5-1/4” Waterous Pacer® – Traffic Damage Repair

150 PSIG Rated Working Pressure 5-1/4” Waterous Pacer Using Repair Kits K525 or K528

WARNING: Special care should be taken in the installation, inspection and repair of pressure containing devices such as valves and hydrants. FAILURE TO FOLLOW PROPER PRACTICE AND GUIDELINES CAN RESULT IN SERIOUS INJURY OR DEATH. High pressure and water hammer, due to rapid opening or closing of a hydrant or valve, can also cause major damage to the hydrant, valve, water main, fire hose, or other attached equipment.

The extent of a traffic impact may be unknown. It is considered safe practice to close the auxilliary valve ahead of the hydrant, or use another means to cut off flow and pressure to the hydrant.

Note: Where grease is specified, use an AMERICAN Flow Control recommended food grade grease. ***150 PSIG Rated 5-1/4” Waterous Pacers (See Figure 2, Page 2B-27)***

1. At the ground line, remove bolts (6B) and nuts (6C) which attach the upper and lower flanges. Discard the gasket, nuts and bolts.

   Note: If top of the hydrant is completely broken away from the lower portion of the hydrant, step 1 may not be necessary.

2. At the nozzle section, remove bolts (6A), nuts (6C) and clamps (62) from underneath the flange of the nozzle section (60). Depth plate and plain washer (61) will come off with bolts.

   Note: If clamps (62) should stick underneath the flange of the nozzle section (60), it may be necessary to drive them out.

3. If the breakable upper standpipe is fractured (hydrants built prior to June, 1980), discard upper standpipe (40) and the lower flange. A new upper standpipe with a breakable flange is furnished in kit K525.

4. Turn upper operating nut (17B) or weathershield nut (101) in the opening direction to separate the nozzle section (60) and the support (56). Remove the nozzle section, lifting upward. **Use proper handling techniques to avoid injury.**

5. Remove operating nut (17B or 17) from the nozzle section (60). (On hydrants with weathershield, it is necessary to drive out pin (102) and remove weathershield (101) before upper operating nut can be removed.)

   Note: Bushing (89) is cemented in nozzle section (60). Removing it is not necessary unless it is damaged. If replacement is necessary, see Page 2B-24.

6. Unscrew lower operating nut (17A - two-piece nuts, 17 - one-piece nut), and remove support tube (85).
7. Unscrew hex stop nut (86) from operating rod (71), and remove support (56).
8. Remove nuts (87) and rod coupling halves (67) from upper and lower rods (71 & 72). Carefully check upper rod (71) to make sure it is not bent more than 1/8 in. out of straightness. Straighten or replace if necessary. Also check studs (88) for thread damage or bending which will prevent the installation of new coupling halves. Replace studs if necessary.
9. Position upper rod (71) over lower rod (72) and install new coupling halves (67). Install nuts (87) and tighten securely.

Hydrants built prior to June, 1980 (K525)

10a. Slide breakable flange (113) over lower end of the new upper standpipe (40). (The lower end has the lock ring groove 3/8 in. from the end.) Install lock rings (64) in grooves on the upper standpipe. (Be sure flange is orientated so that the larger ID of the flange engages the lock ring properly.) See Figure 3 on Page 2B-27

Hydrants built after June, 1980 (K528)

10b. Remove lock rings (64) from the bottom of the upper standpipe (40). Remove old breakable flange (113) from the upper standpipe if it is still attached (in most cases, it will fracture and disengage itself from the upper standpipe). Slide new breakable flange (113) over the upper standpipe (40) (orient flange so that the larger ID of the flange will point down and properly engage the lock ring). See Figure 3. Install lock ring (64) in the bottom groove of the upper standpipe (40). Slide flange (113) down and over the lock ring (64).

