



Master Parts Catalog

Includes all saleable parts as of October, 2020 for Industrial Engine applications

*Excludes some Spectrum Series applications covered by
manufacturer specific manuals and the line of automotive applications.*

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Table of Contents

Introduction	5
About IMPCO	5
IMPCO Offices.....	6
IMPCO Distributors.....	6
Standard LPG Fuel System Engine Maintenance Schedule	7
Safety	8
Carburetion Theory and Operation	10
Diaphragm Operated Air-Gas Valve Carburetion	11
Carburetors & Mixers	15
Model CA55.....	16
Model CA55-250L.....	20
Model CA55-500L.....	23
Model CA55-750L.....	27
CA55 Mixers & Carburetors.....	31
Model 60.....	32
Model CA100.....	35
Model CA110.....	41
Model CA125.....	45
Model CA125M-10.....	50
Model 200.....	54
Model 200D	59
Model 200T	63
Model 210.....	67
Model 225.....	71
Model 300A	77
Model 400VF	82
Model 425.....	87
Model 600.....	93
Model 600D	97
Model 600 Varifuel.....	102
Model 600D Varifuel	107
Fuel Metering	111
Carburetor Adapters	112
Venturis	118
Choice Fuel® Custom Outlet Fittings	123
130 Series Load Blocks	124
Power Adjustment Elbow.....	125
100 Series Fuel Tubes	126
2F Series Spud in Tubes	127
Vacuum Switches	128
Commander OZ Air/Fuel Control Unit.....	129

Fuel Control Parts.....	131
In Line Power Valves AB1-16 / AB1-32	132
FCV Solenoid Kit	133
Fuel Control Valves	134
Regulator Control Valves.....	135
Regulators.....	136
Model AHR50-D	137
11A17-001	139
Model T52	142
Model KN.....	144
2KN / 3KN Module.....	147
Model 202A	149
Model T60	151
Model J.....	155
Model PJ	159
COBRA.....	163
P-COBRA	167
Model C250A.....	171
Model 120A	175
Model L.....	178
Model E & PE	182
Model EV & PEV	187
Model IMP	193
Fuel Shut-Off / Lockoffs	195
VFF30.....	196
ET98	200
ET98 w/ Filter	203
FL-206	206
FL-218-12V	208
FL-418-12V	210
FL-50046 / FL-52826.....	212
FL-51767	216
Adapters	218
A2 Model (Air Horns)	219
A3 Model (Mixers)	220
S3 Model (Spacers).....	222
A1-61 (5-1/8" Air Horn)	223
UNIDAPT Adapter System	224
Carter Thermo Quad	226
Fuel Injectors & Misc. Components.....	227
ES2 Fuel Injector	228
SGI Injector Regulator	231



Repair Kits	233
AL1 Model Levers.....	234
Throttle Stop Levers	237
AB1 / AB4 Bracket Assemblies	238
Universal Mounting Bracket.....	239
Air Filters	240
Fuel Filters.....	241
Tools & Test Equipment	243
Engine Kits & Modules	246
Turbocharger Pressure Control Valve	247
Quick Connect Fittings	248
Fitting, Ball Check Assembly	249
Needle Bearings	250
Filter Repair Kit.....	251
Harness Relay & Bracket	252
Fittings & Hoses	253
Port Fittings & Hardware	254
Spectrum Series II	262
2.0-2.4L Mitsubishi Lift Trucks	263
3.0L LPG Lift Trucks.....	278
3.0L Gasoline Lift Trucks.....	291
4.3L LPG Lift Trucks.....	300
4.3L Gasoline Lift Trucks.....	319
4.3L Dual Fuel Lift Trucks.....	332
Spectrum Series III	351
4.3L Toyota Lift Trucks	352
4.3L MCFA Lift Trucks.....	391
NMHG 2.0 & 2.2L Lift Trucks.....	417
4.3L Generic Lift Trucks	429
3.0L Generic Lift Trucks	449
Definitions	463

Introduction

This IMPCO Master Catalog lists saleable parts for small engine, material handling, early automotive and large engine applications sold under brand names IMPCO, Beam Garretson and Algas with the following exceptions:

- Spectrum Series—these systems are covered in specific OEM Service and Parts Catalogs.
- Sequent System—these automotive systems will be covered in separate publications

The catalog is broken into six major sections covering Carburetors/Mixers, Fuel Metering, Regulators, Shut-Off/Lockoff Valves, Adapters and Accessories. The brand of most components (IMPCO, Beam Garretson and Algas) is shown on the page headers. Items listed as “NSS” (Not Serviced Separately) are no longer available, not available separately, or are only available as part of an assembly or repair kit.

IMPCO Technologies reserves the right to add, delete, or modify parts or information without notice. Any component dimensions are for reference or installation purposes only. They are not to be used for quality, inspection, or testing purposes.

Every effort has been taken to ensure accuracy within this catalog. In the event of a discrepancy, please notify sales@impcotechnologies.com or call (714) 656-1200.

About IMPCO

In 1957, Herbert V. Hills and Richard Baverstock founded the Imperial Machine Products Company in a small Quonset hut in South Gate, California. The following year, their first product was released. Called the "IMPERIAL," the automotive carburetor is still sold today as the CA300A. The company entered the industrial market with the introduction of the CA100 carburetor in 1960.

In 1967, AJ Industries (Alaska Juneau Gold Mining Company) purchased the company, renamed it IMPCO Carburetion and relocated to Cerritos, California. IMPCO purchased Beam Products Company in 1986 and in 1989, IMPCO became a publicly traded company after a leveraged buyout by AirSensors, Inc.

IMPCO rapidly expanded in the 1990s, with the purchase of the Garretson Equipment Company in 1997, followed by J & S Products and Algas Carburetion in 1998. The company facilities were expanded with the establishment of offices in Europe, Australia, Mexico and Japan and the name changed to IMPCO Technologies.

