

# **MAINTENANCE**

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## INTRODUCTION

This section outlines what we have determined to be an efficient and comprehensive program to extend the longevity of your equipment. As with any equipment, the care that your Butler System receives is a key factor to its performance and dependability. There are daily, weekly, monthly, first 50 hours and 500-hour checks, maintenances, services and test intervals. These items are outlined in this section, as well as, posted on the Placard attached to the inside of the Equipment Shroud Lid.

In addition, this section includes five (5) individual Maintenance Records Booklets. To extend the warranty coverage each year, you are required to perform and document all daily, weekly and monthly checks, maintenances, services and tests, as outlined in the booklet. *Booklets for years six (6) through ten (10) will also be provided, at no charge, following the completion of year four (4).*

Each year, by the annual due date, it is your responsibility to return a completed booklet, including all original receipts for maintenances, services and repairs that relate to both the Butler System and vehicle. Failure to provide these records and receipts by the annual return due date will void the express warranty. Once the warranty has been voided it *cannot* be reinstated.

A pre-owned Butler System is provided with one (1) Maintenance Records Booklet. The Maintenance Records Booklet is to be completed each week during the one-year warranty period. You are *not* required to return the booklet, however, the booklet and receipts may be requested to substantiate any claims made under the terms of the warranty.

## THE BUTLER SYSTEM'S INTENDED USE

The Butler System is intended to be used, solely, for the wet cleaning of: carpet, fabric and hard surfaces. The substitution of a Butler part or component, any alterations, adaptations, eliminations or modifications, OR, if the Butler System is used for any purpose other than its original intended use, will void the Butler System Warranty.

## PARTS AND COMPONENTS PROVIDED BY THE BUTLER CORPORATION

Parts and components provided by The Butler Corporation are not to be used for any purpose other than their original intended use and must be installed by qualified persons who possess the knowledge, skill, tools, hardware, and/or equipment to perform the installation.

Replacement parts and components supplied by The Butler Corporation are intended, solely, for the original Butler System and the original vehicle, in which the Butler System was installed. These parts and components are not to be used to create, supplement, repair, etc. any other machine or for any Butler System that has been modified or removed and reinstalled by others.

The Butler Corporation assumes no responsibility for damage or injury of any kind, due to the misuse or improper application of any part, in any way, by any person and all risks must be borne, solely, by the user. All parts and components sold are subject to exclusions, limitations and disclaimers as described in the Butler System Warranty Booklet. It is important that anyone who works with, operates or is in contact with any product purchased from The Butler Corporation must read all labels, understand and follow all directions, caution statements and Safety Data Sheets (SDS) before use.

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## CHECK, MAINTAIN, SERVICE AND TEST

**WARNING:** It is important before starting this or any other procedure, that you or anyone who operates, works with, maintains, services or repairs the Butler System and/or vehicle (Unit), be familiar with its operation and thoroughly read, understand and follow in their entirety all of the Warnings, Cautions and Notices described in their designated section (highlighted on the yellow pages) of this Owner’s Manual. **YOUR SAFETY AND THE SAFETY OF OTHERS DEPENDS ON IT.**

View Service Videos and Technical Instructions in the **SUPPORT** section at [butlersystem.com](http://butlersystem.com).

**Carefully read and understand the complete list of instructions before proceeding.**

The Butler System is designed to be exceptionally reliable and easy to maintain. It is important for performance and longevity that you follow all the guidelines as listed below. These guidelines are also posted on a Placard attached to the inside of the Equipment Shroud Lid. Complete details are described on the following pages.

Numbers (example: 1050) indicate components on Schematic.

### CHECK AND MAINTAIN THE FOLLOWING DAILY

**RECOVERY TANK:** Clean or replace Filter Bag located under the left (rear) Recovery Tank Lid, as frequently as necessary. (If you are using the optional In-Line Filter Recovery System, the same procedure will apply.)

**HIGH PRESSURE PUMP:** Check that oil level is to center of the Oil Level Indicator (7050). **DO NOT OVERFILL.**

**VACUUM/BLOWER:** Check that oil level is to center of the Oil Level Indicator(s) (7250). **DO NOT OVERFILL.**

*NOTE: At the end of each day, start the Vacuum/Blower (5000) and spray lubricating-type oil (WD-40) into the Vacuum/Blower Lubricating Port (7500) for 10–15 seconds.*

### CHECK AND MAINTAIN THE FOLLOWING WEEKLY

**RECOVERY TANK:** Clean Recovery Tank Screen Filter located under the right (front) Recovery Tank Lid. Clean interior surfaces of Recovery Tank, including Float Switch located inside tank.

**BELTS:** Check condition of Vacuum/Blower “V” Belts (8060), High Pressure Pump “V” Belt (8080), and “V” Belts (9060) located in the vehicle’s engine compartment. If “V” Belts (8060) or (9060) need replacement, replace with a pair of **matched** industrial-grade belts to original specifications **ONLY**.

**HOSES:** Check the condition of **ALL hoses**. Inspect the condition of all hoses weekly and High-Pressure Hoses more frequently. If any damage or abnormality is discovered, **repair or replace hose IMMEDIATELY**.

**GAUGE READINGS:** Please refer to “Diagnostics Checks” section in this Owner’s Manual for procedures to obtain gauge readings.