11. Place new gasket (92) on the lower standpipe with the lip pointing down. Position the upper standpipe (40) on the lower standpipe and install bolts (6B) through flanges (113) and (63). Install nuts (6C) and tighten the four bolts evenly. Tighten to 60-70 ft-lbs of torque.

    Note: Be sure to install the upper standpipe correctly. The groove at the top must be 3/4 inch from the end. The groove at the bottom must be 3/8 inch from the end. Also, the breakable flange (113) must be at the bottom (groundline) end. See Figure 3 on Page 2B-27.

12. Grease O-ring and gasket grooves in support (56), and grease O-rings (59), gaskets (84) and lower tube seal (83). Tape threads of operating rod (71) to protect O-rings. Install support (56) onto operating rod (71), being careful not to damage O-rings on operating rod threads. Remove tape from threads.
13. Install hex stop nut (86), threading it down to end of thread. Snug up with a torque of 30 ft-lbs (30 lb at end of 12 inch wrench).
14. Grease O-ring in upper end of support tube (85). Slide tube down over operating rod (71) until it is seated on support (56).
15. Grease threads of operating rod (71) and lower bearing surface of operating nut (17A or 17). Screw lower operating nut onto rod while centering support (56) on the standpipe. Tighten operating nut (17A or 17) to securely clamp support (56) against upper standpipe (40). Be sure support (56) is centered on upper standpipe (40).

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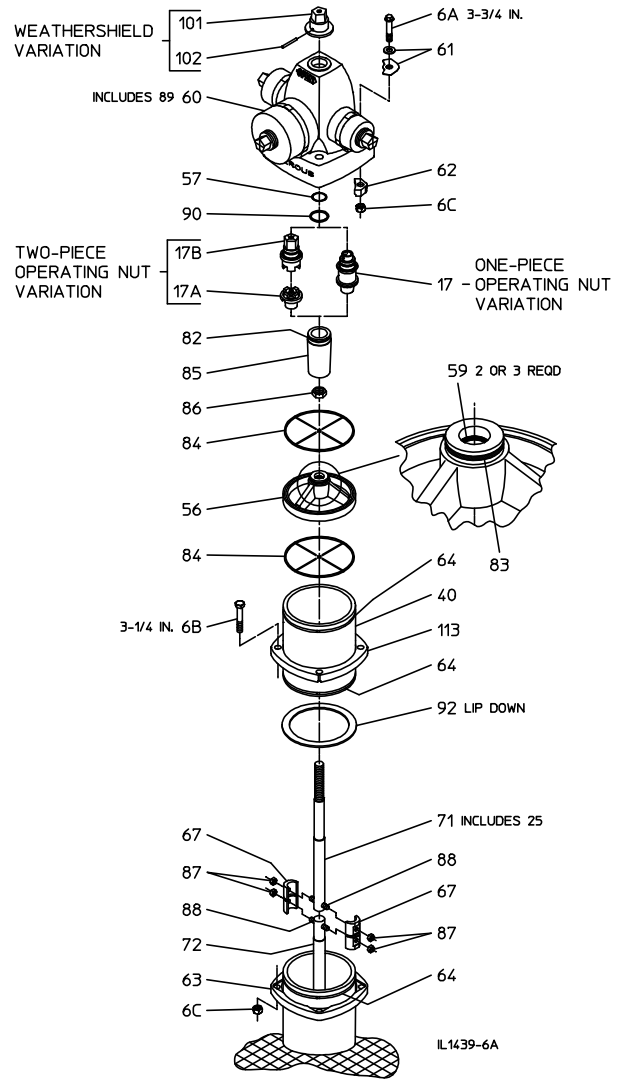
16. Grease and install thrust ring (90) and O-ring (57) in upper operating nut (17B or 17). If hydrant has a two-piece operating nut, set upper operating nut (17B) on lower operating nut (17A) and engage lugs in slots.
17. Make sure lock ring (64) is properly installed in the upper standpipe (40). Carefully lower nozzle section (60) over upper operating nut (17B or 17) until it seats on support (56). Rotate nozzle section (60) to desired position. Install clamps (62), bolts (6A) and nuts (6C) in flange of nozzle section and tighten finger tight.

