum
78	Nozzle cap, pumper, Storz	Aluminum
79	Cap gasket, pumper, Storz	Buna-N
81	Clevis pin, 1/4 x 1-11/16 in.	Stainless Steel
82	Kickout ring	Stainless Steel
83	Thrust washer (used starting 2008)	Teflon

*These parts are interchangeable with Waterous Pacer parts.

Parts List - Old Style Dry Top Trend

Figure 6. Old Style Dry Top Trend (Model WT77D)



OLD STYLE DRY TOP TREND MODEL WT77D
BUILT FROM 1977 TO 1996

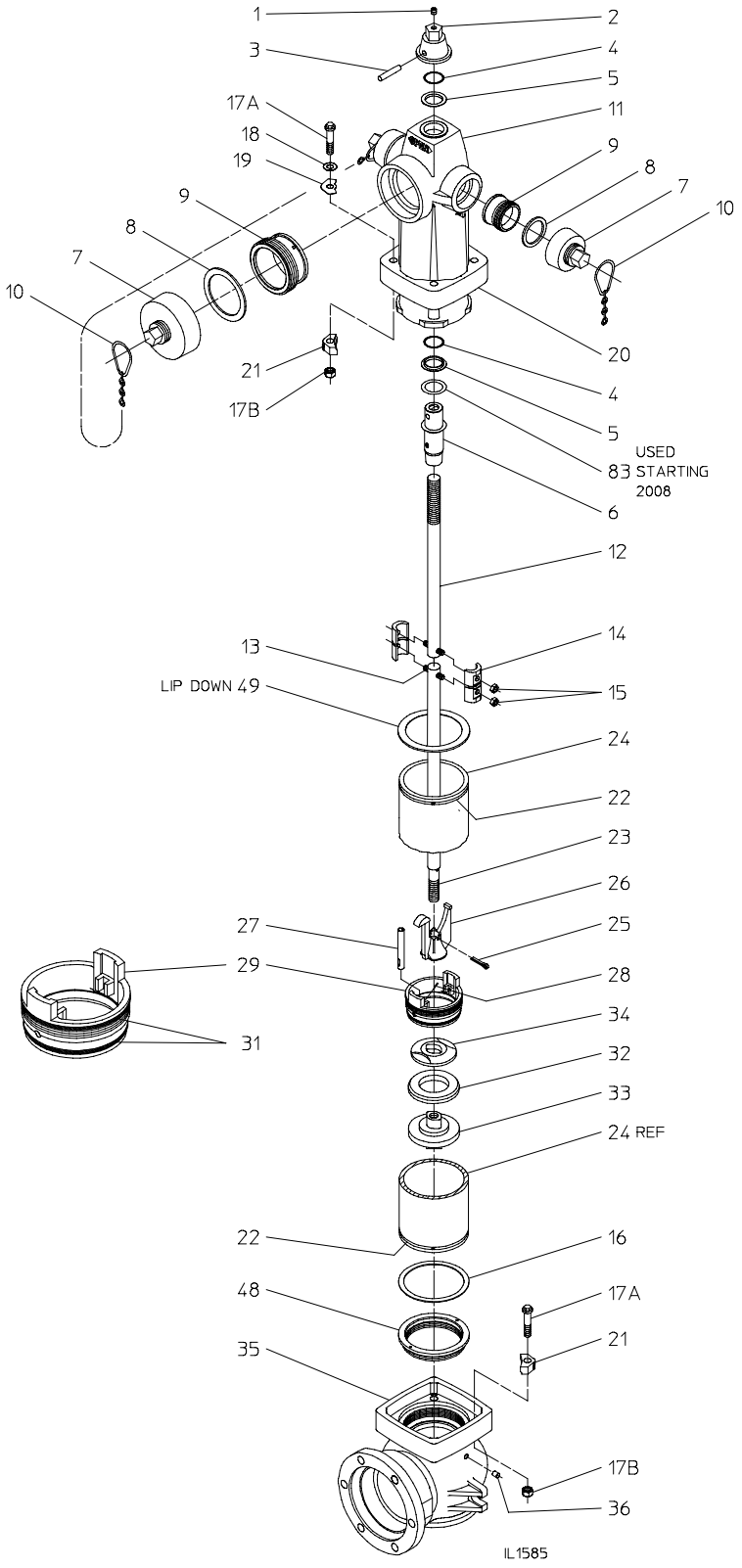
Table 3. Parts List for Old Style Dry Top Trend Model WT77D)