- Tachometer (9400) . . . . . Black range (LOW Speed, 900–1050 RPM)
- White range (NORMAL Speed, 1450–1550 RPM)
- Orange range (HIGH Speed, 1550–1700 RPM)
- Vacuum Gauge (5120) . . . . . Black range (8"–12" Hg)
- White range (13"–15" Hg)

High Pressure Gauge (2030) . . . . . Green range (450–550 psi)  
 Water Temperature Gauge (3045). . . . . White range (120–180°F) or higher  
 Detergent Flow Meter (4030) . . . . . Yellow Block range

**DETERGENT STRAINER:** Clean Strainer (4010) at end of hose in container.

**LEAK INSPECTION:** Check for water, detergent, cleaning products and oil leaks.

## SERVICE AND TEST THE FOLLOWING MONTHLY

**VACUUM/BLOWER:** Flush and lubricate Impeller Lobes. (See “Maintenance” section for complete Vacuum/Blower (5000) maintenance.)

**VACUUM RELIEF VALVE:** Test for free movement of Valve (5015) located on top of Vacuum/Blower (5000). Spray Shaft and Spring with WD-40.

**WAND (5140):** Clean In-Line Filter (3235) located at inlet of Wand Valve (3130 or 3330), Vacuum Opening (5150), Clean out Plug(s) opening (5160) and Wand Tubing (5170).

**STAIR TOOL (If Equipped):** See Wand (5140) description above for procedure.

**INLET STRAINER AND INLET WATER STRAINER:** Clean and inspect Inlet Strainer (1015) and Inlet Water Strainer (1090).

**VACUUM HOSE REEL (If Equipped):** Grease Vacuum Hose Reel Swivel.

**PARK INTERLOCK:** The Butler System is intended to be used only when the vehicle’s shift selector is in the PARK (P) position and the parking brake FIRMLY set. A Park Interlock is provided to help prevent accidental engagement of the system.

It is the responsibility of the owner/operator to ensure that the Park Interlock functions as intended at all times to avoid possible injury or death from vehicle runaway.

(See “Park Interlock” section for complete Park Interlock test procedures.)

## SERVICE THE FOLLOWING AT THE FIRST 50 HOURS AND EVERY 500 HOURS THEREAFTER – OR A MINIMUM OF EVERY SIX (6) MONTHS

**HIGH PRESSURE PUMP:** Change oil. (See “High Pressure Pump Maintenance” section for High Pressure Pump (2000) oil change procedure.)

**VACUUM/BLOWER:** Change oil. (See “Vacuum/Blower Maintenance” section for Vacuum/Blower (5000) oil change procedure.)

**NUTS AND BOLTS:** Check for loose nuts, bolts and fasteners. Tighten if necessary.

## VEHICLE CHECKS AND MAINTENANCE

**It is important to maintain your vehicle in accordance with the vehicle manufacturer’s recommended maintenance schedule and to check engine oil and coolant levels daily.**

**It is also important for vehicle reliability and safety that monitoring the following systems be routinely performed: tires, brakes, exhaust system, all fluid levels, belts and filters, etc. Refer to vehicle owner’s manual.**

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## VACUUM/BLOWER MAINTENANCE

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### CHECK OIL LEVEL DAILY

Some Vacuum/Blowers (5000) have 2 Gear cases with Oil Level Indicators (7250). Each will require servicing. When there are 2 Gear cases there will be no Grease Fittings (7060, 7070).

With the vehicle parked on a level surface and the Machine and engine OFF, check oil level. Oil level must be to center of Oil Level Indicator(s) (7250). DO NOT OVERFILL. (FIG 1)

**NOTE:** Vacuum/Blower (5000) oil level should be checked after the Vacuum/Blower has been shut OFF for at least one hour.

### LUBRICATE INTERNAL LOBES AT THE END OF EACH DAY

1. Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC off.
2. Start the vehicle's engine.
3. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).
4. Place the Speed Control Switch (9330) to the middle position, then momentarily seal the end of the Vacuum Hose to increase the RPM to the White range (NORMAL Speed, 1450–1550 RPM) on the Tachometer (9400).
5. Run Machine until Vacuum/Blower (5000) is warm.
6. Remove Knob (7550), located on the Instrument Panel.
7. Spray lubricating-type oil (WD-40) into the Vacuum/Blower Lubricating Port (7500) for approximately 10–15 seconds. Lubricating oil will be drawn through Hose (7600) into the Vacuum/Blower (5000), lubricating the Internal Lobes. (FIG 2)

**NOTE:** Before shutting Machine OFF place Speed Control Switch (9330) to the LOW Speed (bottom) position.

8. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.
9. Reinstall Knob (7550).
10. Shut OFF vehicle's engine and remove key from ignition.

FIG 1



FIG 2



## CLEAN AND LUBRICATE INTERNAL LOBES MONTHLY

This preventative maintenance program must be performed at the recommended intervals. However, depending upon the severity of conditions (i.e.: greasy restaurants, etc.), the cleaning and lubricating of the Internal Lobes may need to be performed more frequently.

