

PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM

GENERAL INFORMATION

The BG PF5 Power Flush and Fluid Exchange System is not a piece of equipment, instead it is a complete transmission service. Modern automotive transmissions and their related parts suffer from overheating due to downsizing, high operating temperatures and cramped quarters. This causes the automatic transmission fluid (ATF) to oxidize rapidly, affecting the performance of the transmission in many ways.

Conventional drain and fill methods of changing the transmission fluid can only remove about one third of the transmission's actual fluid capacity. The remaining large quantity of old, oxidized fluid simply contaminates the new fluid and often the mixture causes more damage than if the old fluid had been left alone. Also, no efforts were made to chemically clean the inside of the transmission because the dissolved contaminants could not be removed.

The BG PF5 Power Flush and Fluid Exchange System is the ultimate solution to effective transmission maintenance for all types of vehicles, regardless of age.

The BG PF5 Power Flush and Fluid Exchange System begins with a thorough chemical flush with BG Quick Clean which cleans ALL internal transmission components including the valve body, which is the control center; the torque converter; oil galleys and clutch pack and filter screen. ALL externally connected components, including transmission lines and coolers, are cleaned as well. Cleaning the lines and coolers is so important that the OEM's recommend this service and offer specialized tools for cleaning these components.

Next the BG PF5 Power Flush and Fluid Exchange System uses a very simple but highly effective method of removing all the old fluid and flush while simultaneously installing new ATF of the exact specification required for each and every vehicle. The BG Transmission Service Apparatus does it cleaner, faster and more economically than conventional drain and fill methods. The same amount of ATF is consumed for each service, so it is easy for the parts department to control material cost per job.

The final step in the BG PF5 Power Flush and Fluid Exchange System is the installation of BG Automatic Transmission Conditioner, Part No. 311, to restore pliability to seals and prolong the life of the new ATF by protecting it from the ravaging effects of oxidation.

The BG PF5 Power Flush and Fluid Exchange System is not a repair service; it is a *maintenance service*. A thorough inspection of the transmission, including related components such as lines and coolers, should be performed and all repairs made before performing this service.

Check the vent on top of the transmission to be sure it is open and functioning. Inspect seal areas and gaskets and replace any that are leaking or badly deteriorated. If the pan gasket needs replacing, it is recommended that the transmission filter be replaced as well. In fact, the filter should be changed anytime a repair service requires that the pan be removed. Check hoses, metal lines and connections to be sure all are in good repair.

SAFETY REQUIREMENTS

The following instructions must be read and understood before attempting to set up or use the BG PF5 Power Flush and Fluid Exchange System.

1. Carefully read the BG PF5 Power Flush and Fluid Exchange System Reference Manual before assembling and using any part of the system.
2. Before handling any chemical, read its Material Safety Data Sheets.
3. Wear safety goggles to protect your eyes.
4. Wear Nitrile, Neoprene or PVC gloves to protect your hands.
5. Wear a long-sleeved shirt.
6. A combination of mechanical and local ventilation should be used to prevent operator exposure to noxious fumes.
7. Keep all hoses and tools away from moving engine parts.
8. Check all lines and fittings for cracks and leaks before and after service.
9. Use EXTREME CAUTION when removing transmission lines and/or adaptors before and after the service. Transmission fluid could be under pressure and will likely be very hot. Be very careful in handling connections because they will also be very hot.
10. Dispose of used Automatic Transmission Fluid in accordance with Federal, State, and Local regulations.
11. The BG PF5 Power Flush and Fluid Exchange System is designed to be used only with BG products described in this manual. The use of any other chemicals or fluids other than conventional ATF, mineral- or synthetic-based, with this system will void all warranties and could create hazardous conditions.



PF5

POWER FLUSH AND FLUID EXCHANGE SYSTEM

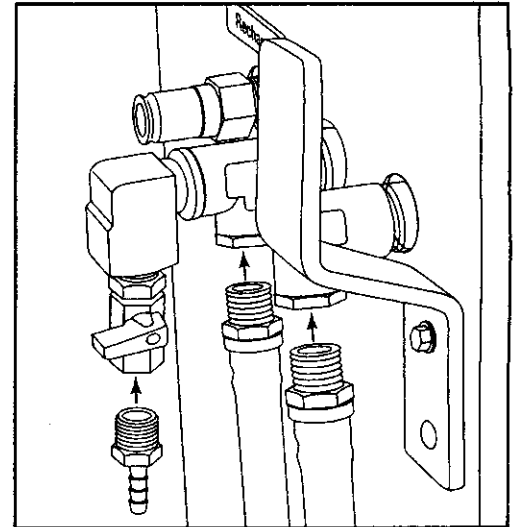
INITIAL SETUP AND CHARGING (FILLING)

1. Unpack system and check for shipping damage and missing parts and components. Place adaptors in drawer.

2. Connect service hoses to the ports on the side of the cabinet. Remove plug from drain valve and install barbed fitting as shown in the drawing at right. This drain valve is used to remove ATF from the transmission, when necessary, to make room for chemicals.

3. For initial charging (filling) of the apparatus:

A. Turn the Control lever to "Bypass/Recharge." Attach adaptor #6, or any open-end adaptor, to the end of either service hose. The adaptor opens the valve in the quick coupling to allow used fluid to flow out. Expect only a small amount of air during initial filling.



B. Attach recharge adaptor #19 to the "Recharge" port on the side of the unit. Be sure the vent valve on the side of the PF5 is closed. Apply air pressure to the adaptor until the New ATF pressure gauge reads approximately 50 PSI and the Used ATF pressure gauge reads "0." Remove air supply and turn the Control lever to "Pressure Release" until New ATF pressure gauge reads "0." This procedure will move the rubber bladder into position for initial filling. Be sure the clear hose is connected to the vent valve on the side. Place the loose end of the hose into the bottle provided. Open the vent valve.

C. Remove Manual Fill cap from the Manual Fill tube and install the included funnel. Slowly open the Manual Fill valve—there may be a small amount of air pressure or vacuum in the tank. Pour approximately 4 or 2.5 gallons of the appropriate ATF into the funnel, depending on the capacity of the tank being used. Keep filling until a full stream of fluid is visible at the vent valve on the side of the PF5. This procedure insures that the system is full and all trapped air has been removed. Allow fluid to drain from the vent valve until it is just below the Manual Fill valve on Manual Fill tube.

D. Close the vent valve and the Manual Fill valve. Either cap the funnel or remove it and replace Manual Fill cap. This cap is not a pressure seal and should only be finger tight.

E. Remove the #19 recharge adaptor. Remove the #6 open-end adaptor from the service hose.

The BG PF5 Power Flush and Fluid Exchange System is now ready for service.