REF NO.	DESCRIPTION	MATERIAL
*1	Flat hd screw, 1/4-20 x 1/2 in.	Stainless steel
2	Weathershield nut	Cast iron
3	Spirol pin, 1/2 x 2-3/4 in.	Stainless steel
4	O-ring (operating nut housing, nozzle section), 1-3/4 x 2	Buna-N
5	Thrust bushing	Delrin
6	Operating nut	Bronze
*7	Nozzle cap, hose or pumper	Ductile iron
*8	Cap gasket, hose or pumper	Neoprene
*9	Nozzle, hose or pumper	Bronze
*10	Nozzle cap chain, single or double	Zinc plated steel
11	Nozzle section	Cast iron
12	Upper rod	Steel rod
*13	Coupling stud, 1/2-20 x 1-9/16 in.	Stainless steel
*14	Coupling sleeve (two halves)	Cast iron
*15	Coupling nut, 1/2-20	Brass
16	Standpipe gasket	Neoprene
*17A	Hex hd bolt, 5/8-11 x 3 in.	Zinc plated steel
*17B	Hex nut, 5/8-11	Zinc plated steel
*18	Bury depth plate washer	Zinc plated steel
*19	Bury depth plate	Aluminum
20	Nozzle section flange	Cast iron
*21	Lock ring clamp	Malleable iron
22	Flange lock ring	Stainless steel
*23	Lower rod	Steel rod
24	Lower standpipe	Centrifugally cast ductile iron pipe
*25	Cotter pin, 1/4 x 1-1/2 in.	Stainless Steel
26	Crossarm	Ductile iron
*27	Drain plunger	Red brass
*28	Groove pin, 3/32 x 7/16 in.	Beryllium copper
29	Valve seat	Bronze
31	O-ring (valve seat), 4-7/8 x 5-1/4	Buna-N
32	Main valve rubber	Urethane
33	Lower valve washer	Cast iron
34	Upper valve washer	Cast iron
35	Hydrant bottom	Cast iron
*36	Drain bushing	Red brass
37	Operating nut housing	Cast iron
38	O-ring (upper rod), 1 x 1-1/4	Buna-N
39	Spirol pin, 1/4 x 2 in.	Stainless steel
48	Valve seat insert	Bronze
49	Standpipe gasket (with lip)	Neoprene
83	Thrust washer (used starting 2008)	Teflon

*These parts are interchangeable with Waterous Pacer parts.

Parts List - Old Style Wet Top Trend

Figure 7. Old Style Wet Top Trend (Model WT77)



OLD STYLE WET TOP TREND MODEL WT77
BUILT FROM 1977 TO 1987

Table 4. Parts List for Old Style Wet Top Trend Model WT77)

REF NO.	DESCRIPTION	MATERIAL
1	Headless pipe plug, 1/4 NPT	Bronze
2	Weathershield nut	Cast iron
3	Spirol pin, 1/2 x 2-3/4 in.	Stainless steel
4	O-ring (Weathershield nut, nozzle section), 1-3/4 x 2	Buna-N
5	Thrust bushing	Delrin
6	Operating nut	Bronze
*7	Nozzle cap, hose or pumper	Ductile iron
*8	Cap gasket, hose or pumper	Neoprene
*9	Nozzle, hose or pumper	Bronze
*10	Nozzle cap chain, single or double	Zinc plated steel
11	Nozzle section	Cast iron
12	Upper rod	Steel rod
*13	Coupling stud, 1/2-20 x 1-9/16 in.	Stainless steel
*14	Coupling sleeve (two halves)	Cast iron
*15	Coupling nut, 1/2-20	Brass
16	Standpipe gasket	Neoprene
*17A	Hex hd bolt, 5/8-11 x 3 in.	Zinc plated steel
*17B	Hex nut, 5/8-11	Zinc plated steel
*18	Bury depth plate washer	Zinc plated steel
*19	Bury depth plate	Aluminum
20	Nozzle section flange	Cast iron
*21	Lock ring clamp	Malleable iron
22	Flange lock ring	Stainless steel
*23	Lower rod	Steel rod
24	Lower standpipe	Centrifugally cast ductile iron pipe
*25	Cotter pin, 1/4 x 1-1/2 in.	Stainless Steel
26	Crossarm	Ductile iron
*27	Drain plunger	Red brass
*28	Groove pin, 3/32 x 7/16 in.	Beryllium copper
29	Valve seat	Bronze
31	O-ring (valve seat), 4-7/8 x 5-1/4	Buna-N
32	Main valve rubber	Urethane
33	Lower valve washer	Cast iron
34	Upper valve washer	Cast iron
35	Hydrant bottom	Cast iron
*36	Drain bushing	Red brass
48	Valve seat insert	Bronze
49	Standpipe gasket (with lip)	Neoprene
83	Thrust washer (used starting 2008)	Teflon