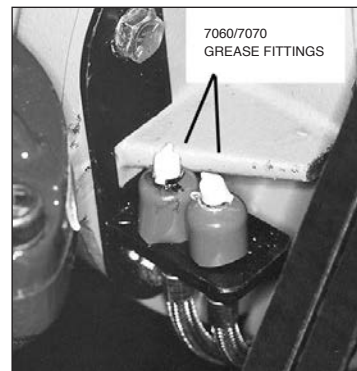
## GREASE FITTINGS MONTHLY (IF EQUIPPED)

### EQUIPMENT REQUIRED TO PERFORM THIS PROCEDURE:

- 1 • Grease gun
- 1 • Tube of grease (**use Tuthill® MD Lithium Complex Grease only**)

1. Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC OFF.
2. Start the vehicle's engine.
3. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).
4. Place the Speed Control Switch (9330) to the middle position, then momentarily seal the end of the Vacuum Hose to increase the RPM to the White range (NORMAL Speed, 1450–1550 RPM) on the Tachometer (9400).
5. Run Machine until Vacuum/Blower (5000) is warm.

FIG 3

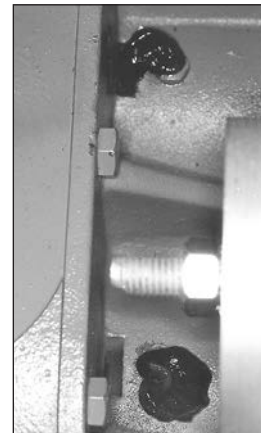


**NOTE: Grease should be at room temperature before starting this procedure.**

**NOTE: Before shutting Machine OFF place Speed Control Switch (9330) to the LOW Speed (bottom) position.**

FIG 4

6. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.
7. Shut OFF vehicle's engine and remove key.
8. Remove Equipment Shroud.
9. Pump grease SLOWLY into Grease Fittings (7060, 7070) until fresh grease is visible at the Grease Vents (7016, 7017). Wipe most of grease away, leaving enough to cover Grease Vents (7016, 7017). (FIG 4)



## PREVENTATIVE MAINTENANCE

### EQUIPMENT REQUIRED TO PERFORM THIS PROCEDURE:

- 1 • 4-Gallon Discharge Container (included with Winterizing Kit) or similar container
- 1 • 2½ Gallon Solution Container (included with Winterizing Kit) or similar container
- 1 • 3' Clear Vacuum/Blower Maintenance Hose ¼" I.D. (supplied as Standard Equipment with the Butler System)
- 1 • Can of lubricating-type oil (WD-40)

1. Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC off. **Be careful where you park**, as water, solution and dirt accumulated in the Vacuum/Blower may splash, once discharged into the 4-Gallon Discharge Container.

2. Carefully place the 4-Gallon Discharge Container without Lid, under the Outlet (tailpipe) of the Vacuum/Blower Silencer, to capture discharged solution.
3. Connect approximately 20' of Vacuum Hose to the Recovery Tank or remove approximately 20' from Vacuum Hose Reel (if equipped). Insert Vacuum Hose end into the bottom corner of the 4-Gallon Discharge Container.
4. Start vehicle's engine and warm to normal operating temperature. (**DO NOT ENGAGE** system at this time.)
5. Remove Knob (7550) from the Vacuum/Blower Lubricating Port (7500), located on the Instrument Panel.
6. Attach the 3' Clear Vacuum/Blower Maintenance Hose (supplied as Standard Equipment with the Butler System) to Vacuum/Blower Lubricating Port (7500). (FIG 5)

FIG 5



7. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).
8. Place the Speed Control Switch (9330) to the middle position, then momentarily seal the end of the Vacuum Hose to increase the RPM to the White range (NORMAL Speed, 1450–1550 RPM) on the Tachometer (9400).
9. Place the empty 2½ Gallon Solution Container near the vehicle's side door.
10. Verify that there is water in the Fresh Water Holding Tank (if equipped) and that Ball Valve (1050) is OPEN. *If not equipped with a Fresh Water Holding Tank, attach a Garden Hose to an outside water faucet and to the Cold Water Inlet Connection (1010) on the Instrument Panel. Turn ON the outside faucet and OPEN Cold Water Inlet Valve (1020) on the Instrument Panel.*
11. Start High Pressure Pump (2000) by activating the Engage Pump Switch (9320).
12. Place Temperature Adjusting Ball Valve (2080/3030) in the HOT position. (As shown on Schematic)
13. Position Hot Water Convenience Hose (3080) into 2½ Gallon Solution Container.

FIG 6



**The Hot Water Convenience Hose (3080) will become EXTREMELY HOT.**

14. SLOWLY OPEN Hot Water Convenience Valve (3070) and dispense approximately 1 gallon of HOT water with detergent into the empty 2½ Gallon Solution Container. (FIG 6)
15. Shut OFF Hot Water Convenience Valve (3070) and remove Hot Water Convenience Hose (3080) from the 2½ Gallon Solution Container and store hose.
16. Shut OFF High Pressure Pump (2000) by deactivating the Engage Pump Switch (9320).
17. Place the 2½ Gallon Solution Container onto the floor of the vehicle in front of the Instrument Panel and position 3' Clear Vacuum/Blower Maintenance Hose, attached to Vacuum/Blower Lubricating Port (7500), into the solution. (FIG 7)



FIG 7



18. Allow solution to be drawn through the Vacuum/Blower Lubricating Port (7500), washing the Internal Lobes of the Vacuum/Blower.

19. Continue until all the solution has been drawn through the Vacuum/Blower (5000). This solution will exhaust through the Silencer and the Silencer's Tailpipe into the 4-Gallon Discharge Container and vacuumed into the Recovery Tank for later disposal.

20. Let Vacuum/Blower (5000) continue to operate for 5–10 minutes, allowing time for the Internal Lobes and Silencer to dry.

