



FUEL INJECTION CLEANER MODELS MV5570 & MV5565



It is the responsibility of the user of this equipment to read this user's manual entirely, and understand the safe and proper use and application of this equipment.

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Introduction

The Mityvac Fuel Injection Cleaner can perform two types of engine cleaning services:

1. Fuel Injector Cleaning
2. Air Induction System Cleaning

Fuel Injector Cleaning is performed by installing the Cleaner directly into the fuel delivery system, where it dispenses a specially formulated solution directly into the engine. The solution dissolves deposits from the injectors and prevents future buildup.

Air Induction System Cleaning is performed by inserting a nozzle (sold separately) into the air intake stream. The Cleaner delivers cleaning solution to the nozzle under pressure, where it is injected into the air stream as a fine mist. The solution coats the inside of the throttle body, intake manifold, and valves, to loosen and dissolve carbon deposits. The deposits are then burned off by engine combustion.

Both types of cleaning services can enhance engine performance, improve fuel economy, reduce maintenance and improve emissions.



MVA550 - Decarb Nozzle



MVA551 - Extended Nozzle Clamp

Application Precautions

This equipment is intended for use by vehicle service professionals with experience and knowledge of its application and limitations. While it is designed for servicing a variety of vehicles in a safe and convenient manner, due to variations between vehicle manufacturers, makes, models and years, use of this equipment is not always feasible, possible, or recommended.

Use common sense when operating this equipment. If something does not seem or feel right, stop immediately and consult a professional with knowledge of the application. Don't force the use of this equipment on an application for which it is not intended.

The procedures documented in this manual are to serve as guidelines for general use of this equipment. In addition to these guidelines, always follow the vehicle manufacturer's recommended procedures when attempting to use this equipment.

When installing this equipment for induction system cleaning, insure the cleaning solution is introduced downstream from the mass airflow sensor. Installing the nozzle upstream of the sensor can cause permanent damage to the sensor.

Harsh cleaning solutions can damage some delicate idle air control valves. If unsure of the effect of the cleaning solution on the IAC for the vehicle, consult the vehicle's manufacturer for further information.

When performing a fuel injector cleaning service, keep the Cleaner pressure below the rated fuel pressure of the vehicle to prevent damage to the injectors, and to prevent cleaning solution from bypassing the regulator and entering the fuel tank.

Safety Precautions

- Carefully read and understand these instructions prior to using this equipment
- Always wear safety glasses when using this equipment
- Avoid burns by remaining cautious of engine parts that may become hot when the engine is running
- Operate the vehicle only in a well ventilated area, and away from potential sources of flame or ignition
- Prior to starting an engine, make sure all components of the tester, body parts, and personal clothing are clear of rotating engine components.
- Never leave a vehicle unattended during the cleaning process.
- Check and secure all fuel system connections before starting the vehicle or pressurizing the system.
- Always keep a fire extinguisher on hand when performing fuel related procedures. Make sure the extinguisher is rated for fuel, electrical, and chemical fires.
- Protect painted surfaces from fuel and cleaning solutions.
- Release fuel system pressure before servicing or disconnecting any fuel system related components.
- This system is designed for use on gasoline systems only.

Components, Service Parts, and Accessories

The Mityvac Fuel Injection Cleaner operates using standard shop air between 90 and 150 PSI (6 and 10 bar). To perform a fuel injector cleaning service, a hose and adapter are required to connect to the engine's fuel delivery system. A connection hose and spray nozzle are required to perform an air induction cleaning service.

Following is a list of standard components, service parts, and accessories. All are available through your authorized Mityvac dealer.

Standard Kit Components

Model MV5570 includes the following high quality components:

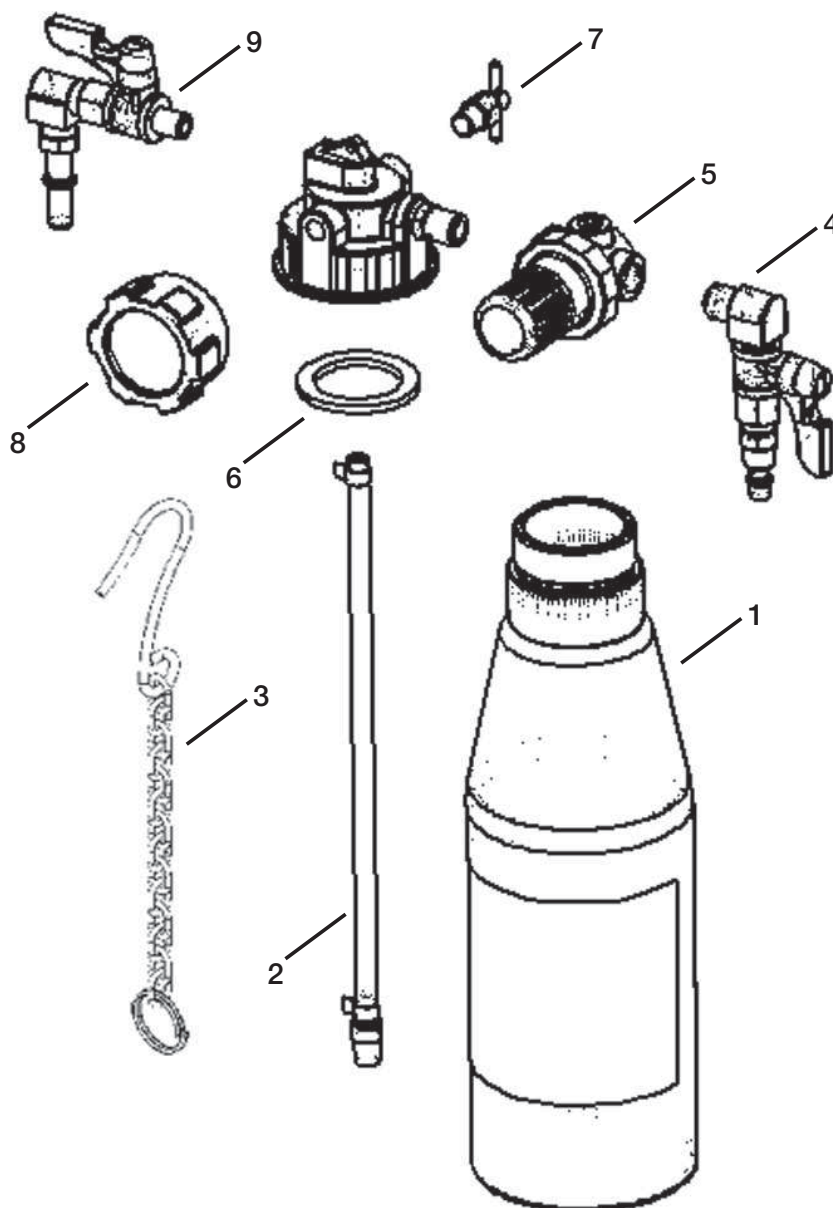
- Manifold Assembly
 - 0 to 150 PSI (0 to 10 bar) pressure gauge
 - Adjustable pressure regulator
 - Air inlet nipple
 - Inlet valve
 - Outlet valve
 - Supply hose adapter
- Fluid canister
- Wall mount bracket
- User's manual (English, French, Spanish)

Model MV5565 includes the following high quality components:




















- Manifold Assembly
 - 0 to 150 PSI (0 to 10 bar) pressure gauge
 - Adjustable pressure regulator
 - Air inlet nipple
 - Inlet valve
 - Outlet valve
 - Supply hose adapter
- Fluid canister
- Supply Hose
- Wall mount bracket
- User's manual (English, French, Spanish)

Service Parts & Accessories
















	Part Number	Description
1	801832	Canister
2	801831	Pick-up Tube & Filter Assy
3	801825	Hook & Chain Assembly
4	801828	Air Inlet & Valve Assembly
5	801827	Pressure Regulator
6	801833	Replacement Gasket
7	801830	Relief Valve
8	801826	Pressure Gauge
9	801829	Outlet Valve Assy



Fuel Injection Adapters

Description	Applications	Order No.	Reference No.	
3/8" Quick-change Adapter	GM, Chrysler, Jeep/Eagle	MVA512	1	
1/4" - 3/8" Barbed Flex Hose Adapter	Vehicles with 1/4", 5/16" or 3/8" rubber to steel hose connection	MVA505	16	
1/4" Flex Hose Adapter	Vehicles with 1/4" rubber to steel hose connection		16A	
5/16" Flex Hose Adapter	Vehicles with 5/16" rubber to steel hose connection		16B	
3/8" Flex Hose Adapter	Vehicles with 3/8" rubber to steel hose connection			
M8 x 1.0 Banjo Adapter	Toyota	MVA530	13B	
			13C	
M10 x 1.0 Banjo Adapter	Toyota	MVA531	14B	
			14C	
M12 x 1.25 Banjo Adapter	Toyota, Lexus, Geo, Honda, Acura, Hyundai, Mazda, Daihatsu, Chrysler imports	MVA532	15B	
			15C	
M14 x 1.5 Banjo Adapter		MVA533	23A	
			23C	
M12 x 1.5 Ball Nose Adapter	European vehicles with CIS fuel system	MVA517	12A	
			12B	
M14 x 1.5 Ball Nose Adapter	European vehicles with CIS fuel system	MVA518	10A	
			10B	
M16 x 1.5 Ball Nose Adapter	European vehicles with CIS fuel system	MVA519	11A	
			11B	