*These parts are interchangeable with Waterous Pacer parts.

Overhaul Instructions

Disassembling the Hydrant

Refer to the following diagrams:

1. Close valve in water main, remove a nozzle cap, and open hydrant valve to make sure that water is turned off.
2. Drive out spirol pin (3) and pull off weathershield nut (2).

3a. ***New Style Trend (See Figure 8):***

At the nozzle section, remove bolts (17A), nuts (17B) and clamps (21) from underneath flange of the nozzle section (11). Depth plate (19) and plain washer (18) will come off with bolts.

NOTE: If clamps (21) should stick underneath the flange of the nozzle section (11), it may be necessary to drive them out.

3b. ***Old Style Trends***
(See Figure 9 - Dry Top)
(See Figure 10 - Wet Top)

At the groundline flange, remove bolts (17A), nuts (17B) and clamps (21) from underneath flange (20). Depth plate (19) and washer (18) will come off with bolts.

NOTE: If clamps (21) should stick underneath the flange of the nozzle section (20), it may be necessary to drive them out.

4. Remove nozzle section (lifting upwards). On Old Style Trends, flange (20) may remain on the nozzle section (11). **Use proper handling techniques to avoid injury**.
5. Remove upper thrust bushing (5) from the nozzle section (11). Remove O-ring (4) and lower thrust bushing (5) from operating nut (6).
6. Unscrew operating nut (6) from the upper rod (12).

NOTE: On New Style WB77 and Old Style Dry Top WT77D models, the operating nut housing (37) may remain on the upper rod (12). If operating nut housing (37) needs repair, see Step 12 and Figure 13.

7. Carefully lower disassembly wrench into standpipe over operating rod, and engage lugs of valve seat (29). See Figure 11.

CAUTION

Do not drop disassembly wrench into hydrant; it may damage valve seat and related parts.

8. Insert a three or four foot heavy steel bar (approximately 1 in. diameter) through eye of wrench, and turn in a counterclockwise direction to remove complete operating rod and valve assembly.
9. When valve seat (29) is clear of threads in hydrant bottom (35), remove disassembly wrench and lift out operating rod assembly.
10. To disassemble lower portion of operating rod, remove cotter pin (25) or clevis pin (81) and kick-out ring (82). Hold rod (23) with a pipe wrench or in a vise, and unscrew lower washer (33) with a 1-9/16 end wrench or suitable adjustable wrench. (Main valve (32), upper washer (34), valve seat (29), and cross arm (26) will come off with lower washer.) Slide drain plunger (27) from valve seat. Remove O-rings (31). Do not remove groove pin (28), which guides drain plunger, unless it is damaged. See Figure 12.
11. Disassemble breakable coupling, unscrew nuts (15), and remove rod coupling halves (14) which join upper rod (12) to lower rod (23). Do not remove studs (13) unless they are damaged. (Breakable coupling disassembly is usually not necessary unless coupling parts are damaged.)
12. Operating nut housing (37) removal, see Figure 13 (New Style WB77 and Old Style Dry Top WT77D models only). Drive out spirol pin (39) with a suitable punch and pull housing (37) off upper rod (12). Remove O-rings (4) from inside of housing and O-ring (38) from upper rod (12). A 1-1/4 in. ID thin wall sleeve slipped over the rod threads will aid in removing the O-ring (38).