21. Remove 3' Clear Vacuum/Blower Maintenance Hose from Vacuum/Blower Lubricating Port (7500) and store.

22. Spray lubricating-type oil (WD-40) into the Vacuum/Blower Lubricating Port (7500) for approximately 10–15 seconds. (FIG 8)

FIG 8



**NOTE: Before shutting Machine OFF place Speed Control Switch (9330) to the LOW Speed (bottom) position.**

23. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.

24. Reinstall Knob (7550).

25. Shut OFF vehicle's engine and remove key.

## PREVENT VACUUM/BLOWER SEIZURE

**Important: If Machine is NOT going to be used for two or more days, the following procedure must be completed. This procedure helps prevent rusting and Vacuum/Blower (5000) seizure.**

1. Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC off.

2. Start the vehicle's engine.

3. Remove Knob (7550) from Vacuum/Blower Lubricating Port (7500).

4. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).

5. Place the Speed Control Switch (9330) to the middle position, then momentarily seal the end of the Vacuum Hose to increase the RPM to the White range (NORMAL Speed, 1450–1550 RPM) on the Tachometer (9400).

6. Continue running the Vacuum/Blower (5000) for 5–10 minutes, allowing the Internal Lobes and Silencer to warm and dry thoroughly.

7. Spray lubricating-type oil (WD-40) into the Vacuum/Blower Lubricating Port (7500) for approximately 10–15 seconds. Lubricating oil will be drawn through Hose (7600) into the Vacuum/Blower (5000), lubricating the Internal Lobes.

**NOTE: Before shutting Machine OFF place Speed Control Switch (9330) to the LOW Speed (bottom) position.**

8. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.

9. Reinstall Knob (7550).

10. Shut OFF vehicle's engine and remove key.



## SERVICE THE FOLLOWING AT THE FIRST 50 HOURS AND EVERY 500 HOURS THEREAFTER – OR A MINIMUM OF EVERY SIX (6) MONTHS

### VACUUM/BLOWER OIL CHANGE

**WARNING:** It is important before starting this or any other procedure, that you or anyone who operates, works with, maintains, services or repairs the Butler System and/or vehicle (Unit), be familiar with its operation and thoroughly read, understand and follow in their entirety all of the Warnings, Cautions and Notices described in their designated section (highlighted on the yellow pages) of this Owner's Manual. YOUR SAFETY AND THE SAFETY OF OTHERS DEPENDS ON IT.

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#### EQUIPMENT REQUIRED TO PERFORM THIS PROCEDURE:

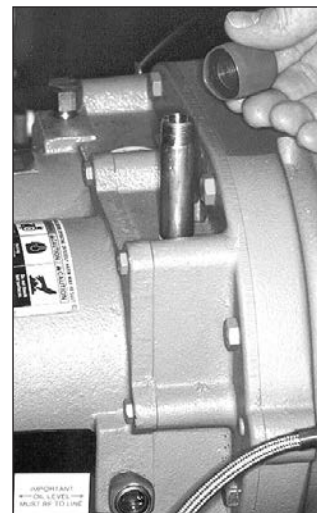
- 1 • Drain pan to catch oil
- 1 • Quart of **Gardner Denver AEON PD-XD Extreme Duty Synthetic Oil** only (if equipped with Gardner Denver Vacuum/Blower)
- OR**
- 1 • Quart of **Tuthill® MD PLUS Full Synthetic Oil** only (if equipped with Tuthill Vacuum/Blower)

**NOTE:** *Gardner Denver Vacuum/Blowers require approximately 16 oz. in the gear end (left side) and 10 oz. in the drive end (right side). Tuthill Vacuum/Blowers require approximately 6 oz. in the gear end and if equipped with two (2) sight gauges, 5 oz. in the drive end. Warm oil to room temperature for easier pouring. FILL ONLY to center of Oil Level Indicators. DO NOT OVERFILL. If overfilling occurs, drain excess oil.*

**Important:** Before starting this procedure vehicle must be parked on a level surface.

1. Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC off.
2. Start the vehicle's engine.
3. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).
4. Run Machine for approximately five (5) minutes to warm Vacuum/Blower (5000).
5. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.
6. Shut OFF vehicle's engine and remove key from ignition.
7. Remove Equipment Shroud.
8. Place small catch pans under Drain Valve Extension Hoses (7106). Remove Caps (7107) from Drain Valve Hose Extensions (7106).  
**NOTE:** *Disposable, aluminum foil-type cooking pans work well. Drain Hoses (in Recommended Supply Kit) can be used to drain oil at side door of vehicle if preferred.*
9. Remove Gear and Drive Fill Caps (7400). (FIG 9)
10. OPEN Gear and Drive Drain Valves (7105).

FIG 9



11. Allow oil to completely drain. Oil will drain slowly, approximately 10–15 minutes at room temperature.
  12. CLOSE Gear and Drive Drain Valves (7105) and reinstall Drain Valve Extension Hose Caps (7107).
  13. Add oil to Gear and Drive sides through the pipe openings, where Gear and Drive Fill Caps (7400) were removed. **FILL ONLY to center of Oil Level Indicators (7250). DO NOT OVERFILL. If overfilling occurs, drain excess oil.**
- NOTE: There will be a delay between pouring the oil and the oil rising in the Oil Level Indicators (7250).**
14. Reinstall Gear and Drive Case Fill Caps (7400).
  15. Dispose of oil.
  16. Install Equipment Shroud.