Figure 2. 150 P.S.I.G. Traffic Repair



18. Be sure to install depth plate and washers (61) in proper position. Make sure all clamps are seated properly up under nozzle section flange and tighten all bolts and nuts evenly. Tighten to 60-70 ft-lbs of torque.
19. Back off operating nut slightly to release tension on operating rod. Since water pressure will hold valve up against seat, it is not necessary to turn operating nut to a dead stop if the valve and seat are in good condition.

    Lubricate hydrant as shown in Figure 4.

    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.

Figure 3. Upper Standpipe/Breakable Flange Orientation

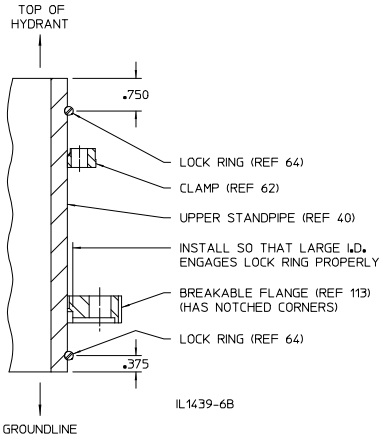
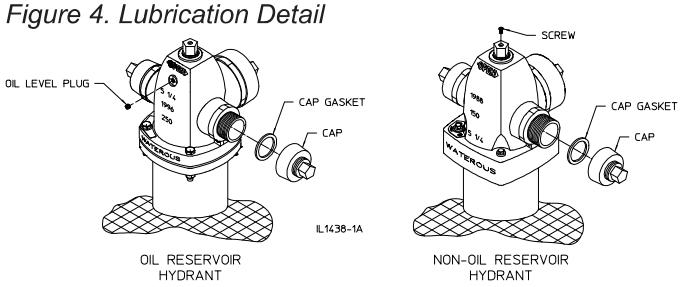


Figure 4. Lubrication Detail



1. Oil Reservoir Hydrants: Remove oil level plug. Add oil to the level of the plug. Use an AMERICAN Flow Control recommended oil.
   Non-Oil Reservoir Hydrants: Remove screw from operating nut and add approximately one tablespoon of oil through opening. Replace screw. Use an AMERICAN Flow Control recommended oil.
2. Remove all nozzle caps, clean rust or corrosion from threads of nozzles and caps. Replace cap gaskets if necessary. Apply a light coat of grease to nozzle threads before replacing cap. **Use an AMERICAN Flow Control recommended food grade grease.**

250 PSIG Rated Working Pressure 5-1/4" Waterous Pacer Using Repair Kit K528

Although it is possible to repair break features of the hydrant under pressure, the extent of a traffic impact may be unknown. It is considered safe practice to close the auxilliary valve ahead of the hydrant, or use another means to cut off flow and pressure to the hydrant.

Note: Where grease is specified, use an AMERICAN Flow Control recommended food grade grease.

250 PSIG Rated Pacers (See Figure 5, Page 2B-29)

1. At the groundline, remove bolts (6B) and nuts (6C) which attach the upper and lower flanges. Discard the gasket, nuts and bolts.

   Note: If top of the hydrant is completely broken away from the lower portion of the hydrant, step 1 may not be necessary.

2. At the nozzle section, remove bolts (6A), nuts (6C) and allow flange (62B) to slide down the upper standpipe. Depth plate and plain washer (61) will come off with bolts.

3. Turn upper operating nut (17B) or weathershield nut (101) in the opening direction to separate the nozzle section (60) and the support (56). Remove the nozzle section. **Use proper handling techniques to avoid injury.**

4. Remove operating nut (17B or 17) from the nozzle section (60). (On hydrants with weathershield, it is necessary to drive out pin (102) and remove weathershield (101) before upper operating nut can be removed.)