NOTE: Removal of housing (37) is usually not necessary unless the housing (37) or upper rod (12) will be replaced.

NOTE: When a supply of gaskets and O-rings are available, always install new ones when reassembling the hydrant. Clean dirt from O-ring grooves.

Reassembling the Hydrant

Note: Where grease is specified, use Citgo Clarion® Food Machinery Grease No. 2 (formerly named Citgo Mystik® FG-2 Food Machinery Grease).

1. If operating nut housing (37) was removed, install O-rings (4) in housing. Install O-ring (38) in upper rod (12). A 1-1/4 in. ID thin wall sleeve slipped over the rod threads will aid in O-ring (38) installation. Coat all O-rings with grease and slide housing onto upper rod (12). Align pin hole in housing with hole in rod and install spirol pin (39). See Figure 13. (Does not apply to Old Style Wet Top Model WT77.)
2. Assemble breakable coupling. Slide rod coupling halves (14) onto the studs (13) in the upper and lower rods (12, 23) and install coupling nuts (15). See Figure 12.
3. If necessary, install new groove pin (28) in valve seat (29). Slide drain plunger (27) into seat with oblong hole at lower end. Grease O-ring grooves in valve seat and install O-rings (31). Be sure to remove any twists.
4. Slide crossarm (26) and valve seat (29) on operating rod (23). Position main valve rubber (32) and upper washer (34) on lower washer (33). Screw lower washer onto rod, engaging diamond boss on lower washer in matching recess in crossarm. Position valve seal against valve seat (29) and tighten lower washer with a pull of about 50 lbs on a 12 inch wrench. Tighten enough to permit installation of the clevis pin (81) and kick-out ring (82).
5. Coat threads of valve seat (29) with grease. Carefully lower assembled operating rod into standpipe until valve seat rests on threads in hydrant bottom. Grasping rod (12) firmly with both hands, slowly turn in a counterclockwise direction until threads engage, then turn clockwise until it is hand-tight.
6. Slowly lower disassembly wrench over operating rod (12) in standpipe, and engage it with valve seat (29). Insert a 3 or 4 foot heavy steel bar through eye of wrench and tighten valve seat securely in hydrant bottom. Remove wrench.

CAUTION

Do not exceed 200 lb-ft torque (50 lb pull on the end of a 4 ft bar). One person using a bar 3 to 4 feet long can easily exert enough force to tighten valve seat. Further tightening may make future seat removal more difficult.

7. Pull rod up as far as it will go (main valve will now be closed). Hold in this position while an assistant slowly turns on the water.

⚠ WARNING

To prevent serious personal injury, do not stand over rod when assistant turns on the water.

8. Visually check for possible leaks before proceeding with the next step.
9. Grease threads on upper rod (12) and thread operating nut (6) about four turns onto upper rod.
10. Grease thrust and bearing surfaces of operating nut (6). Slip Teflon thrust washer (83) and one thrust bushing (5) over operating nut. The flange of the thrust bushing (5) must rest on the thrust washer (83).

    NOTE: To prevent damage to the nozzle section O-ring (4), do not install until step 11f or 12g.

New Style Trend Model WB77 Only:

11a. Make sure lock ring (22) is properly installed in the standpipe groove.

11b. Install standpipe gasket (16) on standpipe.

11c. Lower nozzle section (11) onto operating nut (6) and rotate nozzle section to desired position.

11d. Insert a suitable punch or screwdriver in 1/2 in. diameter hole in operating nut (6). Turn in the closing direction until the lower face of the nozzle section (11) barely contacts the gasket (16).

11e. Install clamps (21), bolts (17A) and nuts (17B) in flange of the nozzle section and tighten finger tight. Be sure to install depth plate (19) and washer (18) in proper position. Make sure all clamps are seated properly up under flange and tighten all bolts and nuts evenly.

11f. Slip O-ring (4) over operating nut (6) and into the bore of the nozzle section (11).

11g. Install upper thrust bushing (5) on operating nut (6). Push down until bushing flange rests on top of the nozzle section (11).