The Spectrum series of emission certified engines was launched in 2000 and by 2002, IMPCO attained a 70% market share.

In 2003, IMPCO joined the Italian company BRC and in 2006, the two companies were brought together as subsidiaries of Fuel Systems Solutions, Inc. In 2016, IMPCO merged with Westport to become a subsidiary of Westport Fuel Systems.

In 2017, EControls acquired IMPCO's industrial division which included the Santa Ana facility, as well as entities and facilities in The Netherlands, France, Germany, Japan, and South Korea combining to become the pre-eminent systems provider in the industrial and heavy duty markets.

Over the past 50 years, IMPCO Technologies developed into a global business, serving the needs of customers in every major market with our patented Spectrum® Fuel Management Systems, Certified Engines and traditional gaseous fuel carburetion components. We are the world's leader in the technology, marketing and manufacturing of products and systems which allow internal combustion engines to operate on clean burning gaseous fuels such as LPG and Natural Gas.



IMPCO Offices

IMPCO Technologies operates business offices and manufacturing facilities around the world, dedicated to assisting OEMs, governments and companies.

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IMPCO Distributors

IMPCO sells through its global distributor network. For product sales and technical information, please contact a distributor near you. For distributors in countries not listed, contact the IMPCO business office in your country for assistance.

All technical and/or product sales questions should be directed towards the distributors listed. Distributors engineer and produce a wide variety of aftermarket conversion kits for on and off highway applications.

To obtain contact information for IMPCO distributors, click on the link below:

www.impcotechologies.com/purchase-products



Standard LPG Fuel System Engine Maintenance Schedule

(Typically Applicable for CNG)

Perform the following maintenance on the engine at the hours indicated and at equivalent hour intervals thereafter.										
This maintenance schedule represents the manufacturer's recommended maintenance intervals to maintain proper engine/equipment function. Federal, State, or Local regulations may require additional or more frequent inspection or maintenance intervals than those specified above. Check with the authority having jurisdiction for details.	Interval Hours									
	Daily	1000	1500	2000	2500	3000	3500	4000	4500	5000
General Maintenance Section										
Visual check for fluid leaks	X									
Check engine oil level	X									
Check coolant level	X									
Change engine oil and filter	Follow Engine Manufactures Recommendations									
Check LPG system for leaks	After any service or maintenance activity									
Inspect accessory drive belts for cracks, breaks, splits or glazing		X		X		X		X		X
Inspect electrical system wiring for cuts, abrasions or corrosion				X				X		
Inspect all vacuum lines and fittings for cracks, breaks or hardening				X				X		
Engine Coolant Section										
Clean debris from radiator core	Every 100 hours or 60 days of operation									
Change coolant	Follow Engine Manufactures Recommendations									
Inspect coolant hoses for cracks, swelling or deterioration		X		X		X		X		X
Replace coolant hoses and accessory drive belt	Every 2,000 hours or two years, whichever occurs first									
Engine Ignition System										
Inspect Battery case for leaks or damage		X		X		X		X		X
Inspect battery cables for damage corrosion or contamination		X		X		X		X		X
Check all electrical connector retainer locks		X		X		X		X		X
Inspect crank sensor timing wheel for debris or damage	Every 100 hours or 60 days of operation									
Clean ignition coil		X		X		X		X		X
Replace spark plugs			X			X			X	
Replace distributor cap and rotor						X				
Check spark plug wires for cuts abrasions or hardening			X						X	
Replace spark plug wires						X				
Fuel System Maintenance										
Clean air filter element	Every 200 hours, or every 100 hours in dusty									
Replace air filter element	Annually, or Bi-annually in dusty environments									
Replace fuel filter					X					X
Inspect Shut-off Valve for leaks and closing			X			X				
Check throttle linkage for sticking				X				X		
Leak check fuel lines				X				X		
Check air induction for leaks				X				X		
Check manifold for vacuum leaks				X				X		
Check injector & rails for leaks				X				X		
Inspect low pressure regulator for coolant leaks	Annually or every 1500 hours									
Rebuild or replace low pressure regulator	Every 2500 hours									
Engine Exhaust System										
Inspect exhaust manifold for leaks				X				X		
Inspect exhaust piping for leaks				X				X		
Check exhaust carbon monoxide emission and adjust if required			X			X			X	
Inspect muffler for mechanical damage			X						X	

Note: propane engines are designed to operate on HD-5 or HD-10 specification LPG fuel. Fuel other than HD-5 or HD-10 may cause harm to the engine's emission control system and a warranty claim may be denied on this basis if operators can readily find the proper fuel*. Use of any other fuel may result in your engine no longer operating in compliance with CARB or EPA emissions requirements. *Not Applicable in the state of California.

Safety



ALL PROCEDURES DESCRIBED IN THIS SECTION SHOULD BE PERFORMED ONLY WHEN THE VEHICLE (IF APPLICABLE) IS IN NEUTRAL ON A LEVEL SURFACE AND THE PARKING BRAKE IS SET.

WARNING:

IMPROPER INSTALLATION OR USE OF THIS PRODUCT MAY CAUSE SERIOUS INJURY, DEATH AND/OR PROPERTY DAMAGE

Natural Gas or LPG Installations in the US:

- NFPA 37** Standard for the Installation and USE of Stationary Combustion Engines and Gas Turbines
- NFPA 52** Vehicular Natural Gas Fuel Systems Code
- NFPA 58** Liquefied Petroleum Gas Code

SERVICE TECHNICIANS AND USERS SHALL CAREFULLY READ AND ABIDE BY THE PROVISIONS SET FORTH IN NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET (NFPA) #37 FOR STATIONARY COMBUSTION ENGINE STANDARDS, NFPA #52 FOR NATURAL GAS FUEL SYSTEMS OR NFPA 58 FOR STORAGE, HANDLING, TRANSPORTATION AND USE OF LPG.