   Note: Bushing (89) is cemented in nozzle section (60). Removing it is not necessary unless it is damaged. If replacement is necessary, see Page 2B-24.

5. Unscrew lower operating nut (17A - two- piece nuts, 17 - one-piece nut), and remove support tube (85).

6. Unscrew hex stop nut (86) from operating rod (71), and remove support (56).

7. Remove coupling nuts (87) and sleeves (67) from upper and lower rods (71 & 72). Carefully check upper rod (71) to make sure it is not bent more than 1/8 inch out of straightness. Straighten or replace if necessary. Also check studs (88) for thread damage or bending which will prevent the installation of a new coupling. Replace studs if necessary.

8. Position upper rod (71) over lower rod (72) and install new coupling halves (67). Install nuts (87) and tighten securely.

9. Remove lock ring (64) from the bottom of the upper standpipe (40). Remove old breakable flange (113) from the upper standpipe if it is still attached (in most cases, it will fracture and disengage itself from the upper standpipe). Slide new breakable flange (113) over the upper standpipe (40). Orient flange so that the larger ID of the flange will point down and properly engage the lock ring. Install lock ring (64) in the bottom groove of the upper standpipe (40). Slide flange (113) down and over the lock ring (64). See Figure 6, on Page 2B-29.

10. Place new gasket (92) on the lower standpipe with the lip pointing down. Position the upper standpipe (40) on the lower standpipe and install bolts (6B) through flanges (113) and (63). Install nuts (6C) and tighten the four bolts evenly. Tighten to 60-70 ft-lbs of torque.

11. Grease O-ring and gasket grooves in support (56), and grease O-rings (59), gaskets (84) and lower tube seal (83). Tape threads of operating rod (71) to protect O-rings. Install support (56) onto operating rod (71), being careful not to damage O-rings on operating rod threads. Remove tape from threads. See Figure 6, on Page 2B-29.

12. Install hex stop nut (86), threading it down to end of thread. Snug up with a torque of 30 ft-lbs (30 lb at end of 12 inch wrench).

13. Grease O-ring in upper end of support tube (85). Slide tube down over operating rod (71) until it is seated on support (56).

14. Grease threads of operating rod (71) and lower bearing surface of operating nut (17A or 17). Screw lower operating nut onto rod while centering support (56) on the standpipe. Tighten operating nut (17A or 17) to securely clamp support (56) against upper standpipe (40). Be sure support (56) is centered on upper standpipe (40).

15. Grease and install thrust ring (90) and O-ring (57) in upper operating nut (17B or 17). If hydrant has a two-piece operating nut, set upper operating nut (17B) on lower operating nut (17A) and engage lugs in slots.

    Note: Be sure to install the upper standpipe correctly. The groove at the top must be 3/4 inch from the end. The groove at the bottom must be 3/8 inch from the end. Also, the breakable flange (113) must be at the bottom (groundline) end of the upper standpipe. See Figure 6, on Page 2B-29.

16. Carefully lower nozzle section (60) over upper operating nut (17B or 17) until it seats on support (56). Rotate nozzle section (60) to desired position. Install bolts (6A) and nuts (6C) through flange of nozzle section and flange (62B) and tighten finger tight. Be sure to install depth plate and washers (61) in proper position. Make sure flange (62B) is seated properly with flange lock ring (64) and tighten all bolts and nuts evenly. Tighten to 60-70 ft-lbs of torque.

17. Back off operating nut slightly to release tension on operating rod. Since water pressure will hold valve up against seat, it is not necessary to turn operating nut to a dead stop if the valve and seat are in good condition.

18. Lubricate hydrant as shown in Figure 7.

    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.