11h. Install weathershield nut (2) on operating nut (6). Line up pin holes and install spirol pin (3).

NOTE: Starting in 1998, new style trend models have an additional O-ring (4) in the weathershield nut which may be replaced. Coat the O-ring with grease before the weathershield nut is re-installed.

11i. Lubricate hydrant: (Refer to Figure 2.)

- If oil was drained during disassembly, remove flat head screw and add 2 oz. of oil through opening. Replace screw.

⚠WARNING

Do not add more than 2 oz. of oil.

- If oil was not drained during disassembly, remove flat head screw and add approximately one tablespoon of oil through opening. Replace screw.

⚠WARNING

Do not add more than 1/2 oz. of oil.

Old Style Trend Models WT77, WT77D Only:

12a. Make sure lock ring (22) is properly installed in the standpipe groove.

12b Install standpipe gasket (49) on standpipe with lip pointing down.

12c. Lower nozzle section (11) onto operating nut (6) and rotate nozzle section to desired position. Note that flange (20) should be hanging loose on the nozzle section. If not, slide the flange up and onto the nozzle section. Rotate flange so that its recesses engage ears on the nozzle section.

12d Insert a suitable punch or screwdriver in 1/2 in. diameter hole in the operating nut (6). Turn in the closing direction until the face of the nozzle section (11) barely contacts gasket (49).

12e. Make sure flange (20) is properly positioned on the nozzle section (11). The ears on the nozzle section must engage the recesses in the flange.

12f. Install clamps (21), bolts (17A) and nuts (17B) in flange (20) and tighten finger tight. Be sure to install depth plate (19) and washer (18) in proper position. Make sure all clamps are seated properly up under the flange and tighten all bolts and nuts evenly.

12g. Slip O-ring (4) over operating nut (6) and into the bore of the nozzle section (11).

12h. Install upper thrust bushing (5) on operating nut (6). Push down until the bushing flange rests on top of the nozzle section (11).

12i. Install weathershield nut (2) on operating nut (6). Line up pin holes and install spirol pin (3).

NOTE: Old Style Wet Top Models WT77 have an additional O-ring (4) in the weathershield nut which may be replaced. Coat the O-ring with grease before the weathershield nut is re-installed.

12j. Lubricate hydrant: (Refer to Figure 2.)

Dry Top Model WT77D:

- If oil was drained during disassembly, remove flat head screw and add 2 oz. of oil through opening. Replace screw.

⚠WARNING

Do not add more than 2 oz. of oil.

- If oil was not drained during disassembly, remove flat head screw and add approximately one tablespoon of oil through opening. Replace screw.

⚠WARNING

Do not add more than 1/2 oz. of oil.

Wet Top Model WT77:

- Remove pipe plug and add approximately one tablespoon of oil through opening. Replace pipe plug.