**NOTE: It is important that you familiarize yourself and comply with all municipal, county, state and federal regulations regarding the legal and proper disposal of any and all fluids, including, but not limited to: water, recovered water, cleaning products, windshield washer antifreeze, solutions, oil, etc.**

**NOTE: Vacuum/Blower oil level should be checked daily, while the vehicle is parked on a level surface and before the Machine has been in operation.**

**NOTE: It is normal for the Vacuum/Blower oil level to drop slightly, while in operation.**

## HIGH PRESSURE PUMP MAINTENANCE

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**SERVICE THE FOLLOWING AT THE FIRST 50 HOURS AND THEN EVERY 500 HOURS THEREAFTER – OR A MINIMUM OF EVERY SIX (6) MONTHS**

### HIGH PRESSURE PUMP (2000) OIL CHANGE

#### EQUIPMENT REQUIRED TO PERFORM THIS PROCEDURE:

- 1 • Drain pan to catch oil
- 1 • 3' Clear Drain Hose  $\frac{3}{8}$ " I.D. (included as Standard Equipment with the Butler System)
- 1 • 21 oz. bottle of **Cat Pumps® High-Pressure Pump Oil** only

**Important: Before starting this procedure vehicle must be parked on a level surface.**

1. Engage vehicle's shift selector into the PARK (P) position and FIRMLY set parking brake.
  2. Start the vehicle's engine.
  3. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).
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4. Start High Pressure Pump (2000) by activating the Engage Pump Switch (9320).
5. Run Machine until High Pressure Pump (2000) is warm.
6. Shut OFF High Pressure Pump (2000) by deactivating the Engage Pump Switch (9320).

FIG 10

7. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.

8. Shut OFF vehicle's engine and remove key from ignition.

9. Place the oil drain pan on the ground outside the vehicle in front of the Instrument Panel. Remove Cap and attach the 3' Clear Drain Hose to the end of Oil Drain Valve (7030) and position the end of hose into the drain pan. **NOTE: Small, disposable, aluminum foil-type cooking pan works well.**



**The 3' Clean Drain Hose will become VERY HOT.**

10. OPEN Oil Drain Valve (7030). (FIG 10)
11. Remove Filler Cap (7010) located at top of High Pressure Pump (2000).
12. Allow oil to completely drain. Oil will drain slowly (10–15 minutes at room temperature).
13. CLOSE Oil Drain Valve (7030) and remove 3' Clear Drain Hose and install Cap.
14. Add approximately 19 fluid ounces of **Cat Pumps® High-Pressure Pump Oil** only to High Pressure Pump (2000) through the fill opening where the Filler Cap (7010) was removed. Oil level can be viewed through the Oil Level Indicator Viewing Port (7040) located on the Instrument Panel. **Oil level must be centered within the red dot on the Oil Level Indicator (7050). DO NOT OVERFILL pump, as this may cause decreased lubrication and/or seal damage. If overfilling occurs, drain excess oil.**
15. Dispose of oil.

**NOTE: It is important that you familiarize yourself and comply with all municipal, county, state and federal regulations regarding the legal and proper disposal of any and all fluids, including, but not limited to: water, recovered water, cleaning products, windshield washer antifreeze, solutions, oil, etc.**

**NOTE: There will be a delay between pouring the oil and the oil rising in the Oil Level Indicator (7050). The High Pressure Pump oil level should be checked daily, while the vehicle is parked on a level surface and before the Machine has been in operation. It is normal for the oil level to drop slightly, while in operation.**

**IMPORTANT: To HELP prevent High Pressure Pump (Cat Pump) damage, DO NOT operate the pump for more than 5–10 minutes without relieving the pressure and displacing the water in the pump with cooler water. The pump's maximum temperature rating is 160°F. If the pump is left running without displacing the water, the temperature will continually increase. NEVER run the pump dry.**

## NUTS AND BOLTS

Check all nuts, bolts and fasteners and tighten if necessary.

## LEAKS

Check for water and oil leaks.

## WATER CONDITIONS

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**NOTE:** *If the water in your area is considered "hard" or is noted to have an abnormal mineral content, it may be necessary to "descale" the Machine periodically. The Butler Corporation's warranty does not cover damage or performance changes resulting from the build-up of mineral deposits, scale or descaling. In areas where abnormal water conditions exist, or descaling is required often, a water conditioning system should be considered. Descaling the Machine for the buildup of mineral deposits will require a flush procedure. The hoses and containers from the Machine Winterizing Kit or similar hoses and containers can be used to perform this procedure.*

**NOTE:** *Truckmount Descaler is required to flush the system. Because of shipping restrictions it is suggested that Truckmount Descaler be purchased from your local distributor. Also, for preventative maintenance, white vinegar may be used.*

### **WARNING**

- Read all the following procedures in their entirety before proceeding.
- Read all cautionary statements on the Truckmount Descaler label before using.
- Follow all safety procedures and dilution recommendations.
- Follow all SDS-recommended practices and procedures.

