

VEHICLE INJECTION APPARATUS'

Reference Manual





## BG DPF & Emissions System Restoration Service OVERVIEW

Diesel engines with exhaust gas recirculation (EGR) can quickly accumulate hydrocarbon residues in the air intake system. These deposits build rapidly and can restrict proper airflow through the air intake manifold. Reduced airflow can disrupt proper engine balance and function. This leads to reduced power output, increased exhaust emissions, rough idle and a drop in fuel efficiency. Diesel Oxidation Catalysts (DOC) and Diesel Particulate Filters (DPF) can become coated with heavy soot and engine oil residue, impeding their effectiveness as aftertreatment emissions reduction devices.

The BG DPF & Emissions System Restoration Service uses the BG 12Q VIA,™ PN 9300F, to heat and install BG DPF & Emissions System Restoration, PN 2581E, into the vehicle's air intake to safely remove and disperse accumulated hydrocarbon deposits. The BG 12Q VIA™ triggers the diesel particulate filter (DPF) into regeneration mode to conduct an effective cleaning. This service is designed to clean intake and emissions system components, restoring proper function to reduce harmful emissions, prolong component life and restore power and performance.

The BG DPF & Emissions System Restoration Service must be performed in conjunction with a diagnostic scan tool to closely monitor vehicle RPM and exhaust temperatures during service. Due to this requirement, the technician must remain with the vehicle. Along with the service, a BG Diesel Performance Oil Change is required using BG EPR® Engine Performance Restoration,® PN 109E, BG DOC® Diesel Oil Conditioner, PN 112E, and BG 244® Diesel Fuel System Cleaner, PN 244E.

Follow all safety requirements required by BG Products before attempting this service.

# BG DPF & Emissions System Restoration Service PRODUCTS



BG DPF & Emissions System Restoration PN 2581E



BG EPR® Engine Performance Restoration® PN 109E



BG DOC® Diesel Oil Conditioner PN 112E



BG 244® Diesel Fuel System Cleaner PN 244E





### VEHICLE INJECTION APPARATUS™

### PN 9300F





## **Specifications**

Height: .997 Meter/39.25 inches

Width: .737 Meter/29 inches

Depth: .426 Meter/16.75 inches

Fluid Capacity: 15 Liters/4 gallons

Filters: 1 cleanable strainer

Construction: Steel frame with heavy duty casters

PVC plastic skin and console

Custom-engineered, stainless steel tank assembly

Stainless steel plumbing

High pressure, high temperature, chemical-resistant stainless

steel hose

Dual stainless block heating elements

Power Requirements: 220V

Process Rate: 35 minutes per gallon using 3.5 GPH nozzle. Process rate differs

depending on nozzle size, condition and model of vehicle

Process Method: Through vehicle's intake using appropriate nozzle and atomizer size.

Service is performed monitoring engine vacuum from gauge, engine RPM and exhaust gas temperatures (EGT) using scanner.

MADE IN U.S.A.

## **Limited Warranty**

This product is warranted by BG Products, Inc., to be free of defects in workmanship and materials for a period of 1 year from the date of purchase by original purchaser. If the product fails within this period, it will be repaired or replaced at seller's option, provided (1) the product is submitted with proof of purchase date and (2) transportation charges are prepaid to the nearest Service Center. Liability under this warranty is expressly limited to repairing or replacing the product or parts thereof. This warranty does not apply to product or parts broken by accident, negligence, overload, abuse or if they have been tampered with or altered in any way. This warranty does not apply to service hoses and adaptors which may need replacing due to normal wear. If this warranty does not apply, then the purchaser shall pay all costs for labor, material and transportation. Note: Only a properly trained and certified technician may operate this apparatus. The use of this apparatus for any purpose other than the services described will render this warranty null and void, as will the use of any chemicals other than the BG products described in this manual. No other warranties are expressed or implied.



## Safety Requirements



Wear safety goggles to protect your eyes.



Wear Nitrile,® Neoprene® or PVC gloves to protect your hands.



Wear a long-sleeved shirt to protect your arms.

The following instructions must be read and understood before attempting to set up or use the BG 12Q VIA!<sup>M</sup>