Overhaul Instruction Diagrams

Figure 8. Overhaul Diagram - New Style Model WB77

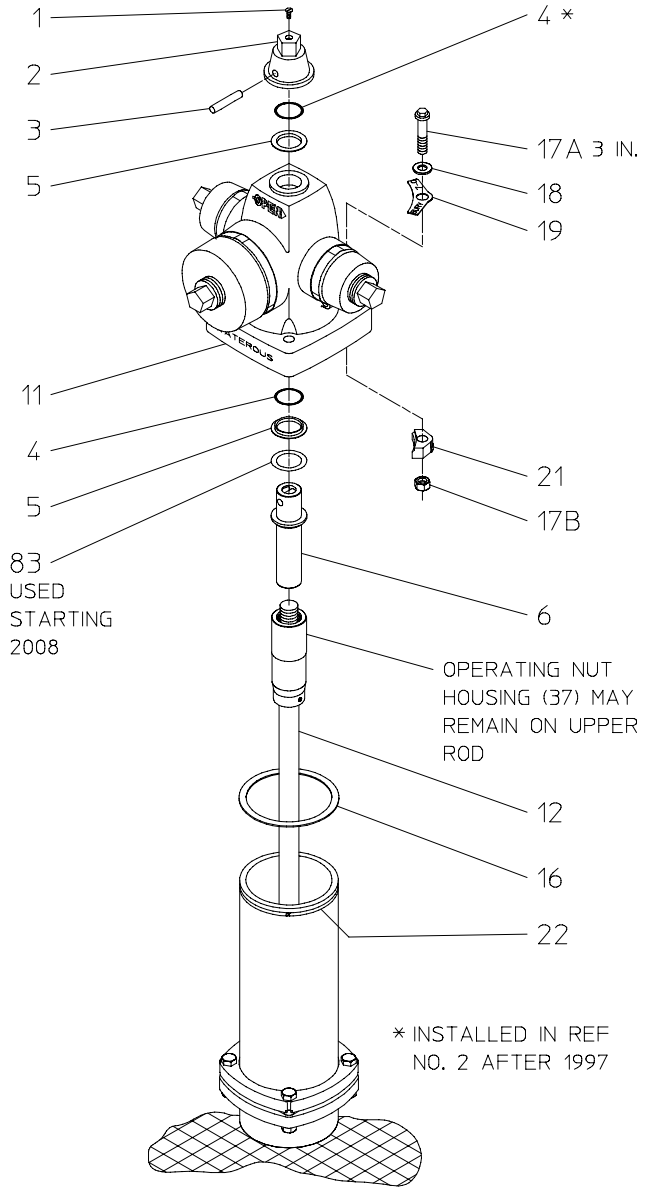
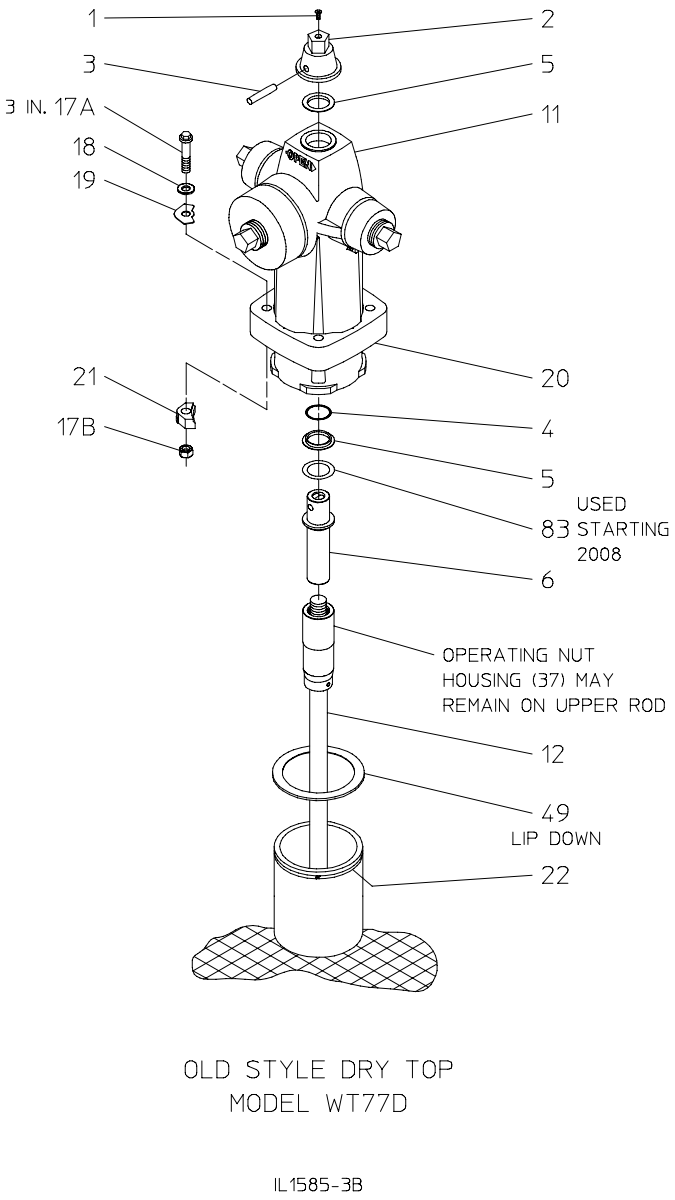