INSTALLERS LPG INSTALLATIONS IN THE UNITED STATES MUST BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, LOCAL LAWS 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 OF FEDERAL, STATE AND/OR LOCAL LAW.

COUNTRIES OUTSIDE OF USA REFER TO THE GOVERNING AGENCIES OVERSEEING CNG AND PROPANE APPLICATIONS.

CNG INSTALLATIONS IN THE UNITED STATES MUST BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, 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 OF FEDERAL, STATE OR LOCAL LAW.

LPG AND/OR NATURAL GAS INSTALLATIONS ON STATIONARY ENGINES MUST BE PERFORMED IN ACCORDANCE WITH FEDERAL, STATE, LOCAL LAW AND NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET #37, STANDARD FOR THE INSTALLATION AND USE OF STATIONARY COMBUSTION ENGINES AND GAS TURBINES, 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.

SERVICE TECHNICIANS DUE TO THE INHERENT DANGER OF GASEOUS FUELS, IMPCO PRODUCTS MUST NOT BE INSTALLED OR USED BY PERSONS NOT KNOWLEDGEABLE OF THE HAZARDS ASSOCIATED WITH THE USE OF GASEOUS FUELS. ANY MAINTENANCE, SERVICE OR REPAIR SHALL BE PERFORMED BY TRAINED AND EXPERIENCED SERVICE TECHNICIANS.

PROPER TOOLS AND EQUIPMENT PROPER TOOLS AND EQUIPMENT MUST BE USED TO PREVENT INJURY TO THE SERVICING TECHNICIAN, PROPERTY OR SYSTEM COMPONENTS. SERVICE REPAIRS SHALL ALWAYS BE PERFORMED IN A SAFE ENVIRONMENT AND THE TECHNICIAN MUST ALWAYS WEAR PROTECTIVE CLOTHING TO PREVENT INJURY.

INSPECT PRIOR TO USE ALWAYS INSPECT THE MAJOR CASTING PIECES FOR DAMAGE, CORROSION OR CRACKS BEFORE ATTEMPTING TO SERVICE AND/OR REPAIR. BE SURE THE REPAIR KIT PART NUMBER YOU ARE USING IS CORRECT FOR THE COMPONENT(S) BEING SERVICED.

NO TEFLON TAPE DO NOT USE TEFLON TAPE TO SEAL ANY FUEL FITTINGS. FAILURE TO FOLLOW THIS WARNING MAY CAUSE THE REGULATOR TO LEAK INTERNALLY, POSSIBLY RESULTING IN SERIOUS INJURY, DEATH AND/OR PROPERTY DAMAGE AND MAY VOID ANY WARRANTY COVERAGE.

PROPOSITION 65 WARNING:  THIS PRODUCT CAN EXPOSE YOU TO CHEMICALS INCLUDING NICKEL, WHICH IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER. FOR MORE INFORMATION GO TO www.P65Warnings.ca.gov

Safety

READ BEFORE PERFORMING ANY SERVICE, MAINTENANCE OR REPAIR ON THE FUEL SYSTEM

There are safety regulations and standards that must be followed when installing or servicing gaseous fuel equipment on engines. It is highly recommended you obtain and read the following National Fire Protection Association (NFPA) guidelines:

- NFPA #37-Combustion Engines
- NFPA #52-CNG Vehicular Fuel Systems
- NFPA #54-National Fuel Gas Codes
- NFPA #58-LP Gas Storage
- NFPA #59-LP Gas Utility Plants
- NFPA #59A-LN Gas Storage and Handling

To order these documents, contact the National Fire Protection Agency at (800) 344-3555 or go to www.nfpa.org, expand the *Codes and Standards* menu, and click on *Document List and Code Cycle Information* to order online.

There are state standards and regulations enforced by the state fire marshal in most states.

There may be other local standards set by counties, cities and municipalities. Be sure to consult all regulatory agencies to assure adherence to all standards in enforcement.

Safety in the workplace is everyone's responsibility. Regardless of the type work you do, it is very important that you pay attention to what you are doing for your safety and the safety of those around you.

The following points are things to keep in mind when working on internal combustion engines and gaseous fuel systems:

- Before working on any fuel system, study the NFPA standard for the fuel in use.
- Before working on any fuel system, read and understand all manufacturers' recommended procedures.
- Before working on any fuel system, make sure you have local code approved safety goggles, face shields, gloves and clothing.
- Before working on any fuel system, make sure there is adequate ventilation.
- Before working on any fuel system, turn OFF the fuel system supply valve and run the engine until it stalls by running out of fuel. If this is not possible, slowly bleed the fuel from all lines before working on the fuel system or engine.
- After working on any fuel system, perform a leak test before starting the engine.

Remember:

- LPG is heavier than air and will sink to the lowest level. Avoid areas near flow drains or lubrication pits where escaped fuel may collect and all sources of ignition.
- Natural Gas is lighter than air and will rise to the highest point. Avoid areas near overhead heaters and all other sources of ignition.

Carburetion Theory and Operation

Carburetor: IMPCO carburetors have an air valve design, utilizing a relatively constant pressure drop to draw fuel into the carburetor from cranking to full load. The advantage of this design is a strong "signal" or vacuum set up by a metering spring (A) holding the air valve (B) closed. A pressure drop (C) under the air valve of approximately 6 inches of w.c. (water column) is required to open the valve during cranking. The vacuum is communicated to the converter (D). Additionally, air/valve vacuum is used to activate the vacuum fuel lock (if equipped with lock/filter).

Once the engine stops, fuel is sealed off within the carburetor, in the converter and fuel lock, providing a triple seal for safety.