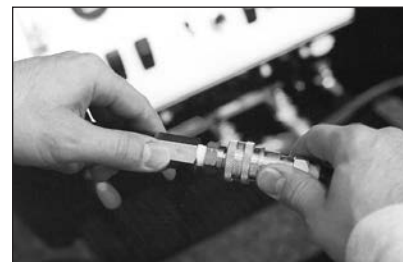
### **EQUIPMENT REQUIRED TO PERFORM THIS PROCEDURE:**

- 1 • 3<sup>1</sup>/<sub>2</sub>' length of garden-type hose with Male Garden Hose Threaded Fitting at one end (included with Winterizing Kit or similar)
- 1 • 3' length of High-Pressure Hose with Female Quick Disconnect (included with Winterizing Kit or similar)
- 1 • Empty 4-Gallon Discharge Container (included with Winterizing Kit or similar)
- 2 • Gallons of Truckmount Descaler diluted as per instructions on container

### **PROCEDURE TO PERFORM FLUSH:**

1. Engage vehicle's shift selector into the PARK (P) position and FIRMLY set parking brake.
2. Start the vehicle's engine and warm to normal operating temperature.
3. Place Temperature Adjusting Ball Valve (2080/3030) in the HOT position. (As shown on Schematic)
4. If equipped with a Fresh Water Holding Tank, position Ball Valve (1050) in the CLOSED position.
5. Secure Lid to top of empty 4-Gallon Discharge Container.
6. Place the empty 4-Gallon Discharge Container on the ground outside the vehicle, in front of the Instrument Panel. (FIG 11–12)

FIG 11



7. Momentarily OPEN then CLOSE the Hot Water Convenience Valve (3070) to release any residual pressure in the Machine.



**The Hot Water Convenience Hose will become EXTREMELY HOT.**

8. Attach the 3' length of High-Pressure Winterizing Hose to the 1/4" Male Quick Disconnect (FIG 11) at the end of the High-Pressure Hose on the High-Pressure Hose Reel (if equipped), or to Quick Connect (3090 or 3100) on Instrument Panel. (FIG 12)

9. Place the OPEN end of the 3' length of High-Pressure Hose into the opening of the 4-Gallon Discharge Container and OPEN Valve (3065) (if closed). OPEN the shut-off valve at the end of the High-Pressure Hose (on the High-Pressure Hose Reel, if equipped). (FIG 12)

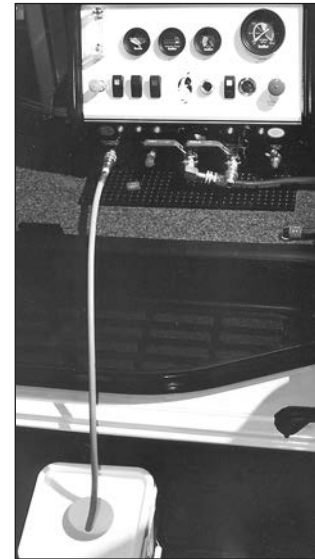


FIG 12



**The High-Pressure Hose will become EXTREMELY HOT.**

10. Place the end of a Vacuum Hose that is connected to the Recovery Tank or the Vacuum Hose Reel (if equipped) to bottom of the 4-Gallon Discharge Container. (FIG 13)

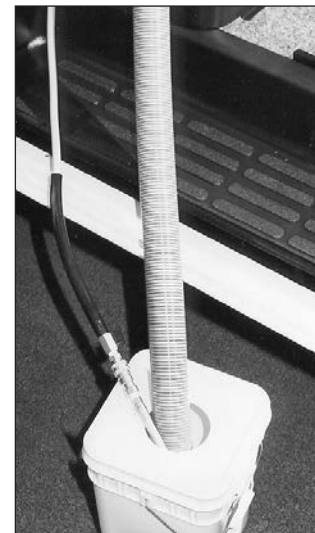


FIG 13



**The Vacuum Hose will become HOT.**

11. Place the Key Activated ON/OFF Switch (9460) to the ON position and start Machine by activating the Engage System Switch (9310).

12. Start High Pressure Pump (2000) by activating the Engage Pump Switch (9320).

13. Place the Speed Control Switch (9330) in the Black range (LOW Speed, 900–1050 RPM).

14. Slowly OPEN Cold Water Inlet Valve (1020).

15. Hold the OPEN end of the 3' High-Pressure Hose into the 4-Gallon Discharge Container. Air will be drawn through the Machine and will displace most of the liquid. Within a few moments, the Machine will start to pump air; you can identify this condition when you hear and see a “spitting” type action appearing from the 3' High-Pressure Hose. When this occurs, CLOSE Cold Water Inlet Valve (1020), then CLOSE shut-off valve on the High-Pressure Hose (if equipped).

16. Shut OFF High Pressure Pump (2000) by deactivating the Engage Pump Switch (9320).

17. Vacuum remaining liquid from 4-Gallon Discharge Container and store Vacuum Hose.

18. Add approximately 2 gallons of Descaler (diluted per instructions) to the 4-gallon Discharge Container.

19. SECURELY attach the 3<sup>1</sup>/<sub>2</sub>' length of Garden Hose to the Cold Water Inlet Connection (1010) on the Instrument Panel.

20. CLOSE Instant ON/OFF Valve (4095) to stop flow of detergent.

FIG 14

21. Place the OPEN end of the 3<sup>1</sup>/<sub>2</sub>' length of Garden Hose into the solution of Descaler. Also place the OPEN end of the 3' length of High-Pressure Hose into the solution of Descaler. Both hoses should be held and submerged to bottom of container. (FIG 14)

22. Start High Pressure Pump (2000) by activating the Engage Pump Switch (9320).

23. OPEN Cold Water Inlet Valve (1020).

24. OPEN the shut-off valve at the end of the High-Pressure Hose (on the High-Pressure Hose Reel, if equipped).

25. Increase Place the Speed Control Switch (9330) to the middle position, then momentarily seal the end of the Vacuum Hose to increase the RPM to the White range (NORMAL Speed, 1450–1550 RPM) on the Tachometer (9400).

