

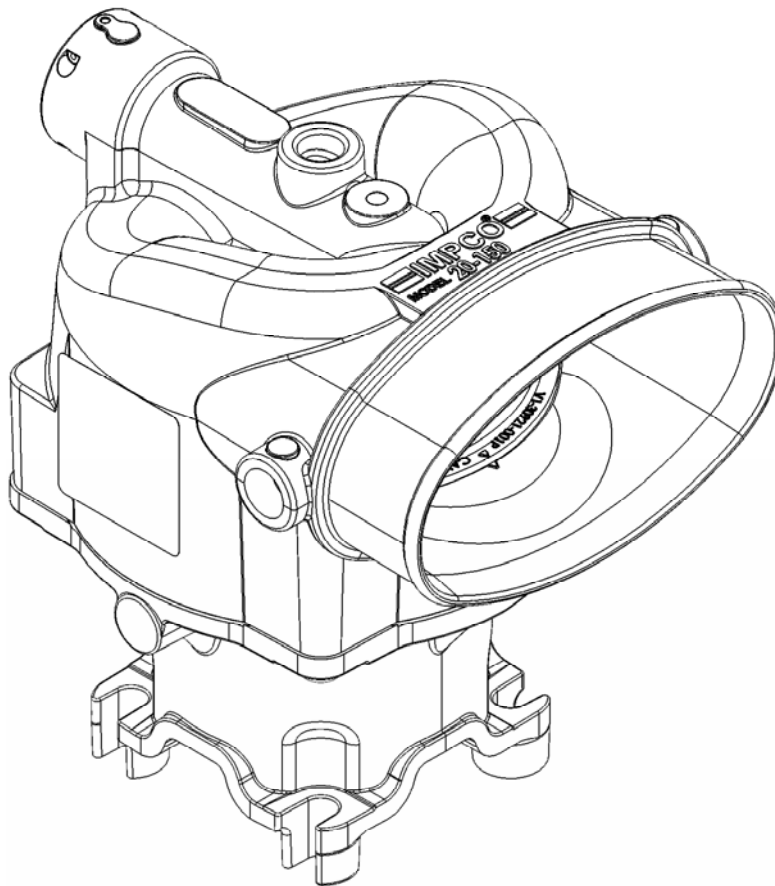


FT150 MIXER

REPAIR KIT INSTRUCTIONS

This PPI addresses the procedure to service the FT150 Fuel Mixer used on the certified Spectrum III 4.3 liter GM engines in the event the fuel mixer becomes contaminated.

It is important to maintain clean air to the fuel mixer, intake and engine to prevent malfunction, wear or premature failure of both the fuel system and engine. The Recommended Maintenance Schedule calls for inspection of the air intake system and cleaning of the air filter element every 200 hours, or every 100 hours for dusty environments. The air filter element replacement is called out annually, or bi-annually in dusty environments. This is the minimum requirement to maintain the fuel system emission warranty. More frequent inspection, cleaning or replacement of the air filtration element is recommended for special circumstances that may be present. This is known as special maintenance, and failure to follow this recommendation may be used to deny a warranty claim.



Spectrum Series III FT150 Mixer

SERVICING THE FT150 MIXER:

I. FUEL SHUT-OFF PROCEDURE

CAUTION

The LPG fuel system operates at pressure up to 21.5 bar (312 psi). To minimize personal injury, relieve the LPG fuel system pressure before servicing the LPG fuel system components.

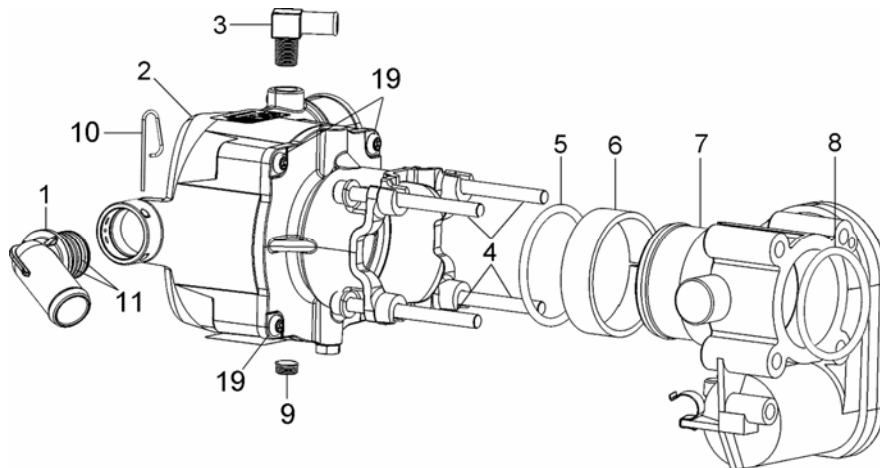
2. Start and run the vehicle until the engine stalls from the lack of fuel.
3. Turn the ignition switch to OFF.
4. Disconnect the negative battery cable.