The air/fuel metering device (referred to as a mixer), is completely self-contained and does not require a linkage or idle vacuum line to the intake manifold. This construction provides a wide range of flexibility when installing a mixer or complete carburetor.

Vaporizer. The IMPCO converter is a combined two-stage regulator and vaporizer. It receives a liquid fuel at tank pressure from the filter fuel lock (E) and reduces that pressure in two stages to

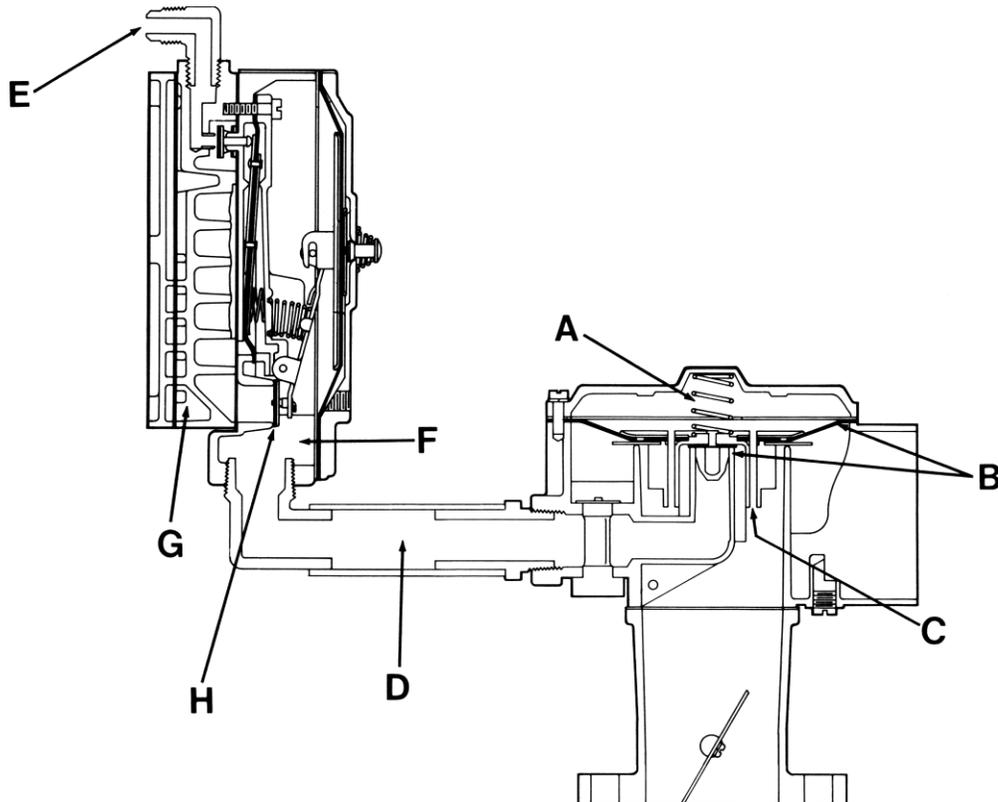
slightly less than atmospheric (F). When the engine is cranking or running, a partial vacuum is created in the fuel line to the carburetor (D), which opens the regulator, permitting fuel to flow to the carburetor.

In the process of reducing the pressure from tank of approximately 180 psi, the liquid LPG expands as it vaporizes, causing refrigeration. To compensate for the cooling effect and to assist in vaporization, water from the engine cooling system is circulated through a heat exchanger (G). The fuel flow is sealed off when the engine is stopped (H).

IMPCO makes various sizes of converters to suit a wide range of horsepower applications. These converters are also available with a variety of options.

Fuel Lock/Filter. The IMPCO carburetion system utilizes a fuel lock (not to be confused with the fuel lockoff valve). When a slight vacuum (2" w.c.) occurs, fuel is allowed to flow through a fuel filter and to the vaporizer. When the engine stops, regardless of whether the ignition key is on or off, the fuel is automatically shut off.

A filter is used to remove any large solid particles out of the fuel before entering the high pressure side of the vaporizer.



Diaphragm Operated Air-Gas Valve Carburetion

Most IMPCO air valve carburetors use diaphragms made of various materials such as synthetic rubber, silicone, hydryn and fiberglass. The Model 55 uses a metal piston with a sealing ring in place of a diaphragm for the purpose of reducing the carburetor size for small engines, however, the same operating principal applies to all. Cranking the engine lowers pressure in shaded area (see illustration below) causing the piston to descend. Through passages (P) in the air valve, the lowered pressure is communicated to the upper side of the diaphragm (D). As a result, atmospheric pressure pushing upward on the diaphragm lifts it against the downward pressure of the metering spring (S).

Approximately 0.2 psi (6" w.c.) of pressure is required to lift the air valve off its seat. Approximately 0.5 psi (13.8" w.c.) lifts the valve to the top of its travel in full open position.

Lowered pressure communicated to the top of the diaphragm varies with engine speed and position of throttle valve opening (T). The air valve assembly measures the airflow into the engine by moving precisely in response to the demands of the engine and throttle valve position.