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OPERATING INSTRUCTIONS

1. Start vehicle engine and run until normal operating temperature is reached.
2. Check automatic transmission fluid level. If it is more than 1 quart low, add fluid, but leave room for 11 ounces of BG Quick Clean for Automatic Transmissions. **DO NOT overfill automatic transmissions.**
3. Add the contents of one 11 ounce can of BG Quick Clean for Automatic Transmissions, Part No. 106. The vehicle should then be driven for 15 minutes. If it cannot be driven, then it should be placed on a lift so that the vehicle's wheels are above the floor. With the engine running, shift the transmission through all the gears so that the valve body in the transmission is actuated to ensure that BG Quick Clean gets to all parts. During this procedure, **make sure the brake is fully applied and drive wheels have stopped turning between gear changes to prevent damage to transmission or differential assemblies.** Vehicle should not be run more than 30 minutes after adding BG Quick Clean before performing the ATF transfusion.

Note: If the vehicle cannot be driven or placed on a lift, chock the wheels, apply brakes (including parking brake) and carefully shift transmission through the gears several times with engine running at idle speed. **CAUTION: Increasing engine RPM in this procedure will rapidly increase fluid temperature beyond acceptable limits and is not recommended.**

Vehicle is now ready for the ATF transfusion (exchange).

4. Shut off engine and locate a junction in either of the two transmission lines that will allow you to install one of the included adaptors to each end of the junction (see "Possible Points of Connection" in this manual). Separate the line at the junction chosen and attach adaptors. Use pinch off clamps on rubber lines to prevent ATF loss while connections are being made.

NOTE: Some vehicles also use the radiator to help cool the engine oil. Be sure the lines you are working with actually go to the transmission and not the engine!

5. Open the vent valve on the side of the unit to be certain that there is no pressure in the machine. Close the vent valve before attempting to use.
6. Connect BG PF5 service hoses to adaptors. Either hose can be attached to either adaptor—the BG PF5 will self-align to the flow direction.
7. Turn Control lever to "Bypass/Recharge" and start the vehicle's engine. Check for leaks.
8. With engine running, turn Control lever to "Process/Purge." The transmission's own pump will begin the transfusion immediately by pumping its used ATF into the collapsed compartment of the tank. This instantly exerts pressure on the diaphragm which forces new ATF out through the service hose and into the transmission at the same rate of flow and pressure that used ATF is being pumped into the tank via the other service hose.

PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM

This means that the level of fluid in the transmission and components remains the same at all times during the transfusion. The fluid level in the transmission does not require monitoring. For best results, the operator should be inside the vehicle shifting the transmission through its gears as in step #3 to insure that all flush and used ATF is purged from the valve body.

As the transmission continues to pump used ATF into the tank, the diaphragm is collapsed against the other side. A preset bypass regulator will open after a pressure differential exists between the New and Used ATF lines. This will route the incoming fluid around the tank and into the new ATF line going to the transmission.

Note: A few transmission pumps produce "0" pressure at idle and the engine RPM must be increased until the Used ATF gauge shows at least 10 PSI. There are also a few transmission pumps that will only produce pressure when in drive. If increasing the RPM does not produce a pressure reading, place the vehicle in drive. **CAUTION: Be certain that the parking brake is set and wheels are chocked before putting vehicle in drive. Do not leave vehicle unattended!**

The transfusion is complete when a pressure differential (approximately 15–30 PSI) is noted between the New and Used ATF gauges.

9. When the transfusion is complete, check the level of ATF in the transmission. Leave room to add 11 ounces of BG Automatic Transmission Conditioner, Part No. 311.

If some ATF needs to be removed, leave engine running, turn the Control lever to "Bypass/Recharge" and use the drain valve to dispense the amount you wish to remove.

Caution: The ATF is very hot, so use a deep container and place the end of the spout as close to the bottom as it can go to prevent splattering.

Shut off engine and turn Control lever to "Pressure Release" to remove any pressure trapped in the system. Remove adaptors and reconnect transmission fluid lines.

Add the contents of one 11 ounce can of BG Automatic Transmission Conditioner, Part No. 311, if it was not already in the new ATF.

Service is complete.



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POWER FLUSH AND FLUID EXCHANGE SYSTEM

PURGING NEW ATF

The following procedure applies to removing new ATF from a fully charged unit. This is necessary to charge the unit with a different transmission fluid or to empty the unit for maintenance.

1. Attach the #6 open-end adaptor to the end of either service hose and place end into appropriate receptacle.
2. Locate the Bladder Inverting port inside the unit and attach #19 recharge adaptor.
3. Turn Control lever to "Process/Purge."
4. Apply shop air into the #19 recharge adaptor until only air is exhausted from the service hose. (Too much air pressure will cause most of the air to bypass the tank resulting in a mixture of air and ATF to be exhausted.)
5. Turn Control lever to "Pressure Release" to complete purge process.

The BG PF8 Heavy Duty Power Flush and Fluid Exchange System is now empty and can be recharged with a different ATF.



PF5

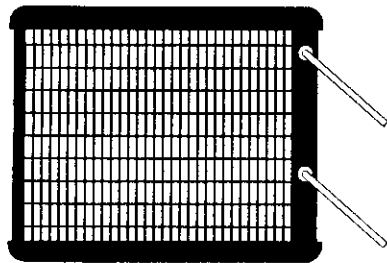
POWER FLUSH AND FLUID EXCHANGE SYSTEM

POSSIBLE POINTS TO MAKE CONNECTIONS

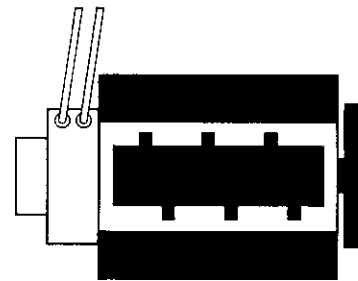
(Note: It is only necessary to disconnect one line)

CAUTION: Be sure the line you have is a transmission fluid line and not an engine oil line!