WARNING

Residual vapor pressure will be present in the fuel system. Ensure the work area is well ventilated before disconnecting any fuel line.

1. Close the manual shut-off valve (MSV) on the LPG fuel tank.

II. MIXER REMOVAL PROCEDURE



Item #	Description	Qty. Used	IMPCO PART NUMBER
1	Fitting, 70-Degree, 3/4" OD	1	AF4-31197-001
2	Mixer Assembly, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8 NPT 3/8 Hs 90 El Brass	1	401-02
4	Screw, Hex Sock Cap	4	S1-30295-0675
5	O-Ring Nitrile, #225*	1	S3-1524-004*
6	Sleeve, Plastic Bosch Throttle	1	S6-30976-001
7	Bosch Throttle Body, 40mm	1	E1312100
8	O-Ring Nitrile, #032*	1	S3-1524-003*
9	Plug, 1/8 NPT 3/16 Hex Sch Brass	1	P3-46
10	Retaining Pin	1	P1-30559
11	O-ring*	2	S3-31195-001*
19	Screw	4	S1-31042-0516

*Included in Repair Kit

The FT150 Throttle Body Assembly and related component parts.

1. Remove the air intake duct.
2. Remove the Retaining Pin (10) holding the Fuel Hose Fitting (1) and remove fuel hose.
3. Remove 3/8" hose from the 90° Brass Fitting (3).
4. Remove the four Screws (4) securing the Mixer and Throttle Body to the Intake Adapter.

NOTE: The Throttle Body may come off the Adapter.

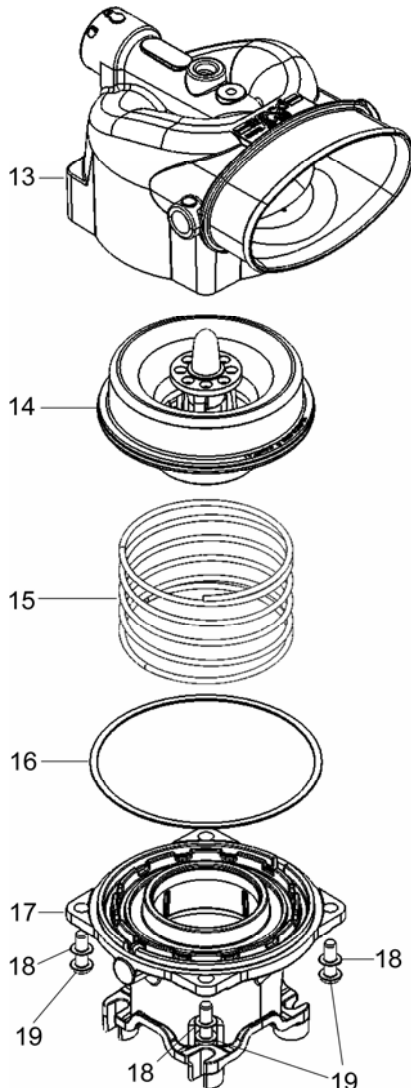
5. Remove O-ring (5) and Plastic Sleeve (6)

from the Throttle Body (7). Discard O-ring (5).

NOTE: The O-ring (5) between the Mixer (2) and Throttle Body may become lodged in the Lower Adapter (17) of the Mixer.

6. Remove two O-rings (11) on the Fuel Hose Fitting (1) and discard.
7. Inspect Plastic Sleeve (6) for cracks or damage. Replace if necessary.

III. MIXER DISASSEMBLY



1. Remove four tamper resistant Screws (19) and Washers (18) from the Mixer (2) using a T25H Tamper Resistant Torx tool bit.
2. Remove bottom of Lower Adapter (17), Spring (15) and Air Gas Valve Assembly (14) from Body (13)
3. Clean the Mixer Body (13), Air Gas Valve (14), Spring (15), Lower Adapter (17) and any other affected components with Safety Solvent to remove dirt, residue or any other type of contamination.



WARNING

Use only Safety Solvents for the cleaning of the regulator and its components. Solvents such as carburetor or brake cleaners may damage gaskets, seals, O-rings, diaphragms or other non-metal components.

FT150 Mixer Components

Item #	Description	Qty. Used	IMPCO Part Number
13	Body, 150 carb, 20 Series	1	B1-30920-20-150
14	Air Valve, 150 Series	1	V1-30921-002
15	Spring, 150 Series	1	S2-30936-150
16	Gasket, Compression*	1	G1-31252-150*
17	Adapter, Lower 150	1	A3-30927-001
18	Washer, Split Loc SS	4	W1-31068-002
19	Screw, Butt HD, Torx Tamper Resistant	4	S1-31042-0516

*Included in Repair Kit

Component View of the FT150 Mixer

IV. INSTALLATION PROCEDURE

1. Assemble the Air Gas Valve Assembly (14), Spring (15), Gasket (16) and Lower Adapter (17) and secure with four Screws (18) and Washers (19). Using a T25H Tamper Resistant Torx tool bit, **torque screws to 2.5-3.0 Nm (22-27 in. lbs).**
2. Lightly lubricate new O-ring (5) with Vaseline or petroleum jelly prior to installation.