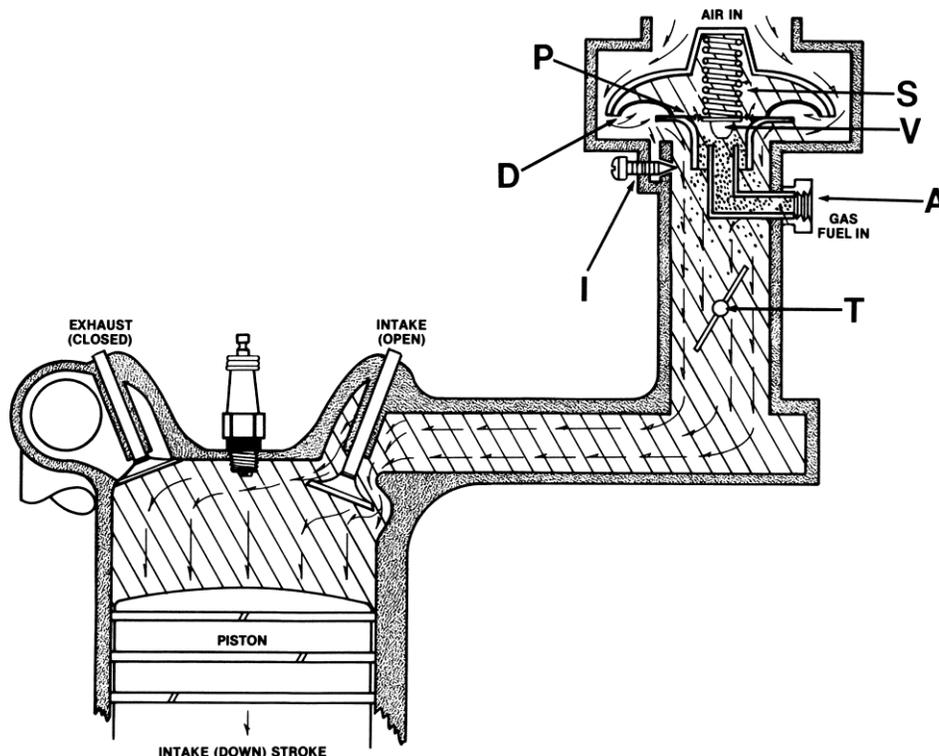
The controlled pressure drop of 0.2 to 0.5 psi (6" - 13.8" w.c.) set up by the metering spring provides the signal or force necessary to draw fuel into the air

stream within the carburetor. The gas metering valve (V) is attached to the air valve assembly and is shaped to admit the correct amount of fuel from the gas jet to mix with incoming air at any opening of the air valve.

IMPCO carburetors provide two limited-range mixture adjustments:

1. Idle Air Bypass Adjustment (I). The total volume of air and fuel passing the closed throttle at idle is constant. The idle adjustment bypasses a portion of incoming air around the air valve opening. As the idle adjustment is opened, the air valve partially closes, thereby closing the gas metering valve and leaning the idle air/fuel mixture.
2. Power Mixture Adjustment (A). Controls mixtures when gas metering valve is withdrawn from the jet. This adjustment is effective only when the engine approaches full-load condition and can be set only with the engine loaded, at or close to its rated RPM limit.

Mixtures between idle and full-load conditions are controlled by the shape of the gas metering valve, which is designed to produce lean mixtures at light loads and increasingly rich mixtures at heavier loads and higher engine speeds. The shape of the gas valve is designed for optimum air/fuel mixtures.





Selecting the Correct Carburetor Size

Airflow Capacities It is important to correctly match the airflow capacity of the IMPCO carburetor/mixer to the engine airflow requirement. If the carburetor/mixer is too small, then the power output of the engine will be limited. Conversely, a carburetor that is too large for an engine will create problems with idle stability and inconsistent fuel mixtures, especially at low speed. As a general rule, the airflow capacity of the carburetor should be reasonably close to the airflow requirement of the engine. If a carburetor is not available that matches the engine's airflow requirements, then it is usually recommended to use a larger carburetor than a smaller one (round the CID up). In general, use a smaller carburetor for maximum efficiency and a larger one for maximum power.

Consider these options when determining your carburetor/mixer needs.

The type of service the engine provides is another necessary consideration in selecting the appropriate carburetor (or mixer). An engine which is never operated at wide open throttle provides the best performance and service using carburetion, such as lift trucks and some passenger car applications. These engines have a degree of under carburetion, are easier to start and will develop the low end torque required suited for this type of service.

Engines used in high rpm ranges can be equipped with carburetors delivering somewhat over the air-low capacity dictated by the engine's airflow requirement and the larger capacity carburetor will be able to respond to maximum airflow requirements.