Figure 9. Overhaul Diagram - Old Style Dry Top Model WT77D



Overhaul Instruction Diagrams

Figure 10. Overhaul Diagram

Old Style Wet Top Model WT77

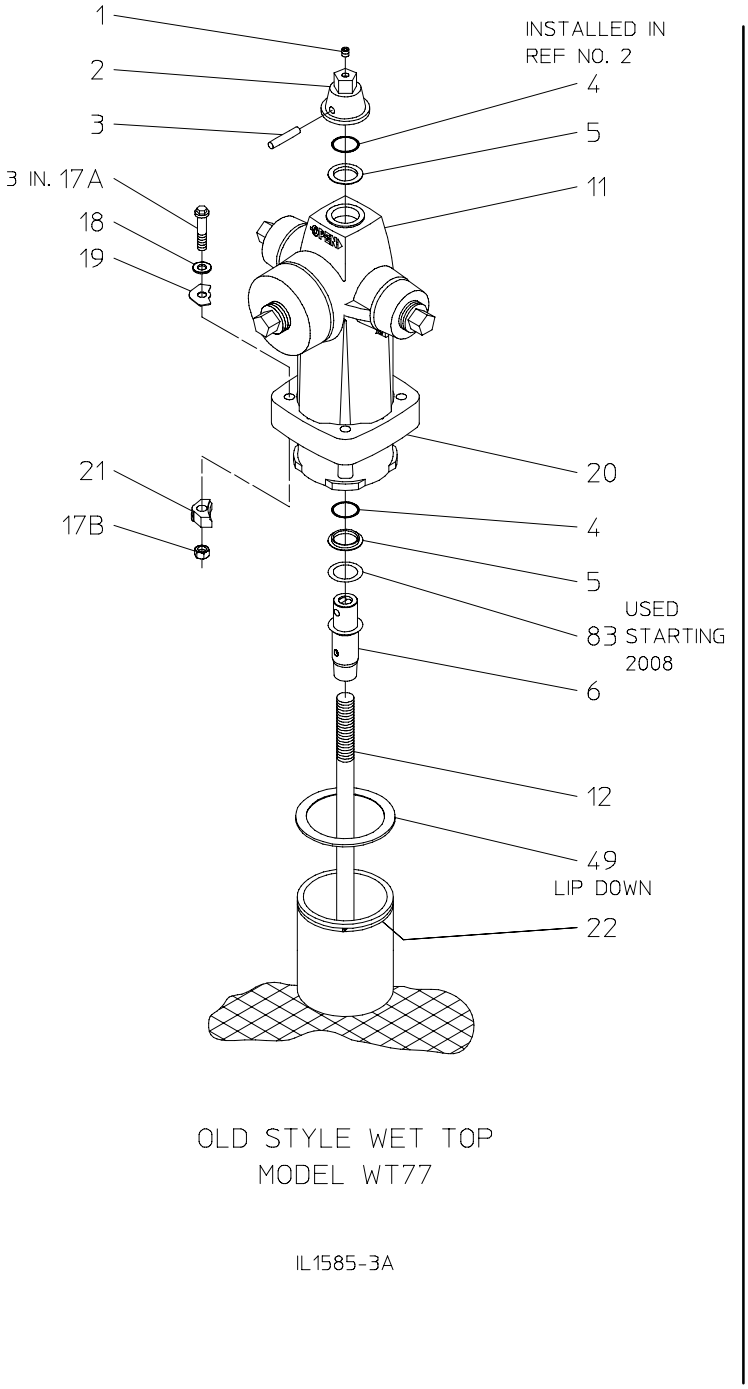
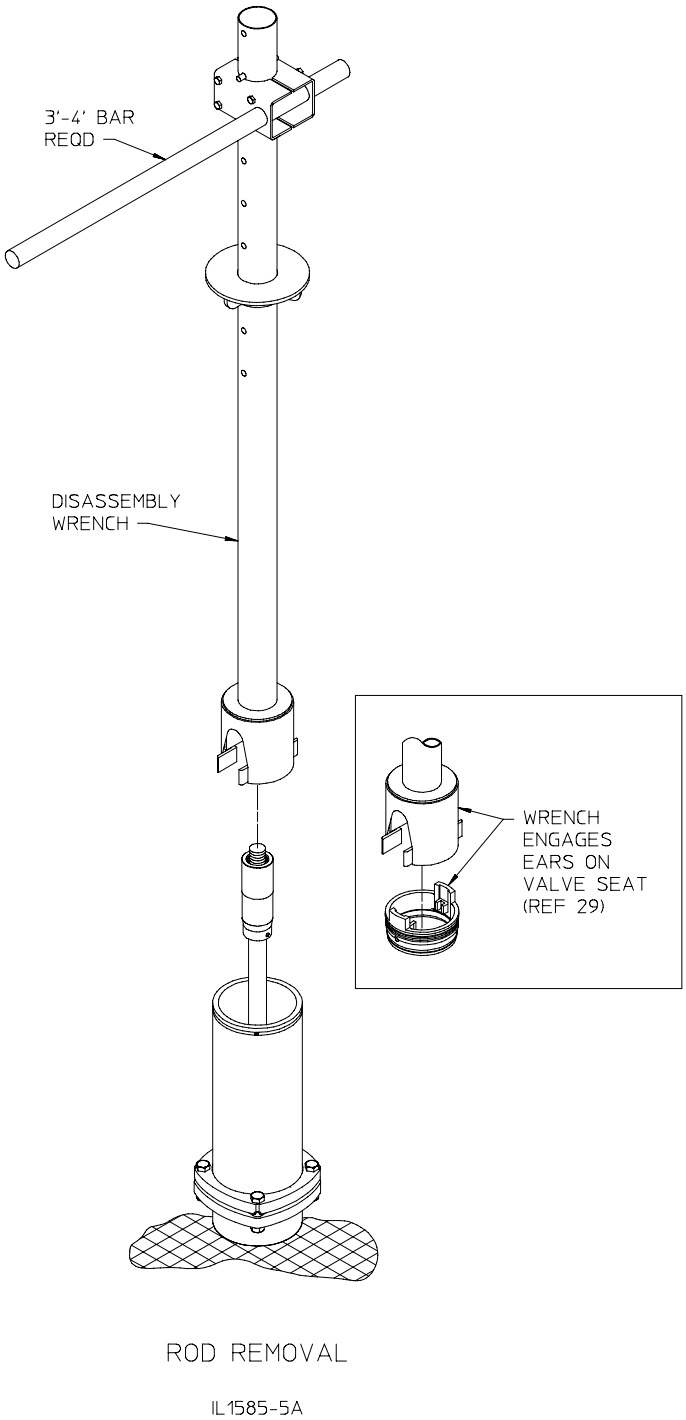