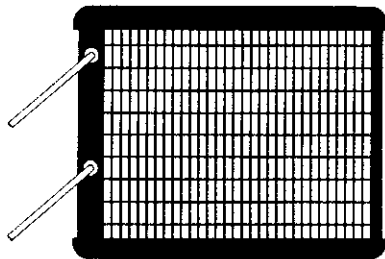
Crossflow radiator with ATF cooler on side



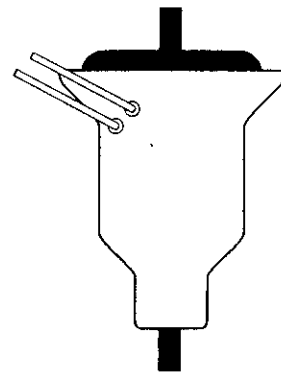
Transmission front wheel drive



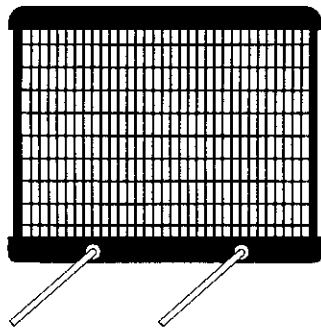
Crossflow radiator with ATF cooler on opposite side



Transmission rear wheel drive

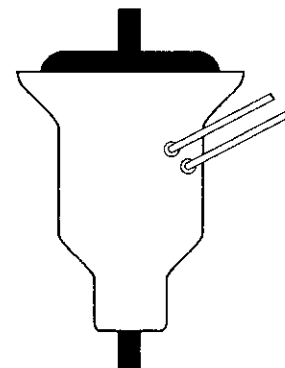
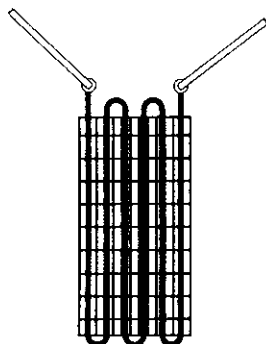


Top tank with ATF cooler on bottom



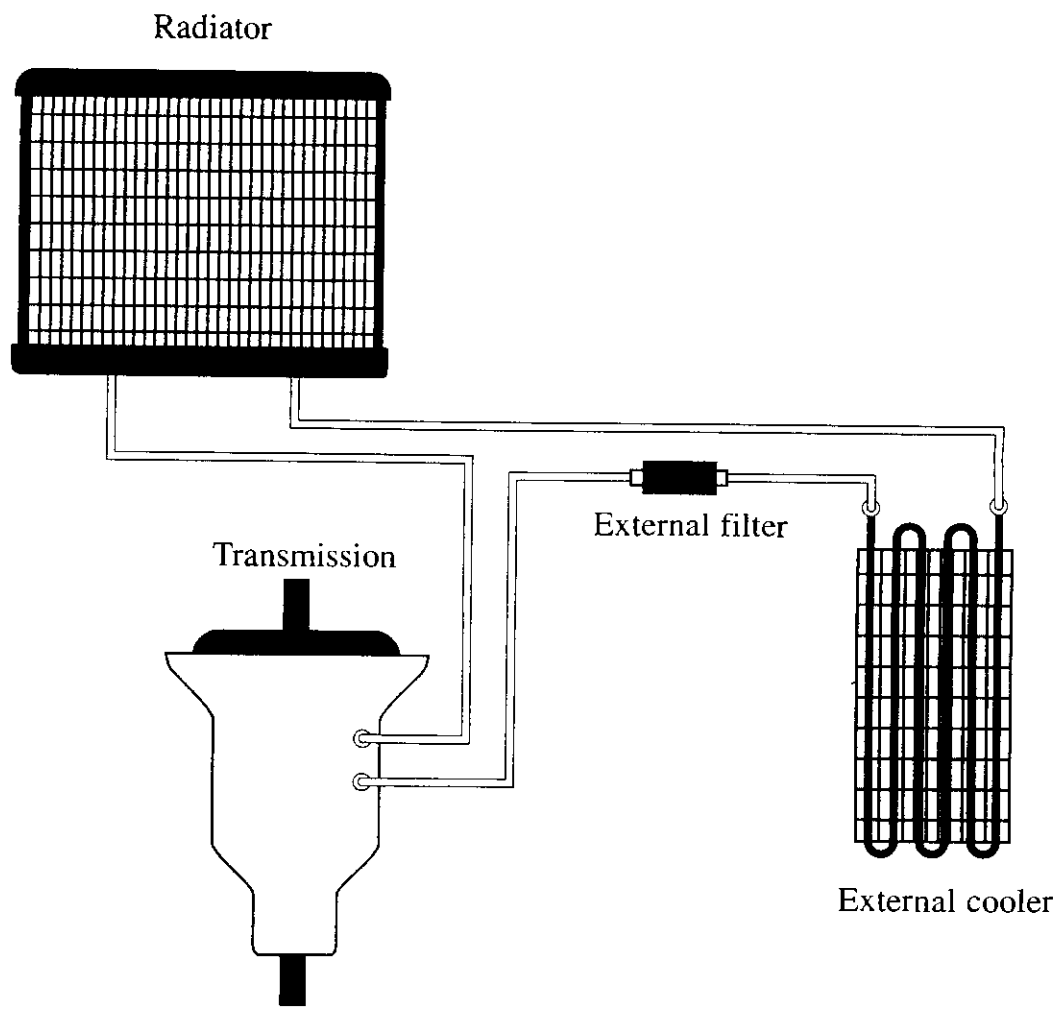
...and opposite side

External ATF cooler



BG **PF5** **POWER FLUSH AND FLUID EXCHANGE SYSTEM**

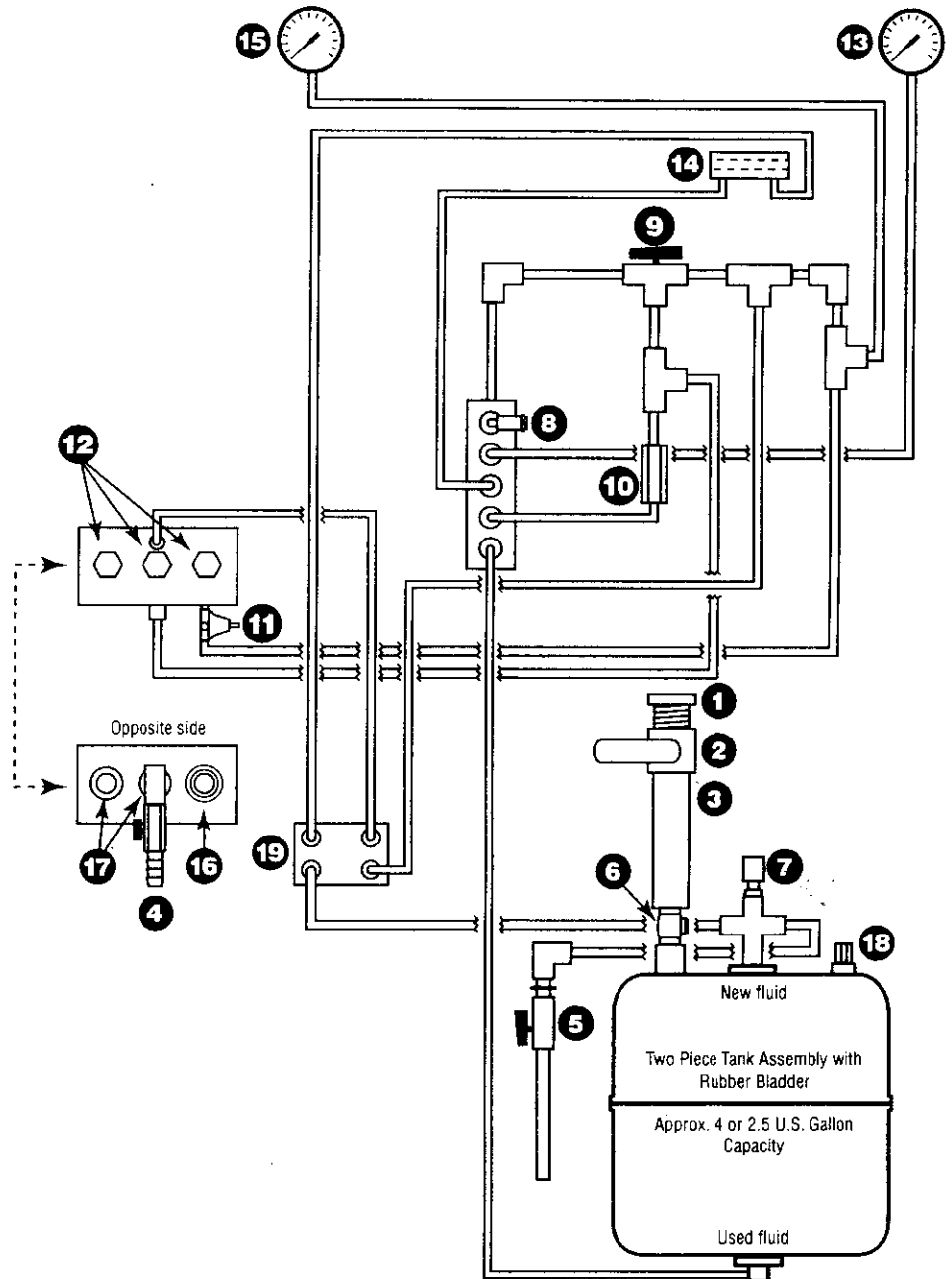
Connection may be made at any accessible point along the automatic transmission fluid (ATF) route. However, it is possible that the adaptors may not fit every connection encountered.