Figure 5. 250 PSIG Traffic Repair

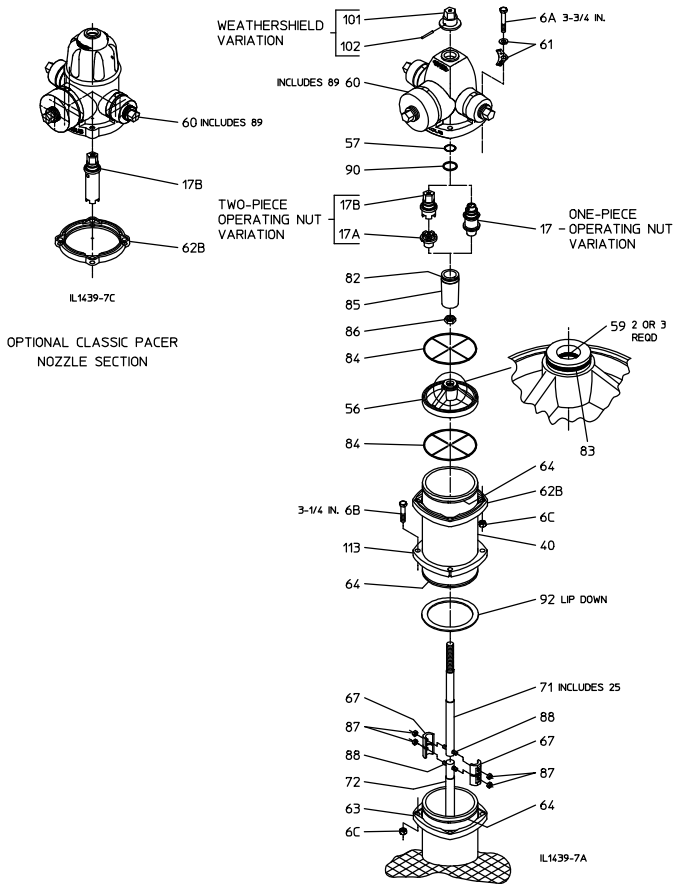


Figure 6. Upper Standpipe (Breakable Flange Orientation)

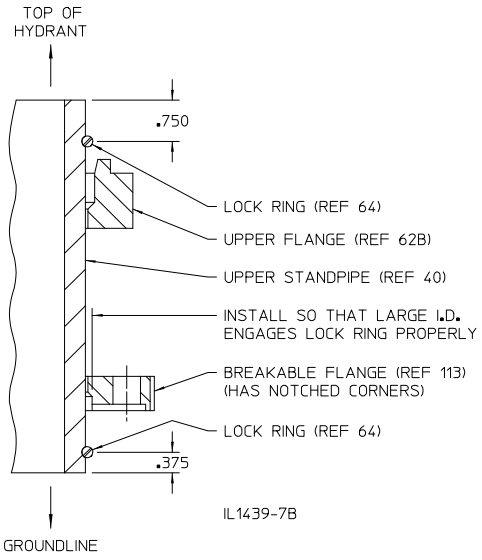
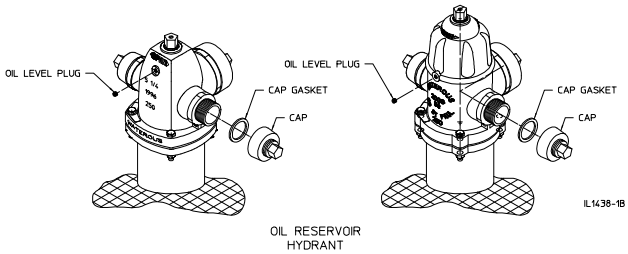


Figure 7. Lubrication Detail



1. Remove oil level plug and add oil to the level of the plug. Use an AMERICAN Flow Control recommended oil.
2. Remove all nozzle caps, clean rust or corrosion from threads of nozzles and caps. Replace cap gaskets if necessary. Apply a light coat of grease to nozzle threads before replacing cap. Use an AMERICAN Flow Control recommended oil.