Fuel Injection Adapters

Description	Applications	Order No.	Reference No.	
M16 x 1.5 Adapter	GM Vortec	MVA520	3A	
			3B	
M14 x 1.5 Adapter	GM Vortec	MVA521	4A	
			4B	
3/8" Flare Nut Adapter	Carbureted & early fuel injected systems	MVA522	6A	
			6B	
5/16" Flare Nut Adapter	Carbureted & early fuel injected systems	MVA523	5A	
			5B	
3/8" Spring Lock Adapter	Ford fuel injection systems	MVA524	7A	
			7B	
1/2" Spring Lock Adapter	Ford fuel injection systems	MVA525	8A	
			8B	
5/16" Quick-Change Adapter	GM, Chrysler, Jeep/Eagle	MVA526	2B	
			2A	
10mm Quick-Change Adapter	Diesel	MVA534	24	

Proper Use, Care and Servicing

With proper care and maintenance, the Fuel Injection Cleaner will provide years of reliable service.

The Fuel Injection Cleaner is designed for cleaning modern fuel delivery systems on vehicles equipped with gasoline powered combustion engines.

- After use, always empty and drain any remaining cleaning solution from the Cleaner before storage.
- Always store the Cleaner in an upright position, in an open environment and away from extreme heat and open flames. We recommend hanging it with the wall mount bracket included with the kit.
- Inspect components regularly for damage, and replace or repair as necessary:
 - Check hoses for cracks and cuts
 - Check adapters for damage and wear to threads and sealing surfaces
 - Check female quick-connects for wear and cuts to o-rings
- After installing the Cleaner and pressurizing the system, check the Cleaner Assembly for leaks. If any leaks are evident, immediately relieve the pressure, disconnect the Cleaner, and send it to an authorized service center for repair.
- The Cleaner has a sintered bronze filter element at the end of the fluid pickup tube that extends into the canister. This filter may be removed and cleaned with a solvent. Ensure the filter is rid of all solvent before replacing.

Cleaning Solutions

The use of the Mityvac Fuel Injection Cleaner requires the separate purchase of cleaning solution(s) specially formulated for fuel injector or induction system cleaning using a canister style cleaner. We recommend use of the following solutions:

OTC Part #7000A INJECT-R KLEEN

OTC Part #7904 D-KARBONIZER

BG Part #211 ISC Induction System Cleaner

BG Part #206 Air Intake System Cleaner

BG Part #210 Fuel Injection System Cleaner

Check the specifications for the cleaning solution prior to use. Ensure it is specified for use with canister-style cleaning systems, and is formulated for the type of cleaning service to be performed.



WARNING

Fuel tank additives are not formulated for use in the Mityvac Fuel Injection Cleaner.

Connections

The outlet port of the fuel injection cleaner utilizes a special male quick-connect fitting (Fig. 1). This fitting was selected for several important reasons;

1. It conforms to the SAE J2044 specification for fuel fittings
2. It is a common fuel delivery system connection on which many manufacturers are standardizing
3. It does not restrict fuel flow
4. The female quick-connect on the mating connection hose, releases with a simple push-button action. No special tools are required to disconnect the fittings.

The mating connection hose as well as the adapters and fittings that connect the Cleaner into the fuel delivery system utilize the same SAE J2044 endform (Fig. 2).

To secure the male to female connection, simply push the male endform into the female quick-connect until it snaps securely into place (Fig. 3). Always test the connection by trying to pull it apart without pressing the release button.

Adapters

Mityvac offers a selection of adapters for connecting the Cleaner to the fuel injection systems of a wide range of automotive makes and models. The chart on pages 6 and 7 outlines the adapters available, and their applications. Each adapter is etched with an identification number for easy reference. Most of these adapters come standard with the Mityvac FST. If you do not own an FST, they must be purchased separately from an authorized Mityvac distributor. Adapters can be purchased separately in sets according to the order number indicated in the chart.