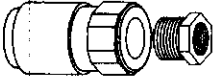
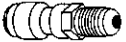
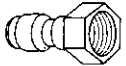

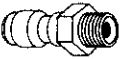
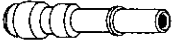

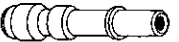
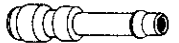
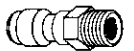
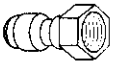
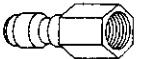
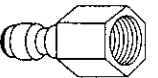

BG PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM

PLUMBING



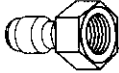
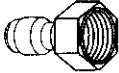
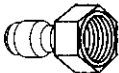
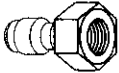

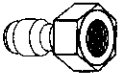
1. Manual fill cap
2. Manual fill valve
3. Manual fill tube
4. Drain valve
5. Vent valve
6. Fill tube check valve
7. Pop-off valve
8. Bladder inverting port
9. Control valve
10. Bypass valve
11. Recharge regulator
12. Strainers
13. Used fluid pressure gauge
14. Sight glass
15. New fluid pressure gauge
16. Recharge port
17. Service hoses
18. Recharge indicator
19. Heat exchanger



**PF5****POWER FLUSH AND FLUID EXCHANGE SYSTEM****ADAPTOR SET**

Adaptor	No.	Description	Usage
	17	3/8" Long Nut	Fords/Mercury only
	18	5/16" Long Nut Mates with #31	Ford/Mercury only including Aerostar
	19	Recharge Adaptor	
	21	5/16" Male SAE	
	22	3/8" Female Inv. Flare	
	23	5/16" Female Inv. Flare	
	24	3/8" Inv. Flare Mates with #38	
	25	3/8" Spike Quick Connect	Late model Chrysler products
	26	1/2" Spike Quick Connect	Late model Chrysler products
	27	5/16" Spike Quick Connect	Ford Windstar/Mercury Villager
	28	GM Male Quick Disconnect	
	29	Ford Contour/Mercury Mystique, Male	
	30	Ford Contour/Mercury Mystique, Female	
	31	5/16" Long Female	
	32	3/8" Long Female	
	33	GM Large Male Quick Disconnect	

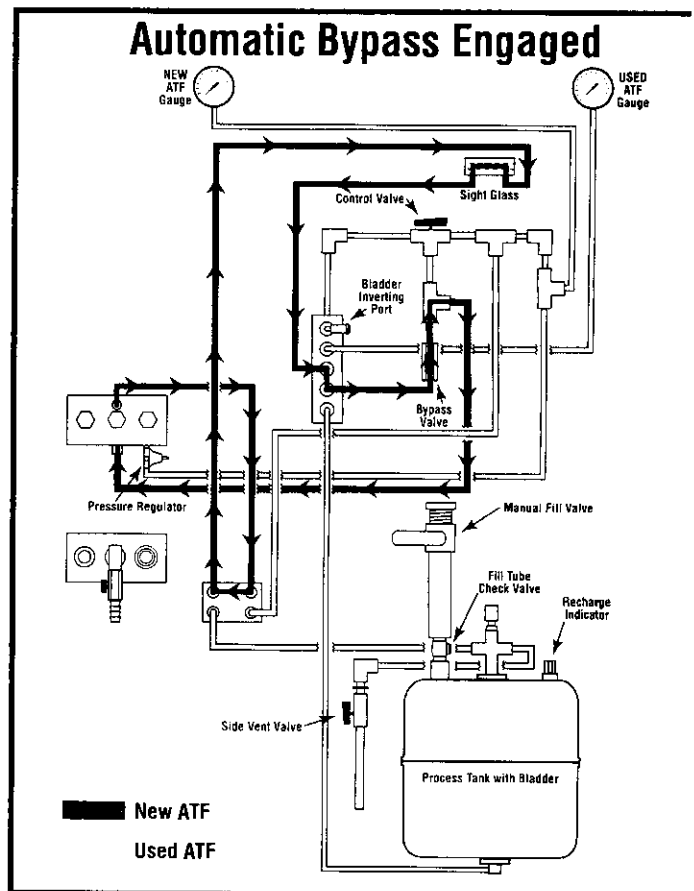
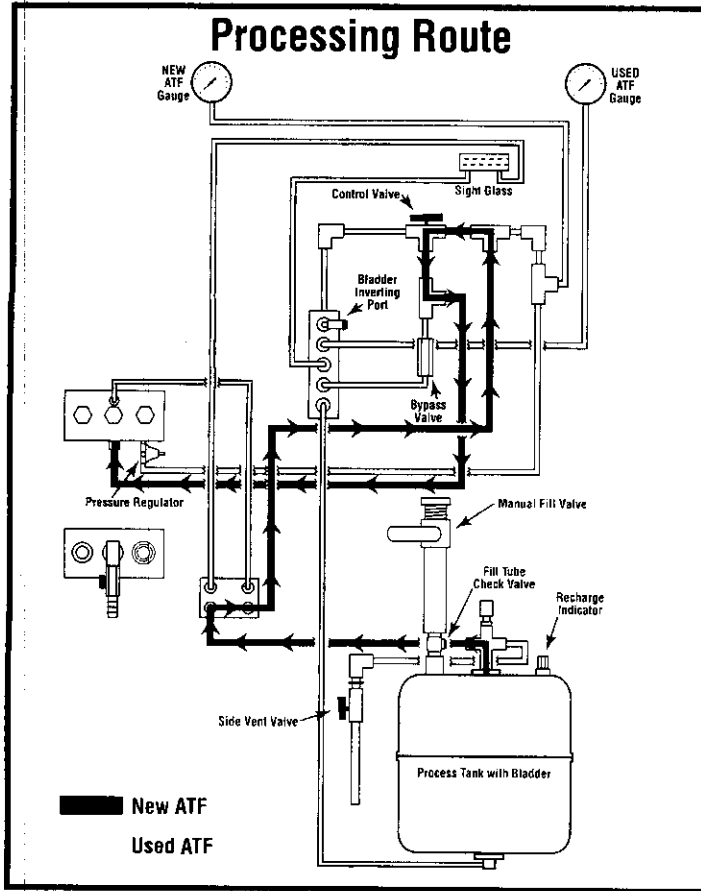
**PF5****POWER FLUSH AND FLUID EXCHANGE SYSTEM****ADAPTOR SET**