WARNING

Contamination of the HEGO sensor can result from the use of an inappropriate RTV sealer or silicone spray products. Do not use silicone sprays or hoses which are assembled using silicone lubricants. Always use "oxygen sensor safe" RTV sealant for repair procedures. Silicon contamination will cause a high but false HEGO signal voltage (rich exhaust indication). The ECM will then reduce the amount of fuel delivery to the engine, causing a severe drivability problem. If silicone contamination is suspected, remove and visually inspect the sensor element. If contaminated, the portion of the sensor exposed to the exhaust stream will have a white powdery coating. Always be sure to eliminate the cause of contamination before replacing the sensor.

3. Place Plastic Sleeve (6), new O-ring (5) and Mixer (2) on top of the Throttle Body and align to screw holes. Secure the assembly with the four Screws (19). **Torque to 12 N•m (106 in. lb.).**

NOTE: Replace O-ring (8) between the Throttle Body and Intake Adapter if the Throttle Body was removed from the Intake Adapter during disassembly.

4. Place two new O-rings (11) on the Fuel Hose Fitting (1), lightly lubricate with Vaseline or petroleum jelly and insert fuel hose fitting into the Mixer (2). Secure with Retaining Pin (10).
5. Install the air intake duct.

6. Install 3/8" hose to the 90° Brass Fitting (3).
7. Reconnect the negative battery cable.
8. Open LPG tank manual shut-off valve.
9. Turn ignition to ON for approximately 30 seconds, then OFF.
10. Leak check the LPG fuel system at each serviced fitting.
11. Start the vehicle and leak check the LPG fuel system at each serviced fitting.
12. Test drive vehicle to ensure it operates correctly at all throttle ranges.



CAUTION

Never use an open flame of any type to check for LPG leaks.

IMPORTANT

Always inspect the LPG fuel system for leaks after performing service. Check for leaks at the fittings of the serviced or replaced component. Use a commercially available liquid leak detector or an electronic leak detector. When using both methods, use the electronic leak detector first to avoid contamination by the liquid leak detector.



Repair Kit, IMPCO P/N RK-FT150 Components

Part Number	Description	Illustration #	Qty
G1-31252-150	Gasket	16	1
S3-31195-001	O-Ring	11	2
S3-1524-004	O-Ring	5	1
S3-1524-003	O-Ring	8	1

WARNING:

**IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY CAUSE
SERIOUS INJURY AND/OR PROPERTY DAMAGE.**

SERVICE TECHNICIANS AND USERS

SHOULD CAREFULLY READ AND ABIDE BY THE PROVISIONS SET FORTH IN NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37 FOR STATIONARY ENGINES, #52 FOR CNG VEHICULAR FUEL SYSTEMS OR #58 FOR LPG SYSTEMS.

INSTALLERS

LPG INSTALLATIONS IN THE UNITED STATES MUST BE DONE IN ACCORDANCE WITH FEDERAL STATE OR LOCAL LAW, WHICHEVER IS APPLICABLE AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #58, STANDARD FOR STORAGE AND HANDLING OF LIQUEFIED PETROLEUM GASES TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA

REFER TO CAN/CGA PROPANE INSTALLATION CODES.

CNG INSTALLATIONS IN THE UNITED STATES

MUST BE DONE IN ACCORDANCE WITH FEDERAL STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #52, COMPRESSED NATURAL GAS (CNG) VEHICULAR FUEL SYSTEMS TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW.

IN CANADA

REFER TO CAN/CGA CNG INSTALLATION CODES.

LPG AND/OR NATURAL GAS INSTALLATIONS ON STATIONARY ENGINES

MUST BE DONE IN ACCORDANCE WITH FEDERAL, STATE OR LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37, STATIONARY COMBUSTION ENGINES AND GAS TURBINE ENGINES, TO THE EXTENT THESE STANDARDS ARE NOT IN VIOLATION WITH FEDERAL, STATE OR LOCAL LAW. FAILURE TO ABIDE BY THE ABOVE WILL VOID ANY IMPCO WARRANTY ON THE PRODUCTS AND MAY CAUSE SERIOUS INJURY OR PROPERTY DAMAGE.

DUE TO THE INHERENT DANGER OF GASEOUS FUELS THE IMPCO PRODUCTS SHOULD NOT BE INSTALLED OR USED BY PERSONS NOT KNOWLEDGEABLE OF THE HAZARDS ASSOCIATED WITH THE USE OF GASEOUS FUELS.