26. Allow Descaler to circulate for required time (per instructions).



**The solution will become EXTREMELY HOT.**

27. Raise, without removing from container, both the 3<sup>1</sup>/<sub>2</sub>' Garden Hose and 3' High-Pressure Hose above the Descaler level in the container. The Descaler will continue to pump from the end of the 3' High-Pressure Hose. Air will now be drawn through the Machine and will displace most of the Descaler. Within a few moments, the Machine will start to pump air; you can identify this condition when you hear and see a “spitting” type action appearing from the 3' High-Pressure Hose. When this occurs, CLOSE Cold Water Inlet Valve (1020), then CLOSE shut-off valve on the High-Pressure Hose (if equipped).

**NOTE: Immediately after descaling, FLUSH entire system for 3–5 minutes using fresh water only. Water may be vacuumed into Recovery Tank for later disposal.**

28. Decrease RPM on Tachometer (9400) to the Black range (LOW Speed, 900–1050 RPM) by deactivating the Speed Control Switch (9330).

29. Shut OFF High Pressure Pump (2000) by deactivating the Engage Pump Switch (9320).

30. Shut OFF Machine by deactivating the Engage System Switch (9310), place the Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.

31. Shut OFF vehicle's engine and remove key from ignition.

32. Disconnect 3<sup>1</sup>/<sub>2</sub>' Garden Hose from Cold Water Inlet Connection (1010), rinse and store.

33. Disconnect 3' High-Pressure Hose from the end of the High-Pressure Hose on the High-Pressure Hose Reel (if equipped) or from the Instrument Panel. Rinse and store hose.

**IMPORTANT: Legally and properly dispose of the Descaler solution. This used solution cannot be reused. DO NOT vacuum new or used Descaler solution into Recovery Tank.**

**IF YOU HAVE FOLLOWED THE ABOVE PROCEDURES AND THE MACHINE IS NOT PERFORMING NORMALLY, PLEASE CALL OUR SERVICE DEPARTMENT FOR FURTHER ASSISTANCE.**

## PARK INTERLOCK

**WARNING:** It is important before starting this or any other procedure, that you or anyone who operates, works with, maintains, services or repairs the Butler System and/or vehicle (Unit), be familiar with its operation and thoroughly read, understand and follow in their entirety all of the Warnings, Cautions and Notices described in their designated section (highlighted on the yellow pages) of this Owner's Manual. **YOUR SAFETY AND THE SAFETY OF OTHERS DEPENDS ON IT.**

View Service Videos and Technical Instructions in the **SUPPORT** section at [butlersystem.com](http://butlersystem.com).

Carefully read and understand the complete list of instructions before proceeding.

Vehicle's shift selector must be in the PARK (P) position and the parking brake FIRMLY set at all times during unit operation.

The Butler System is provided with a Key Activated ON/OFF Switch (9460) allowing only authorized personnel to operate the Butler System, only after the owner/operator has determined it is safe to do so.

The Unit is equipped with a Park Interlock feature. The Park Interlock is designed to interrupt the Butler System from "engaging" if the vehicle's shift selector has **NOT** been placed in the PARK (P) position and to shut the Machine OFF, if the shift selector is removed from the PARK (P) position, while the Machine is running.

### **WARNING**

**It is the responsibility of the owner/operator to ensure that the Park Interlock functions as intended at all times; to avoid possible injury or death from vehicle runaway.**

## PARK INTERLOCK TEST PROCEDURE (FOR GM AND ISUZU)

**A Park Interlock Switch has been installed on the vehicle's transmission and is activated and deactivated by the position of the transmission shift linkage (the transmission shift linkage movement is controlled by the vehicle's shift selector). Environmental conditions and/or road hazards could cause the Park Interlock Switch to malfunction. Therefore, it is important that the Switch be tested on a monthly basis, or sooner, if conditions warrant, or a malfunction is suspected.**

To test that the Park Interlock is functioning as intended, the following procedures are recommended:

- Park on a level surface.
- Engage vehicle's shift selector into the PARK (P) position, FIRMLY set parking brake and turn heater/AC OFF.
- Shut OFF vehicle's engine and remove key from ignition.
- Place blocks (chocks) at wheels to prevent movement of vehicle.

1. Place the Key Activated ON/OFF Switch (9460) to the ON position and place Engage System Switch (9310) to the ON position. *The lights on the Engage System Switch (9310) will luminate green.*

2. FIRMLY press down and hold vehicle's brake pedal.

3. Insert vehicle's ignition key into the ignition and move ignition switch from the "LOCK/OFF" position to the "ACC" position. (The "ACC" position allows you to turn the steering wheel and move the vehicle's shift selector while the engine remains **OFF**). **DO NOT START the vehicle's engine.**

4. SLOWLY move the shift selector from the PARK (P) position until you hear the Electric Clutch (9390), located on the Driveshaft (8000) disengage. The Electric Clutch should disengage no later than half way between the PARK (P) position and the REVERSE (R) position. *The lights on the Engage System Switch (9310) will also turn OFF.*



**Should the vehicle begin to move, immediately place the shift selector back into the PARK (P) position and remove key.**

5. Place the shift selector back into the PARK (P) position.
6. Place ignition key back into the "LOCK/OFF" position, remove key and release vehicle's brake pedal.
7. Place the Engage System Switch (9310) back to the OFF position.
8. Place Key Activated ON/OFF Switch (9460) to the OFF position and remove Key.