Adaptor	No.	Description	Usage
	34	3/8" Male Flare, 37° JIC	
	35	Banjo Adaptor Use with #6	Ford Escort
	36	Banjo Adaptor	Ford Escort
	37	1/2" Inverted Female Flare Mates with #16	
	38	7/16" Inverted Female Flare Mates with #24	
	39	3/8" Female Flare, 37° JIC Mates with #34	
	40	5/16" Male Flare, Fine Thread	Chrysler Trucks
	41	5/16" Female Flare, Fine Thread	Chrysler Trucks

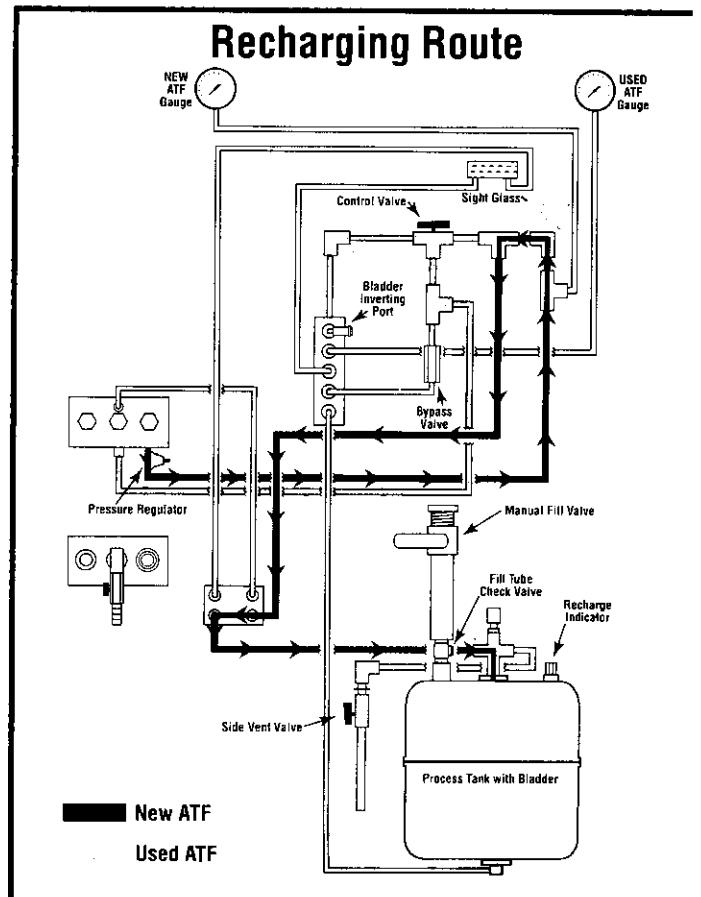


PF5

FLOW DIAGRAMS



NOTE: Entire system is pressurized during all operations even though ATF may not be flowing through all components.





BG PRODUCTS, INC.
701 South Wichita
Wichita, KS 67213
(316) 265-2686

Date: 09-11-11
Replaces: 11-09-11

MATERIAL SAFETY DATA SHEET
Emergency Phone: (800) 424-9300

Section A. PRODUCT IDENTIFICATION

Product Number: 106
Product Name: Quick Clean for Automatic Transmissions

Product Use: Automatic transmission system cleaner
CAS Number: Not Applicable

HAZARD RATING:

4 - EXTREME
3 - HIGH
2 - MODERATE
1 - SLIGHT
0 - INSIGNIFICANT

NFPA (704)

FLAMMABILITY: 2
HEALTH: 1
REACTIVITY: 0
SPECIAL: 0

HMIS

FLAMMABILITY: 2
HEALTH: 1
REACTIVITY: 1
PROTECTION: B

Section B. HAZARDOUS COMPONENTS

<u>COMPONENT</u>	<u>CAS No.</u>	<u>EXPOSURE CRITERIA</u>
Hydrotreated Light Petroleum Distillates	64742-53-6	5 mg/m ³ (mist)
Hydrotreated Heavy Petroleum Distillates	64742-52-5	5 mg/m ³ (mist)
Oleic Acid	112-80-1	Not Determined
4-methyl-2-pentanol	108-11-2	25 ppm (sensory, skin)

Section C. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	Not Determined	ODOR:	Solvent
VAPOR PRESSURE:	Not Determined	APPEARANCE:	Red Liquid
% VOLATILES BY VOLUME:	~ 5%	SPECIFIC GRAVITY (H₂O=1):	0.894
SOLUBILITY IN WATER:	Insoluble	POUR POINT:	Not Determined

Section D. FIRE PROTECTION AND INFORMATION

FLASH POINT AND METHOD: 58°C (136°F) / PMCC	FLAMMABLE LIMITS IN AIR: Not Determined	AUTO IGNITION TEMPERATURE: Not Determined
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EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear protective gear including self-contained breathing apparatus. Use extinguishing media appropriate for surrounding fire.