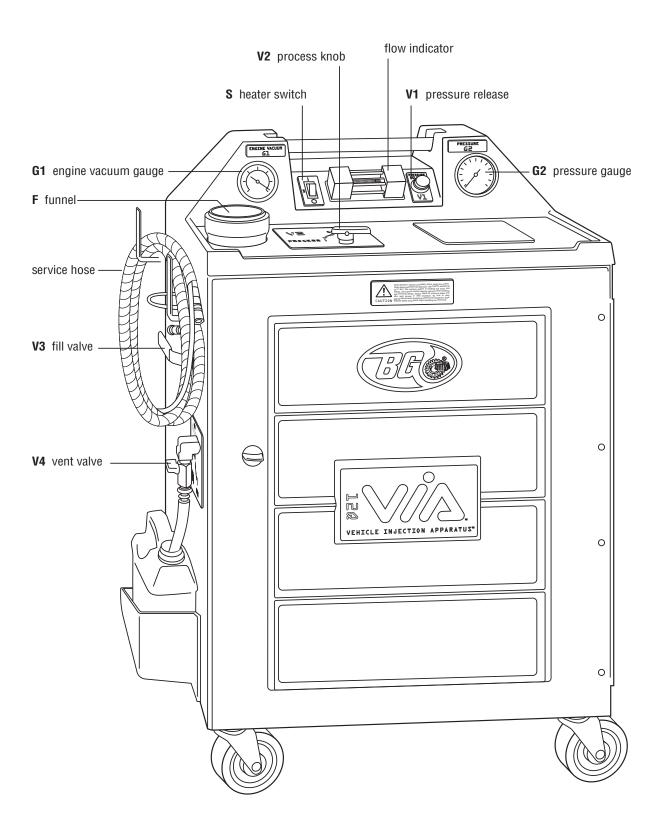
- 1. Only a properly trained and certified technician may operate this apparatus
- 2. Carefully read the BG 12Q VIA<sup>™</sup> Reference Manual before assembling and using any part of the system.
- 3. Before handling any BG product, read its Safety Data Sheet.
- 4. A combination of mechanical and local ventilation should be used to prevent operator exposure to noxious fumes.
- 5. Keep all hoses and tools away from moving engine parts.
- 6. Check all lines and fittings for cracks and leaks before and after service.
- 7. The BG 12Q VIA<sup>™</sup> is designed to be used only with BG products described in this manual. The use of any other chemicals or fluids with this system will void all warranties and could create hazardous conditions.
- 8. Do not spray solvents on flow indicator; clean using mild detergents only.
- 9. Fluids being processed can approach 140°F (60°C) and 90 PSI (6.21 Bar).
- 10. Use extreme caution in handling hot hoses and adaptors.
- 11. Use extreme caution opening vent and when installing and removing adaptors.
- 12. Always bleed off pressure before and after each service or refill procedure.



### CAUTION! MAY CAUSE ENGINE DAMAGE OR FIRE IF LEFT UNATTENDED!











## **Preparing for Service**

- 1. Add 325 mL (11 oz.) BG 244® Diesel Fuel System Cleaner, PN 244E, to the fuel tank.
- 2. Hook up a recommended OEM or similar diagnostic scanner to the ALDL connector in the vehicle.
- 3. Start the engine. Verify the scanner is communicating.
- 4. Run engine to reach normal operating temperature (82°C/180°F).
- 5. Attach appropriate spray nozzle to injector housing:
  - For 1.0L to 1.9L engine, use 1.50 GPH spray nozzle and 4 hole injector housing For 2.0L to 2.9L engine, use 2.50 GPH spray nozzle and 5 hole injector housing For 3.0L to 3.9L engine, use 2.50 GPH spray nozzle and 6 hole injector housing For 4.0L to 7.0L engine, use 3.50 GPH spray nozzle and 12 hole injector housing
- 6. Attach BG 12Q VIA™ service hose to injector housing.
- 7. Turn V3 Fill Valve to "Fill" (I) and V4 Vent Valve to "Open" (I).
- 8. Fill the BG 12Q VIA<sup>™</sup> with 3.7 L (1 gallon) of BG DPF & Emissions System Restoration, PN 2581E.
- 9. Turn V3 Fill Valve to "Close" (O) and V4 Vent Valve to "Close" (O).
- 10. Apply shop air to the BG 12Q VIA™ coupler. G2 Pressure Gauge should read 90 psi.
- 11. Plug in to power source.
- 12. Turn vehicle engine off.

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## BG 12Q VIA™ Adaptor Set For Light Duty Diesel Passenger Vehicles

PN 9300-200



**9300-203** Injector housing, 3 hole



**9300-208** Injector housing, 8 hole



**9300-055** 1/8" MNPT, 45º push-to-connect, 1/4" hose (10ea)



**9300-204** Injector housing, 4 hole



**9300-209** Injector housing, 9 hole



**9255-052** 1.50 GPH spray nozzle



**9300-205** Injector housing, 5 hole



**9300-210** Injector housing, 10 hole



**9255-051-2** 2.50 GPH spray nozzle



**9300-206** Injector housing, 6 hole



**9300-211** Injector housing, 11 hole



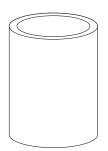
**9300-072** 3.50 GPH spray nozzle



9300-207 Injector housing, 7 hole



**9300-212** Injector housing, 12 hole



**9300-213** 2" adaptor hose for 9300-200



**9300-214** 2.25" adaptor hose for 9300-200



**9300-215** 2.5" adaptor hose for 9300-200



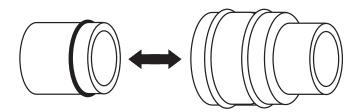
**9300-216** 2.75" adaptor hose for 9300-200



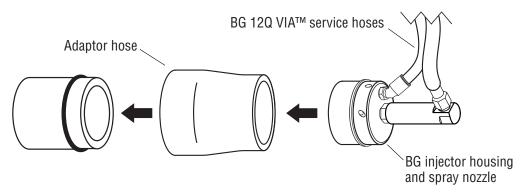


## BG DPF & Emissions System Restoration Service PROCEDURE

- 1. Separate the air tube located at the engine air intake manifold.
- 2. Install BG adaptor hose on the air intake, make sure there is a solid seal, then install BG Injector housing into the BG adaptor hose.