CID	ENGINE RPM (REVOLUTIONS PER MINUTE)																										
	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000	5200	5400	
50	5	7	10	12	15	17	20	22	25	27	30	32	34	37	39	42	44	47	49	52	54	57	59	61	64	66	
100	10	14	20	25	30	34	39	44	49	54	59	64	69	74	79	84	89	93	98	103	108	113	118	123	128	133	
150	15	22	30	37	44	52	59	66	74	81	89	96	103	111	118	125	133	140	148	155	162	170	177	184	192	199	
200	20	30	39	49	59	69	79	89	98	108	118	128	138	148	157	167	177	187	197	207	216	226	236	246	256	266	
250	25	37	49	61	74	86	98	111	123	135	148	160	172	184	197	209	221	234	246	258	271	283	295	307	320	332	
300	30	44	59	74	89	103	118	133	148	162	177	192	207	221	236	251	266	280	295	310	325	339	354	369	384	398	
350	34	52	69	86	103	121	138	155	172	189	207	224	241	258	275	293	310	327	344	362	379	396	413	430	448	465	
400	39	59	79	98	118	138	157	177	197	216	236	256	275	295	315	334	354	374	394	413	433	453	472	492	512	531	
450	44	66	89	111	133	155	177	199	221	243	266	288	310	332	354	376	398	421	443	465	487	509	531	553	576	598	
500	49	74	98	123	148	172	197	221	246	271	295	320	344	369	394	418	443	467	492	516	541	566	590	615	639		
550	54	81	108	135	162	189	216	243	271	298	325	352	379	406	433	460	487	514	541	568	595	622	649	676			
600	59	89	118	148	177	207	236	266	295	325	354	384	413	443	472	502	531	561	590	620	649	679	708				
650	64	96	128	160	192	224	256	288	320	352	384	416	448	480	512	544	576	607	639	671	703	735					
700	69	103	138	172	207	241	275	310	344	379	413	448	482	516	551	585	620	654	689	723	758						
750	74	111	148	184	221	258	295	332	369	406	443	480	516	553	590	627	664	701	738	775							
800	79	118	157	197	236	275	315	354	394	433	472	512	551	590	630	669	708	748	787								
850	84	125	167	209	251	293	334	376	418	460	502	544	585	627	669	711	753	794									
900	89	133	177	221	266	310	354	398	443	487	531	576	620	664	708	753	797										
950	93	140	187	234	280	327	374	421	467	514	561	607	654	701	748	794											
1000	98	148	197	246	295	344	394	443	492	541	590	639	689	738	787												
1050	103	155	207	258	310	362	413	465	516	568	620	671	723	775													
1100	108	162	216	271	325	379	433	487	541	595	649	703	758														
1150	113	170	226	283	339	396	453	509	566	622	679	735															
1200	118	177	236	295	354	413	472	531	590	649	708																
1250	123	184	246	307	369	430	492	553	615	676																	
1300	128	192	256	320	384	448	512	576	639																		
1350	133	199	266	332	398	465	531	598																			
1400	138	207	275	344	413	482	551																				
1450	143	214	285	357	428	499	571																				
1500	148	221	295	369	443	516	590																				
1550	152	229	305	381	457	534	610																				
1600	157	236	315	394	472	551	630																				
1650	162	243	325	406	487	568	649																				
1700	167	251	334	418	502	585	669																				
1750	172	258	344	430	516	603	689																				
1800	177	266	354	443	531	620	708																				
1850	182	273	364	455	546	637	728																				
1900	187	280	374	467	561	654	748																				
1950	192	288	384	480	576	671	767																				
2000	197	295	394	492	590	689	787																				
2050	202	303	403	504	605	706	807																				
2100	207	310	413	516	620	723	826																				
2150	212	317	423	529	635	740	846																				
2200	216	325	433	541	649	758	866																				
2250	221	332	443	553	664	775	885																				
2300	226	339	453	566	679	792	905																				
2350	231	347	462	578	694	809	925																				
2400	236	354	472	590	708	826	944																				
2450	241	362	482	603	723	844	964																				
2500	246	369	492	615	738	861	984																				
2550	251	376	502	627	753	878	1003																				

Engine airflow requirements are listed in Cubic Feet per Minute (CFM) at 85% volumetric efficiency for 4-cycle engine (double the CFM for 2-cycle engines).

To convert liters (L) to CID, multiply the Liter Displacement by 61.02.

Example : 2.0 x 61.02 = 122.04 CID

Note: Estimated engine airflow requirements by CID and maximum rpm (in CFM) based on 2" Hg manifold depression industrial engine.

2) Determining estimated engine airflow requirements

Using the chart on the previous page, find the engine airflow requirements for the engine displacement at its maximum rpms.

To find the estimated airflow requirement for the engine you are converting:

- Locate the engine's displacement (in CID) and maximum rpm on the chart.
- Draw a line across from the CID and down from the rpm.
- Where the lines cross is the airflow requirements (in CFM) for that engine.

Example:

A 351 CID turning 4,000 rpm (wide open throttle). Nearest engine airflow requirement from the chart is 344 cubic feet/minute.

3) Selection of proper carburetor/mixer based on the engine's airflow requirements. The following table gives the horsepower and maximum airflow ratings for IMPCO carburetors using LPG:

Model	Manifold Depression			
	1.5" Hg		2.0" Hg	
Model	HP (kW)	CFM (Ls)	HP (kW)	CFM (Ls)
55	-	-	73 (54)	118 (56)
60	-	-	73 (54)	95 (45)
100	106 (79)	170 (80)	123 (92)	197 (93)
110	-	-	106 (79)	170 (80)
125	126 (94)	202 (95)	146 (109)	235 (111)
200	172 (128)	276 (130)	215 (160)	345 (163)
200D	-	-	292 (218)	468 (221)
200T	-	-	425 (317)	680 (321)
210	-	-	215 (160)	345 (163)
225	205 (153)	329 (155)	237 (177)	380 (179)
300A (1 & 20)	217 (162)	348 (164)	-	-
300A (50 & 70)	270 (201)	432 (204)	-	-
400VF	-	-	320 (239)	500 (236)
425	287 (214)	460 (217)	333 (248)	533 (252)
600/600VF	-	-	600 (447)	960 (453)
600D/600DVF	-	-	1000 (745)	1600 (755)

Note: The above specifications are for LPG. Reduce hp/kW output by 10-15% for Natural Gas.

Mixers or carburetors using natural gas have nominal inlet pressures of +5" w.c. (over atmospheric).

4) Determine the engine's displacement and maximum RPM.

Determine the engine's maximum rpm either by locating it on the tachometer (if equipped) or from the user's manual.

5) Naturally aspirated engines:

$CID \times RPM \div 1728 \div 2 \times 0.85 = \text{Airflow requirement (CFM)}$. The engine airflow requirements determined by this equation are for 4-cycle engines with 85% volumetric efficiency. For 2-cycle engines, omit the division by 2.

- Multiply the CID times the rpm.
- Divide the result by 1728 to convert the cubic inches per minute (CIM) to CFM.
- Divide this by 2 for a 4-cycle engine (a 4-cycle engine only has an intake cycle every other revolution). Omit this step if engine is a 2-cycle.
- Multiply by 0.85 (85% volumetric efficiency) to get the engine's airflow requirement.