In most cases, selecting and installing adapters to the fuel injection system and connecting the Cleaner, is straightforward and logical. Simply match the fuel system connection to the equivalent adapter, and install it as outlined in the instructions later in this manual.



Figure 1



Figure 2



Figure 3

Set-up and Operation

Fuel Injector Cleaning

When performing fuel injector cleaning, the Cleaner should be installed as close as possible to the inlet of the fuel rail. On most vehicle models the fuel supply line can be disconnected directly from the end of the fuel rail, and the Cleaner connected in its place. If not, the Cleaner can often be connected just before the fuel rail at an alternate connection such as a flexible rubber to steel hose connection or at the outlet of the fuel filter.

1. Run the car until the engine is at operating temperature.
2. Place the vehicle transmission in park or neutral, apply the parking brake, and turn off the key.
3. Unscrew the Fuel Injection Cleaner canister bottle from the manifold assembly and pour in the appropriate fuel injector cleaning solution.
4. Screw the canister back into the manifold assembly, and hang the Cleaner under the vehicle's hood using the chain provided.
5. Close the Cleaner inlet and outlet valves.
6. Close the relief valve by turning it clockwise until tight.
7. Pull out on the regulator adjustment knob to unlock it, and adjust the regulator to fully open by rotating the knob counter-clockwise.
8. Connect the cleaner supply hose to the outlet of the Cleaner (Fig. 4).
9. Connect shop air supply to the Cleaner inlet. Ensure the shop air pressure is no greater than 150 psi (10 bar) (Fig. 5).
10. Follow the vehicle manufacturer's recommended procedure to relieve the pressure from the vehicle fuel delivery system.
11. If not done in the previous step, disable the fuel pump by removing the fuse or relay, or unplugging it from the power supply.
12. Locate the fuel supply line to the engine's fuel rail, and select the best location to disconnect the supply line and install the hose extending from the Cleaner.
13. Remove or disconnect any obstacles required to gain access to the connection, and place shop towels under and around the connection to adsorb fuel from the disconnected line.

Note: To minimize fuel spillage and reduce the amount of time the fuel line is disconnected, try to identify the type of connection before disconnecting the fuel line, and have the required connection adapter readily available.



Figure 4



Figure 5

14. Follow the vehicle manufacturer's service information for the proper method to disconnect the fuel line. Special wrenches or disconnect tools may be required (Fig. 6). Prop the loose end of the fuel supply line in a position to prevent fuel from leaking out.



WARNING

Avoid spilling fuel on hot engine parts. Clean up any fuel spills immediately after they occur.

15. Install the appropriate adapter to the fuel line running to the fuel rail, or directly onto the fuel rail.

Note: If the fuel line connection used by the vehicle manufacturer is a 3/8" quick-connect style (SAE J2044), an adapter is not required (Fig. 7).

16. Connect the hose extending from the Cleaner to the other end of the adapter.
17. Open the inlet valve located between the shop air connection and the regulator (Fig. 8).
18. Slowly close the air regulator by turning the knob clockwise until the pressure gauge reads 5 psi (.3 bar) below normal operating fuel pressure (Fig. 9).

The value for normal operating fuel pressure can be located in a service guide or repair manual for the specific vehicle.
19. Lock the regulator adjustment by pushing in on the knob.
20. Open the outlet valve between the canister and the hose connection (Fig. 10).
21. Before proceeding:
 - a. Double check the connections. The Cleaner should be installed such that the shop air enters the Cleaner, and cleaning solution flows from the Cleaner into the fuel rail.
 - b. Ensure the canister bottle is screwed securely into the manifold, and is not cross-threaded.
 - c. Route the Cleaner and shop air hoses, and the loose end of the fuel supply line away from rotating engine components, belts, fans, and hot exhaust components.
 - d. Remove the fuel spillage rags.
 - e. Reconnect components such as PCV tubes, wiring harnesses, vacuum tubes, etc., that were disconnected to gain access to the fuel line connection.



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10

22. Start the engine and allow it to idle using the cleaning solution inside the canister.
23. Run the engine until all the cleaning solution in the canister has been used. This should take around 10 to 15 minutes.

Use wide-open-throttle blips two or three times during this procedure to exercise the injectors and help clear them of deposits.