Section E. REACTIVITY DATA

STABLE (NORMAL CONDITIONS):

Stable

HAZARDOUS POLYMERIZATION:

Will not occur

HAZARDOUS AND DECOMPOSITION PRODUCTS:

Carbon Monoxide, oxides of carbon and other products of complete/incomplete combustion

INCOMPATIBILITY (CONDITIONS TO AVOID):

Oxidizing Mineral Acids, Cyanide, Dithiocarbamates, Elemental Metals and Alloys, Nitrides, Peroxides, Strong Oxidizing and Reducing Agents

Section F. HEALTH HAZARD INFORMATION

SKIN CONTACT: Repeated or prolonged skin contact may cause irritation, drying or de-fatting of the skin.
EYE CONTACT: Direct contact with product may cause irritation.
INHALATION: Inhalation may irritate respiratory passages.
INGESTION: May be harmful if swallowed.

CARCINOGENICITY:	NTP?	IARC MONOGRAPHS?	OSHA REGULATED?
	NO	NO	NO

Section G. EMERGENCY FIRST AID PROCEDURES

SKIN CONTACT: Remove all contaminated clothing and flush affected area for 15-20 minutes. If irritation occurs or persists, seek medical attention immediately.
EYE CONTACT: Flush with large amounts of water for 15-20 minutes. If irritation occurs or persists, seek medical attention immediately.
INHALATION: Remove from exposure area to a source of fresh air. If unconscious, start artificial respiration. If breathing is difficult or labored, provide Oxygen. Seek medical attention immediately.
INGESTION: DO NOT induce vomiting. Seek medical attention immediately.

Section H. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS: Use local exhaust or other engineering controls to minimize exposure.
RESPIRATORY PROTECTION (SPECIFY TYPE): Use NIOSH/MSHA approved respirator with cartridge, air line or SCBA as appropriate.
EYE PROTECTION: Safety glasses or chemical goggles.
OTHER PROTECTIVE CLOTHING AND EQUIPMENT: Wear long sleeved shirt or other protective clothing when a potential for contact exists. Wear chemically protective gloves when handling.

Section I. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container closed when not in use and away from sources of ignition. Use in well-ventilated areas. Physically segregate from incompatibles. **Uniform Fire Code Level 2 material.**
OTHER PRECAUTIONS: Common chemical hygiene practices apply when working with this material.

Section J. ENVIRONMENTAL SPILL OR LEAK INFORMATION

SPILLS: Evacuate the immediate area and remove all sources of ignition. Contain and collect the spill products using inert/absorbent materials. Place spill materials in a closed and labeled container for disposal. Contact response organizations as appropriate.
WASTE DISPOSAL: Dispose of in accordance with all applicable Federal, State and local regulations.

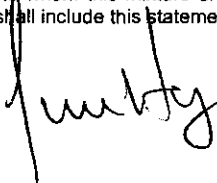
Section K. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Combustible liquid, n.o.s (contains Petroleum Distillates)	IMDG CLASSIFICATION: Flammable liquid n.o.s (contains Petroleum Distillates), LTD. QTY., 3.3, UN1993, PG III
DOT ERG No.: 128	NMF FREIGHTCLASS: 155250
DOT HAZARD NAME: Combustible liquid, n.o.s	IMDG LABEL: Limited Quantity
UN NUMBER: 1993	PACKING GROUP: III
NA NUMBER: 1993	DOT LABEL: Not Applicable

Section L. COMMENTS

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use. You must notify each person to whom this mixture or trade name product is sold. This statement must not be detached. Any copy or redistribution of the Material Safety Data Sheet shall include this statement.

Signature:



Name/Title: Jim Helzer
Safety/Environmental Director



BG PRODUCTS, INC.
701 South Wichita
Wichita, KS 67213
(316) 265-2686

Date: 09-12-C
Replaces: 07-26-C

MATERIAL SAFETY DATA SHEET
Emergency Phone: (800) 424-9300

Section A. PRODUCT IDENTIFICATION

Product Number: 311, 3111
Product Name: Automatic Transmission Conditioner

Product Use: Automatic transmission additive
CAS Number: Not Applicable

HAZARD RATING:

4 - EXTREME
3 - HIGH
2 - MODERATE
1 - SLIGHT
0 - INSIGNIFICANT

NFPA (704)

FLAMMABILITY: 1
HEALTH: 1
REACTIVITY: 0
SPECIAL: 0

HMIS

FLAMMABILITY: 1
HEALTH: 1
REACTIVITY: 0
PROTECTION: B

Section B. HAZARDOUS COMPONENTS

<u>COMPONENT</u>	<u>Percentage</u>	<u>CAS No.</u>	<u>EXPOSURE CRITERIA</u>
Straight Run Middle Distillate	Not Applicable	64741-44-2	5 mg/m ³ (mist)
* Dibutyl phthalate	24-27	84-74-2	5 mg/m ³
2-methyl-1-propene, sulfurized	Not Applicable	68511-50-2	Not Established
* Zinc compounds	1-3	Not Applicable	Not Established
Methylene bis (dibutyldithiocarbamate)	Not Applicable	10254-57-6	Not Established
Hydrotreated Heavy Petroleum Distillate	Not Applicable	64742-52-5	5 mg/m ³ (mist)

* This product is a toxic chemical subject to the reporting requirements of Section 313 of SARA Title III.

Section C. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:	Not Determined	ODOR:	Pungent
VAPOR PRESSURE:	Not Determined	APPEARANCE:	Brown Liquid
% VOLATILES BY VOLUME:	~ 25%	SPECIFIC GRAVITY (H₂O=1):	0.9404
SOLUBILITY IN WATER:	Insoluble	POUR POINT:	Not Determined

Section D. FIRE PROTECTION AND INFORMATION

FLASH POINT AND METHOD: 195°C (383°F) / PMCC	FLAMMABLE LIMITS IN AIR: Not Determined	AUTO IGNITION TEMPERATURE: Not Determined
EXTINGUISHING MEDIA: Foam, Carbon dioxide, dry chemical.		
SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear protective gear including self contained breathing apparatus. Use extinguishing media appropriate for surrounding fire.		

Section E. REACTIVITY DATA

STABLE (NORMAL CONDITIONS): Stable	HAZARDOUS POLYMERIZATION: Will not occur
HAZARDOUS AND DECOMPOSITION PRODUCTS: Carbon Monoxide, oxides of carbon and other products of complete/incomplete combustion	
INCOMPATIBILITY (CONDITIONS TO AVOID): Oxidizing Mineral Acids, Strong Oxidizing Agents	

Section F. HEALTH HAZARD INFORMATION

SKIN CONTACT: Repeated or prolonged skin contact may cause irritation, drying or de-fatting of the skin.

EYE CONTACT: Direct contact with product may cause irritation.

INHALATION: Inhalation may irritate respiratory passages.

INGESTION: May be harmful if swallowed.

CARCINOGENICITY:

NTP?
NO

IARC MONOGRAPHS?
NO

OSHA REGULATED?
NO

Section G. EMERGENCY FIRST AID PROCEDURES

SKIN CONTACT: Remove all contaminated clothing and flush affected area for 15-20 minutes. If irritation occurs or persists, seek medical attention immediately.