Example:

351 CID, 4-cycle carbureted engine with a maximum rpm of 2,000:

$$351 \times 2000 \div 1728 \div 2 \times 0.85 = 172.6 \text{ CFM}$$

6) Turbocharged Engines (with mixer upstream of turbocharger):

Turbocharged engines supply an additional boost in pressure over a naturally aspirated engine which must be calculated into the equation. To accomplish this:

- Determine the boost pressure of the turbocharger in Pounds per Square Inch (psi).
- Determine the % increase in supplied air pressure.
- The following equation is performed to calculate the percentage (%) increase in supplied air pressure, including atmospheric pressure (at sea level is 14.7 psi):

$$1 + ((\text{boost pressure in psi}) \div 14.7)$$

$$CID \times RPM \div 1728 \div 2 \times 0.85 \times (\% \text{ available pressure increase}) = \text{CFM}$$



Example:

817 CID, 4-cycle turbocharged engine with boost pressure of 6 psi and a maximum rpm of 2,000:

$$817 \times 2000 \div 1728 \div 2 \times 0.85 \times (1 + (6 \div 14.7)) = 817 \times 2000 \div 1728 \div 2 \times 0.85 \times 1.41 = 567 \text{ CFM}$$

Fuel Type and Regulator

It is imperative that the fuel type and regulator be matched. Some regulators are designed for both liquid and vapor while others are designed only for vapor. Those regulators designed for both liquid and vapor can accommodate both types of fuels, however, there is a decrease in performance (maximum rated horsepower) when only vapor is used. **NEVER USE LIQUID FUEL IN A REGULATOR DESIGNED FOR VAPOR ONLY.**

Diaphragm Material

Three diaphragm materials are commonly used, depending on the application:

BLACK: Hydrin diaphragm material is the standard material and is well suited for the most common applications.

YELLOW: Silicone diaphragm material is the optional upgrade material that provides excellent flexibility in cold weather climates and is more resistant to chemical contamination.

BLUE: Fluorosilicone diaphragm material provides excellent high and low temperature durability with increased chemical resistance. This material is recommended for turbo applications

UL Certifications

If a part is noted in the catalog as “UL listed,” its UL file may also be listed on UL’s Online Certifications directory:

[UL Product iQ Directory Link](#)

Other Certifications

Most applicable UL listings and certifications are noted under component specifications, however, many IMPCO components have been certified to meet additional standards such as ULC, ISO, ECE and others from countries and organizations around the globe. Please contact your IMPCO sales representative for all current component certifications.

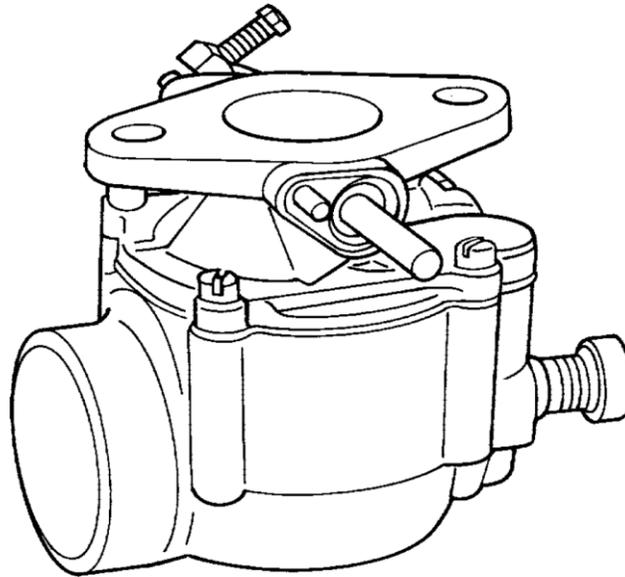
General Motors Parts

Parts supplied by General Motors (as noted throughout the catalog as “GM” and supplied through the GM parts distribution network) are no longer available through IMPCO and must be ordered directly through GM or a distributor of GM parts. GM parts listed in this catalog are for reference only and are not available through IMPCO

Carburetors & Mixers

Model CA55.....	16
Model CA55-250L.....	20
Model CA55-500L.....	23
Model CA55-750L.....	27
CA55 Mixers & Carburetors.....	31
Model 60.....	32
Model CA100.....	35
Model CA110.....	41
Model CA125.....	45
Model CA125M-10.....	50
Model 200.....	54
Model 200D.....	59
Model 200T.....	63
Model 210.....	67
Model 225.....	71
Model 300A.....	77
Model 400VF.....	82
Model 425.....	87
Model 600.....	93
Model 600D.....	97
Model 600 Varifuel.....	102
Model 600D Varifuel.....	107

Model CA55



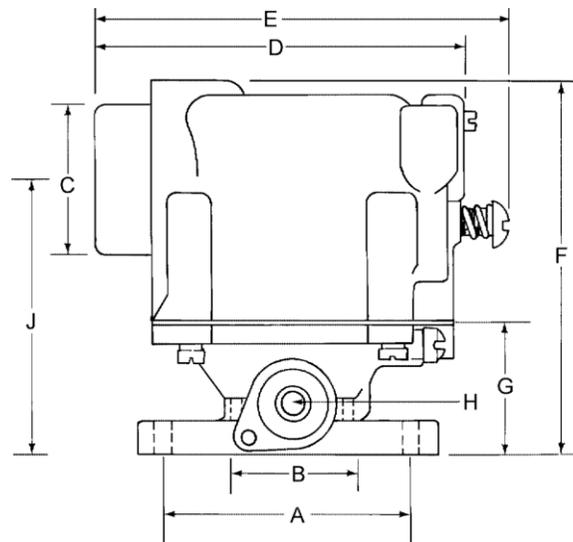
DESCRIPTION

IMPCO's CA55 model carburetors are offered in four design variations, providing proven, effective solutions for optimum metering and delivery of either LPG vapor or Natural Gas. The standard model can be mounted in either an updraft, downdraft, or side draft orientation, supplying either LPG or Natural Gas to engines up to 73 hp (54.0 kW), with a flow rate of 118 CFM (55.7 L/s). Various SAE flanges and air horn sizes are available.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Any
Diaphragm Material	N/A
HP/kW Rating	Up to 73 hp (54.0 kW) @ 118 CFM (55.7 L/s) and 2.0" Hg manifold depression