### Separate the air tube



Install BG adaptor hose and injector housing with spray nozzle

- 3. Start engine, run at idle and confirm:
  - a. Engine is at operational temperature (82°C/180°F).
  - b. G1 Engine Vacuum Gauge should reflect 1" Hg/100 RPM. Note: 10" Hg at 1,000 RPM is the minimum. If Hg needs to increase, replace the current injector housing with the next injector housing with fewer holes (e.g. replace 5 hole injector housing with 4 hole injector housing). Repeat this process until minimum 10" Hg is reached.
  - c. Scanner data stream is communicating and monitoring each system.

continued on next page





### Procedure continued from previous page

- d. Scanner is set to read vehicle RPM, EGR temperature sensor and all Exhaust Gas Temperatures (EGTs).
- e. Identify sensor position pre- and post-DOC, DPF and SCR.
- f. EGR is set to 0%. Disconnect the EGR.
- 4. Accelerate engine to 1,200 RPM, check G1 Engine Vacuum Gauge reading and allow the EGT sensor (pre-DPF) to reach 315–480°C/600–900°F and stabilize.
- 5. Turn (S) Heater Switch on (I) and wait 5 minutes for BG 12Q VIA™ to reach operating temperature.
- 6. With all the engine parameters stable, turn V2 knob to "Process" (I). Make sure the flow indicator shows fluid flowing
- 7. Closely monitor the scanner data for any sign of rapid increase in Exhaust Gas Temperatures. RPM/vacuum may need to be adjusted to maintain DPF temperature of 315–480°C/600–900°F.
  - Note: Raising RPM will increase temperatures and vacuum; lowering RPM will decrease temperatures and vacuum. Adjust in 100 RPM increments. If any of the exhaust temperature sensors reach 650°C/1,200°F or rapid increase in temperature is observed, turn V2 knob to "Close" (0), remove throttle depressor and allow engine to idle.
- 8. After flow indictor is clear, turn V2 knob to "Close" (O).
- 9. Turn (S) Heater Switch off (O). Remove shop air and press and hold the V1 Pressure Release until G2 Pressure Gauge reads "0."
- 10. Return vehicle to Idle and run for at least 15 minutes.
- 11. Monitor scanner data to make sure engine and cooling cycle of the DPF system are functioning properly.
- 12. After engine systems have cooled, turn engine off.
- 13. Remove adaptors.
- 14. Reconnect air tube and EGR.
- 15. Complete BG Diesel Performance Oil Change with BG EPR,® PN 109E, and BG DOC,® PN 112E.
- 16. Test drive vehicle and clear any codes set during the service.





## **Inspection and Maintenance**

Before each use, inspect the general condition of the BG 12Q VIA.™ Check for loose screws, misaligned or binding part of moving parts, cracked or broken parts, and any other condition that may affect the safe operation of the BG 12Q VIA.™ If any of these conditions exist, have the problems corrected before further use. Do not use damaged equipment.



CAUTION! All maintenance, service or repairs not mentioned in this manual must only be performed by a qualified service technician.



## **Barclay-Phelps**

CE MARKING SPECIALISTS
Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong

### CERTIFICATE & DECLARATION OF CONFORMITY FOR CE MARKING

### Company contact details:

BG Products, Inc. 740 S. Wichita St., Wichita, KS 67213, USA Tel: 316.265.2686 rgarcia@bgprod.com www.bgprod.com

### BG Products, Inc. declares that their:

Vehicle Injection Apparatus PN 9300 including all component parts

### is classified within the following EU Directives:

Machinery Directive 2006/42/EC
Low Voltage Directive 2006/95/EC
Electromagnetic Compatibility Directive 2004/108/EC
RoHS 2 Directive 2011/65/EU

#### and further conforms with the following EU Harmonized Standards:

EN 60204-1:2006 + A1:2009 EN ISO 4414:2010 EN ISO 12100:2010 EN 61000-6-2:2005 EN 61000-6-4:2007+A1:2011

Dated: 10 April 2015
Position of signatory: CFO
Name of Signatory: Ron Garcia
Signed below:

on behalf of BG Products, Inc.



Scan this code or visit

http://bgfor.me/12qviaref
to access instructions
in other languages and
additional information. This
code can also be found on
the serial plate on the back
of the BG 120 VIA™



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