EYE CONTACT: Flush with large amounts of water for 15-20 minutes. If irritation occurs or persists, seek medical attention immediately.

INHALATION: Remove from exposure area to a source of fresh air. If unconscious, start artificial respiration. If breathing is difficult or labored, provide Oxygen. Seek medical attention immediately.

INGESTION: DO NOT induce vomiting. Seek medical attention immediately.

Section H. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS: Use local exhaust or other engineering control to minimize exposure.

RESPIRATORY PROTECTION (SPECIFY TYPE): Use NIOSH/MSHA approved respirator with cartridge, air line or SCBA as appropriate.

EYE PROTECTION: Safety glasses or chemical goggles.

OTHER PROTECTIVE CLOTHING AND EQUIPMENT: Wear long sleeved shirt or other protective clothing when a potential for contact exists. Wear chemically protective gloves when handling.

Section I. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep containers closed when not in use and away from sources of ignition. Use in well ventilated areas. Physically segregate from incompatibles. **Uniform Fire Code Class 3B material.**

OTHER PRECAUTIONS: Common chemical hygiene practices apply when working with this material.

Section J. ENVIRONMENTAL SPILL OR LEAK INFORMATION

SPILLS: Evacuate the immediate area and remove all sources of ignition. Contain and collect the spill products using inert/absorbent materials. Place spill materials in a closed and labeled container for disposal. Contact response organizations as appropriate.

WASTE DISPOSAL: Dispose of in a manner consistent with all applicable Federal, State and local regulations.

Section K. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: Consumer Commodity, ORM-D

IMDG CLASSIFICATION: RQ/MP Environmentally hazardous substance, liquid, n.o.s (contains Dibutyl phthalate), LTD. QTY., 9.3, UN3082, PG III (RQ = 10#)

DOT ERG No.: 171

NMF FREIGHTCLASS: 155250

DOT HAZARD NAME: Consumer Commodity, ORM-D

IMDG LABEL: Limited Quantity

UN NUMBER: UN 3082

PACKING GROUP: III

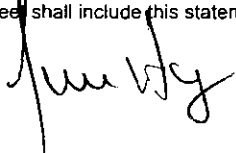
NA NUMBER: Not Applicable

DOT LABEL: Not Applicable

Section L. COMMENTS

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use. You must notify each person to whom this mixture or trade name product is sold. This statement must not be detached. Any copy or redistribution of the Material Safety Data Sheet shall include this statement.

Signature:



Name/Title: Jim Helzer
Safety/Environmental Director

PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM

This means that the level of fluid in the transmission and components remains the same at all times during the transfusion. The fluid level in the transmission does not require monitoring. For best results, the operator should be inside the vehicle shifting the transmission through its gears as in step #3 to insure that all flush and used ATF is purged from the valve body.

As the transmission continues to pump used ATF into the tank, the diaphragm is collapsed against the other side. A preset bypass regulator will open after a pressure differential exists between the New and Used ATF lines. This will route the incoming fluid around the tank and into the new ATF line going to the transmission.

Note: A few transmission pumps produce "0" pressure at idle and the engine RPM must be increased until the Used ATF gauge shows at least 10 PSI. There are also a few transmission pumps that will only produce pressure when in drive. If increasing the RPM does not produce a pressure reading, place the vehicle in drive. **CAUTION: Be certain that the parking brake is set and wheels are chocked before putting vehicle in drive. Do not leave vehicle unattended!**

The transfusion is complete when a pressure differential (approximately 15–30 PSI) is noted between the New and Used ATF gauges.

9. When the transfusion is complete, check the level of ATF in the transmission. Leave room to add 11 ounces of BG Automatic Transmission Conditioner, Part No. 311.

If some ATF needs to be removed, leave engine running, turn the Control lever to "Bypass/Recharge" and use the drain valve to dispense the amount you wish to remove. **Caution: The ATF is very hot**, so use a deep container and place the end of the spout as close to the bottom as it can go to prevent splattering.

Shut off engine and turn Control lever to "Pressure Release" to remove any pressure trapped in the system. Remove adaptors and reconnect transmission fluid lines.

Add the contents of one 11 ounce can of BG Automatic Transmission Conditioner, Part No. 311, if it was not already in the new ATF.

Service is complete.

PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM

RECHARGING

The tank in the BG PF5 Power Flush and Fluid Exchange System must be recharged with new ATF before the next service. It can be recharged easily and quickly from any ATF source and with any factory specification ATF required by the next vehicle to be serviced. The process for recharging the apparatus will also discharge the captured used fluid from the last service.

To recharge apparatus by either pressurized or manual filling, turn Control lever to "Bypass/Recharge." Attach adaptor #6 to the end of either service hose and place end in the used oil receptacle.

Next, attach #19 recharge adaptor to the Recharge port on the side of the cabinet. *Do not attempt to apply air or fluid pressure to the service hoses because these are not regulated and the system will be damaged.* Attach to shop air for manual filling or to the shop's pressurized ATF supply hose for pressure filling.

Pressurized Recharging:

1. For pressurized recharging, turn Control lever to "Bypass/Recharge" and apply pressurized ATF to the #19 recharge adaptor on the Recharge port. Let chamber fill until Used ATF gauge reads "0" and pressure on the New ATF gauge starts to rise. This reading indicates all used fluid has been expelled and the tank is now filled with new fluid.
2. Turn Control lever to "Pressure Release." Pressure is vented back into the service hoses and on the used oil storage tank through the hose that is opened.

Always completely fill the BG PF5 Power Flush and Fluid Exchange System regardless of the capacity of transmission being serviced.

Recharging is complete. The BG PF5 Power Flush and Fluid Exchange System is ready for the next vehicle service.

Manual Recharging:

1. For manual recharging, turn Control lever to "Bypass/Recharge" and attach the #19 recharge adaptor to the Recharge port on the side of the cabinet. Make sure the vent valve on the side of the PF5 is closed. Place the hose from the vent valve into a clean empty container. Attach the #6 adaptor to the end of one of the service hoses and place the end into the used oil receptacle.
2. Apply shop air into the recharge adaptor on the Recharge port, until the pressure reading on the Used ATF gauge reads "0." This indicates that all used ATF has been expelled and bladder is fully collapsed against the bottom of the tank. Remove the air supply and turn the Control lever to "Pressure Release" until the New ATF gauge reads "0."