24. Once the cleaning solution has been used and the car stalls, close the air inlet valve (Fig. 11).
25. Open the relief valve to release the system pressure (Fig. 12).
26. Wrap a rag around the connection between the cleaner hose and the vehicle's fuel system, and disconnect the hose.
27. Reconnect the vehicle fuel supply line and reactivate the fuel pump.
28. Disconnect the air supply and cleaner hose from the Cleaner. Properly dispose of any cleaning solution remaining the bottle and hang the Cleaner on the wall mount for storage.



Figure 11



Figure 12

Intake System Decarbonizing **(requires MVA550 Decarb Nozzle, sold separately)**

The Decarb Nozzle (MVA550) should be installed inside the air intake duct, where it clamps to the inlet of the throttle body. It must be installed downstream of the mass airflow sensor (Fig. 13), so the cleaning solution does not come in contact with the delicate sensor. In some cases, the mass airflow sensor is mounted in the throttle body. Do not use the Cleaner to perform air induction cleaning on this type of air intake system.

The spray nozzle should point directly at the center of the throttle plate without touching it. With the nozzle inserted into the air stream, the small S-shaped steel tube should pass between the air duct and the throttle body at the point where the duct clamps onto the throttle body inlet. The supply hose connection end of the nozzle assembly should extend outside of the duct and the whole assembly held in place with the worm clamp that secures the air duct to the throttle body. The S-shaped steel tube can be bent into any shape required for the installation.

1. Run the car until the engine is at operating temperature.
2. Place the vehicle transmission in park or neutral, apply the parking brake, and turn off the key.
3. Loosen the clamp securing the air intake duct to the inlet of the throttle body (Fig. 14).
4. Slide the air intake duct off the throttle body and the install the Decarb Nozzle so the spray nozzle end is aimed at the center of the throttle plate, but not touching it (Fig. 15).
5. With the nozzle pointed at the throttle plate, bend and position the S-shaped steel tube so the air intake duct can be slipped over it (Fig. 16).
6. Secure the adapter in place by tightening the hose clamp. For additional support and to ensure the Decarb Nozzle remains in the proper position, an extended clamp, part no. MVA551 is available for separate purchase. See page 3 for additional details.
7. Unscrew the Cleaner canister bottle from the manifold assembly and pour in the appropriate decarbonizing solution.
8. Screw the canister back into the manifold assembly, and hang the Cleaner under the vehicle's hood using the chain provided.
9. Close the Cleaner inlet and outlet valves.
10. Close the relief valve by turning it clockwise until tight.
11. Pull out on the regulator adjustment knob to unlock it, and adjust the regulator to fully open by rotating the knob counter-clockwise.

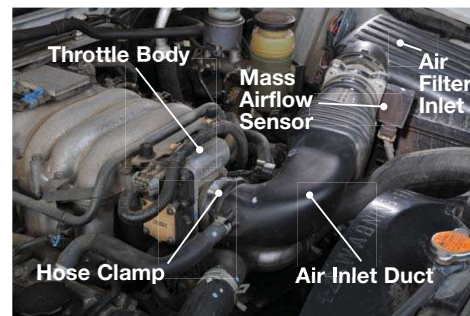


Figure 13



Figure 14



Figure 15



Figure 16



Figure 17

12. Connect one end of the Cleaner Hose to the outlet of the Cleaner (Fig. 17), the other end to inlet of the Decarb Adapter (Fig. 18).
13. Connect shop air supply to the Cleaner inlet. Ensure the shop air pressure is no greater than 150 psi (10 bar) (Fig. 19).
14. Start the vehicle and allow it to idle.
15. Return to the Cleaner and open the air inlet valve (Fig. 20).
16. Rotate the regulator adjustment knob clockwise until the pressure gauge reads approximately 60 psi (4 bar) (Fig. 21).
17. Open the outlet valve to allow the cleaning solution to spray into the air stream (Fig. 22).

At 60 psi (4 bar) pressure, it will take approximately 8 minutes to inject 12 oz (350 ml) of cleaning solution into the air stream.

18. Close the air inlet valve when the canister is empty of solution.
19. Turn off the car.
20. Allow the pressure to return to zero, and disconnect and disassemble the Cleaner. Properly dispose of any unused cleaning solution.
21. Remove the nozzle from the air induction system and re-secure the air intake hose.

Note: Do not start the engine for 30 minutes. This will allow the solution to soften and dissolve the carbon deposits. After 30 minutes, test drive the vehicle for at least 15 minutes to flush carbon deposits out of the system.



Figure 18



Figure 19



Figure 20



Figure 21



Figure 22