Figure 11. Rod Removal



Overhaul Instruction Diagrams

Figure 12. Rod Disassembly

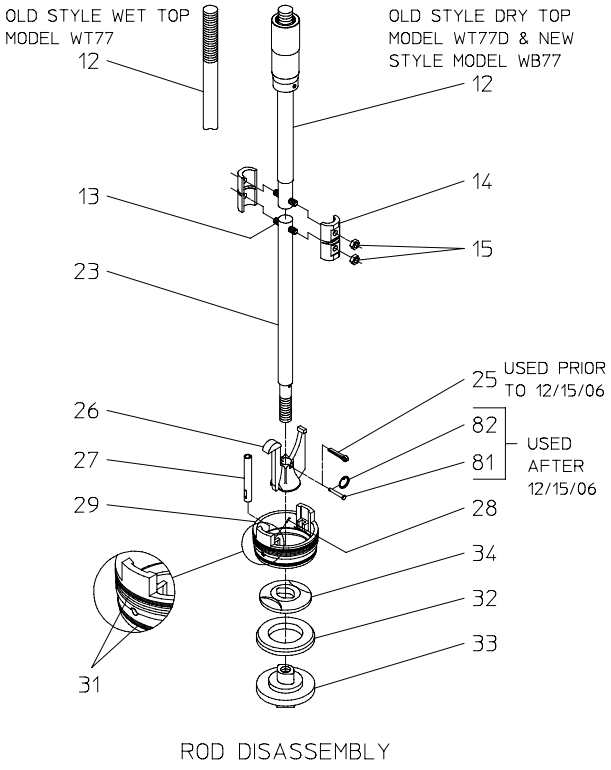


Figure 13. Operating Nut Housing Disassembly