PF5

POWER FLUSH AND FLUID EXCHANGE SYSTEM

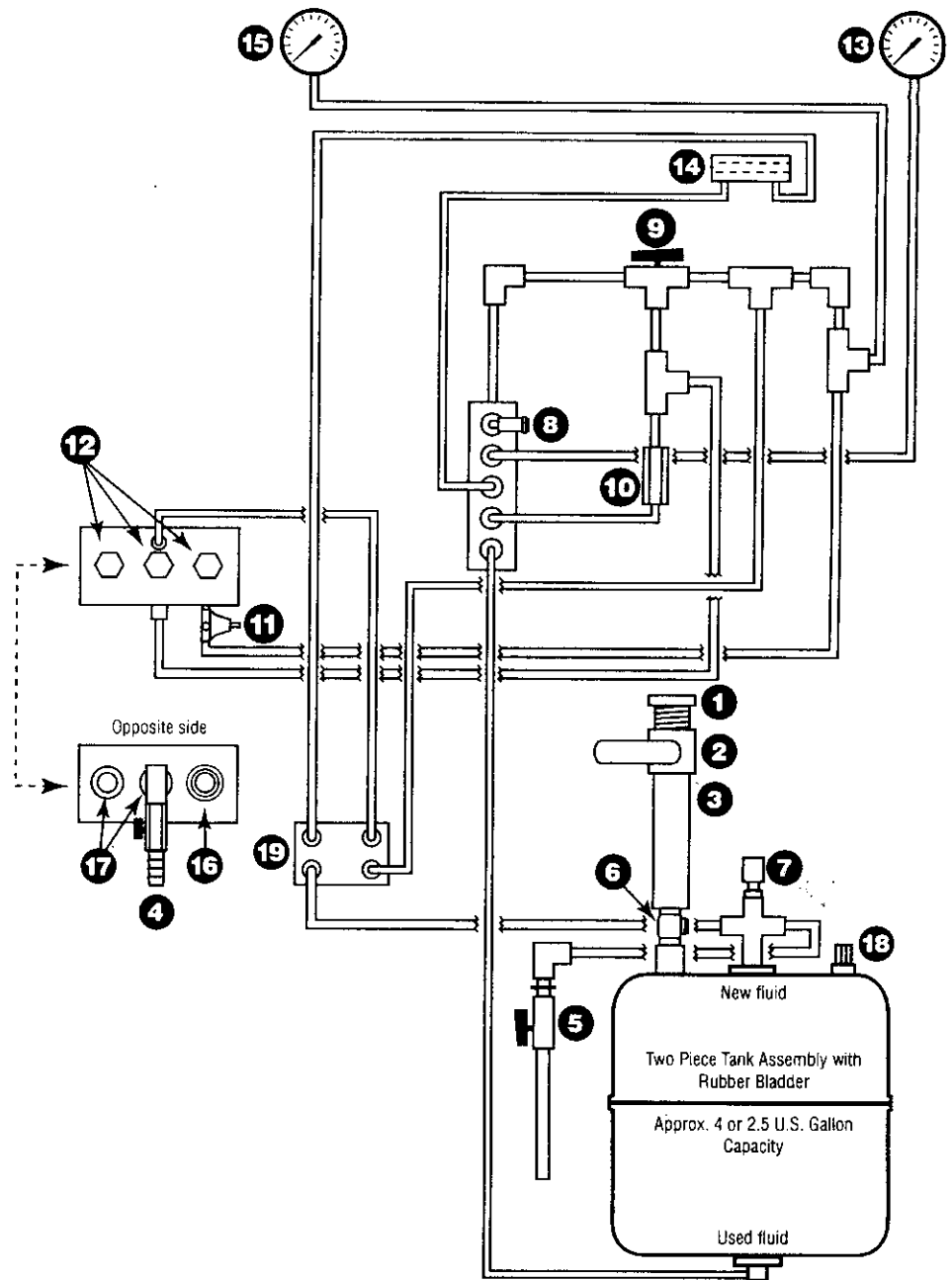
3. Next, remove Manual Fill cap and slowly open the Manual Fill valve. Install included funnel for easier pouring. Open the vent valve on the side of the PF5. This will allow air to escape from the tank while pouring in the ATF and will also make it easy to tell when the system is properly filled.
4. You will need either 4 or 2.5 gallons of the appropriate new ATF depending on the tank capacity of the particular unit. Pour ATF into the funnel until a solid stream of fluid runs out of the vent valve. This signals that the system is completely full and there is no air in the lines. Allow ATF to drain out the vent valve until the level in the funnel is just below the Manual Fill valve. The ATF captured from the vent valve is new and can be used for top off or it can be put back into the new ATF supply container.
5. Close the Manual Fill valve and replace Manual Fill cap or cap the funnel. Remove adaptors.

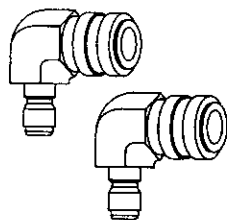
Recharging is complete. The BG PF5 Power Flush and Fluid Exchange System is now ready for the next service.

BG PF5 POWER FLUSH AND FLUID EXCHANGE SYSTEM


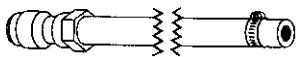

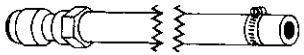

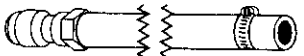

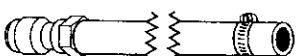




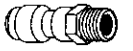

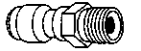
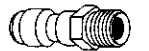
PLUMBING

1. Manual fill cap
2. Manual fill valve
3. Manual fill tube
4. Drain valve
5. Vent valve
6. Fill tube check valve
7. Pop-off valve
8. Bladder inverting port
9. Control valve
10. Bypass valve
11. Recharge regulator
12. Strainers
13. Used fluid pressure gauge
14. Sight glass
15. New fluid pressure gauge
16. Recharge port
17. Service hoses- 18. Recharge indicator
- 19. Heat exchanger



**PF5****POWER FLUSH AND FLUID EXCHANGE SYSTEM****ADAPTOR SET**

(2) Elbows

Adaptor	No.	Description	Usage
	1	1/4" Barb	General purpose
	2	1/4" Open Hose	General purpose
	3	5/16" Barb	General purpose
	4	5/16" Open Hose	General purpose
	5	3/8" Barb	General purpose
	6	3/8" Open Hose	General purpose
	7	1/2" Barb	General purpose
	8	1/2" Open Hose	General purpose
	9	3/8" Male Flare SAE	Jeep Cherokee 1980 and later
	10	3/8" Female Flare SAE	Jeep Cherokee 1980 and later
	11	5/16" Male Inv. Flare	Most GM products
	12	5/16" Female Inv. Flare	Most GM products
	13	1/4" Male Pipe Thread	Requires Ford tool P/N 7244 for some 1985 & later
	14	1/4" Female Pipe Thread	Some Fords 1985 and later
	15	3/8" Male Inv. Flare	Jeep 1979 and older
	16	1/2" Male Inv. Flare	Cadillac 1980 and later
		Mates with #37	