**If you have followed the above procedures and the Park Interlock Switch is not performing as instructed, please call our Service Department for further assistance.**

## HIGH-PRESSURE HOSE and FITTINGS

**WARNING:** It is important before starting this or any other procedure, that you or anyone who operates, works with, maintains, services or repairs the Butler System and/or vehicle (Unit), be familiar with its operation and thoroughly read, understand and follow in their entirety all of the Warnings, Cautions and Notices described in their designated section (highlighted on the yellow pages) of this Owner's Manual. **YOUR SAFETY AND THE SAFETY OF OTHERS DEPENDS ON IT.**

View Service Videos and Technical Instructions in the SUPPORT section at [butlersystem.com](http://butlersystem.com).

Carefully read and understand the complete list of instructions before proceeding.

Fluids under pressure can be dangerous. Extreme caution must be exercised when working with fluids under pressure. High-Pressure Hose and Fittings under pressure can and do fail without warning; therefore the High-Pressure Hose and Fittings need to be inspected frequently. Conditions for failure of the High-Pressure Hose and Fittings include but are not limited to: misuse, fluid compatibility, detergent use, temperature, pressure, environment, permeation, bend radius, routing, mechanical loads, physical damage, improper end fittings and/or installation and external damage, etc.

### HIGH-PRESSURE HOSE

**NOTE:** *The Butler Corporation orders, receives, and sells High-Pressure Hose as a complete assembly (with crimped end fittings) from authorized distributors. The hose is manufactured to 1/4" SAE 100R1 Type AT industry specifications.*

The following are conditions that warrant the repair or replacement of the High-Pressure Hose and/or fittings. These conditions include, but are not limited to: damage, deterioration, distortion, kinks, wearing, hardening, cracking, charring, swelling, bubbling, softening or degrading of the hose or if the hose is showing signs of fitting slippage, fitting corrosion, leaking, bulging, cuts or gouges or if the cover is abraded, loose, or if any part of the reinforcement is exposed. High-Pressure Hose can have concealed damage that will cause the hose to be unreliable and unsafe now or in the future.

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## FIELD ATTACHABLE (REUSABLE) END FITTINGS

**The person or persons installing any fitting on any High-Pressure Hose is/are SOLELY responsible for determining whether the hose requires replacement or is suitable for new End Fittings.**

In addition to crimped End Fittings, field attachable (reusable) End Fittings are available for the 1/4" SAE 100R1 Type AT hose from distributors and retailers throughout the country. A field attachable (reusable) End Fitting must be installed by qualified individuals who possess the knowledge, skill, tools, hardware, and equipment to perform the proper installation in accordance with the hose and fitting manufacturer's instructions.

**The Butler Corporation DOES NOT crimp any fittings or install any field attachable (reusable) End Fittings onto High-Pressure Hose.**

**The Butler Corporation, its agents, representatives, and assigns accept no liability whatsoever due to the improper installation, use, or application of any fitting to any High-Pressure Hose.**

# IMPORTANT

## WARRANTY AND MAINTENANCE INFORMATION!

### Maintenance Records Booklets

**A separate Maintenance Records Binder has been supplied to provide you with a convenient location to store the current year Maintenance Records Booklet and required receipts.**

#### MAINTAINING THE WARRANTY

Service and maintenance requirements outlined in this Owner's Manual must be performed and documented in order to maintain the Butler System warranty. For new Butler Systems, five (5) individual Maintenance Records Booklets are provided as inserts, four (4) in this section of the Owner's Manual and one (1) in the Maintenance Records Binder. In order to extend the warranty coverage each year, you are required to perform and document all daily, weekly and monthly checks, maintenances, services and tests, as outlined. *Booklets for years six (6) through ten (10) will also be provided, at no charge, following the completion of year four (4).*

Each year, by the annual due date, it is your responsibility to return a completed booklet, including all original receipts for maintenances, services and repairs that relate to both the Butler System and vehicle. Failure to provide these records and receipts by the annual return due date will void this express warranty. Once the warranty has been voided it *cannot* be reinstated.

A pre-owned Butler System is provided with one (1) Maintenance Records Booklet. The Maintenance Records Booklet is to be completed each week during the one-year warranty period. You are *not* required to return the booklet, however, the booklet and receipts may be requested to substantiate any claims made under the terms of the warranty.

#### SAVE YOUR RECORDS AND RECEIPTS

**Records and receipts can be very important to thoroughly investigate and resolve any claim(s) made under the terms of the warranty; and to assist in determining whether a malfunction has been caused by lack of maintenance or service, or by a defect in material and/or workmanship. In addition, we will have no substantive means of providing you with assistance regarding any vehicle related matter; either with the manufacturer's authorized "dealer" or at the manufacturer's level, without proper records and receipts validating the required maintenances and services to the vehicle.**

#### RETURNING THE MAINTENANCE BOOKLET(S) AND RECEIPTS

The Butler Corporation will not be responsible for terminated warranties due to the loss or delay in receiving your Maintenance Records Booklet(s) and receipts. For this reason, we recommend that you use certified mail with return receipt requested when sending us your booklet and receipts.

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