DIMENSIONS



Carburetor	Mixer	Throttle Body	SAE Flange	NPT Fuel Inlet	Center to	Bore	Air Horn	Overall	Max Width	Overall	Throttle	Throttle	Flange to
					Center Bolt Spacing	(mm)	Diameter	Width	Incl. Idle Screw	Height	Body Height	Shaft Dia.	Ctr. Of Air Horn
CA55-4	CA55M-2	AT2-25	3/4"	3/8"	57.2mm (2.250")	27.0mm (1.188")	41.3 mm (1.875")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-6	CA55M-4	AT2-26	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	47.6 mm (1.875")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-8	CA55M-5	AT2-27	1 1/4"	3/8"	68.3 mm (2.688")	30.2 mm (1.188")	52.4 mm (2.063")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-017	CA55M-5	BT2-27-322	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	52.4 mm (2.063")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-20	CA55M-2	AT2-26	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	41.3 mm (1.625")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-20-2	CA55M-2-2	AT2-26	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	41.3 mm (1.625")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-40	CA55M-5	AT2-26	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	52.4 mm (2.063")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-64	CA55M-2	BT2-26-8	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	41.3 mm (1.625")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-66	CA55M-2	BT2-26-8	1"	3/8"	60.3 mm (2.375")	30.2 mm (1.188")	41.3 mm (1.625")	96.9 mm (3.813")	122 mm (4.813")	95.3 mm (3.750")	33.4 mm (1.313")	6.4 mm (.250")	71.5 mm (2.813")
CA55-171	NSS	BT2-71-2	3/4"	3/8"	76.0 mm (2.992")	32.5 mm (1.28")	52.1 mm (1.97")	142.5 mm (5.6")	142.5 mm (5.6")	133 mm (5.27")	33.4 mm (1.313")	6.4 mm (.250")	

ASSEMBLIES & ACCESSORIES

MIXER ASSEMBLIES

P/N	BODY ASS'Y	AIR/GAS VALVE	AIR HORN DIA.	OVERALL WIDTH	OVERALL HEIGHT
CA55M-1	NSS	AV1-14925	38.1mm (1.500")	81.0mm (3.188")	61.9mm (2.438")
CA55M-2	NSS	AV1-14925	41.3mm (1.625")	81.0mm (3.188")	61.9mm (2.438")
CA55M-4	NSS	AV1-14925	47.6mm (1.875")	81.0mm (3.188")	61.9mm (2.438")
CA55M-5	NSS	AV1-14925	52.4mm (2.063")	81.0mm (3.188")	61.9mm (2.438")

TAMPER RESISTANT MIXER ASSEMBLIES

P/N	BODY ASS'Y	AIR/GAS VALVE	AIR HORN DIA.	OVERALL WIDTH
CT55M-5-1	AB1-35-4	AV1-14925 (std.) AV1-14925-3 (rich)		
CT55M-5-3	AB1-35-4	AV1-14925 (std.) AV1-14925-3 (rich)		

THROTTLE BODIES

P/N	DESCRIPTION
AT2-26	1" SAE flange, 6.4 (0.25") shaft dia.
AT2-26-2	1" SAE flange, 6.4 (0.25") shaft dia., w/ vacuum advance
AT2-27	1-1/4" SAE flange, 6.4 (0.25") shaft dia.
AT2-27-2	1-1/4" SAE flange, 6.4 (0.25") shaft dia., w/ vacuum advance
AT2-44	Metric, 53.0 mm (2.087"), 27.0 mm (1.063") bore, offset

EXPANSION PLUGS

P/N	DESCRIPTION
P3-17956-3	Expansion Plug

REPAIR KIT

P/N	DESCRIPTION
RK-CA55	Repair Kit, Mdl CA55
RK-CA55-2	Repair Kit, CA55 Carb Lean

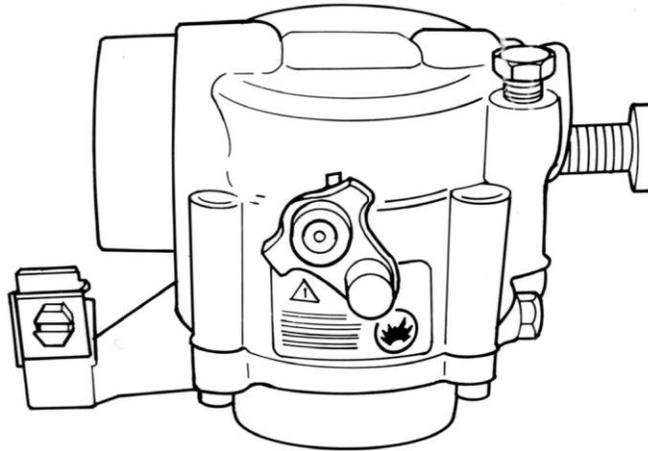
BRACKET (OPTIONAL)

P/N	DESCRIPTION
AB4-23	Bracket Assy, Bodwn Wire: B4-23, C2-1, S1-8

LEVERS

P/N	DESCRIPTION
AL1-7-1	Assembly, 44.4 mm (1.75") long (standard)
AL1-7-2	Assembly, with 6.4 mm (.25") ball stud, 44.4 mm (1.750") long
AL1-7-3	Assembly, 33.4 mm (1.313") long
AL1-7-4	Assembly, w/ swivel, 44.4 mm (1.75") long
AL1-7-5	Assembly, w/ Wisconsin swivel, 6.4 mm (0.25") mounting
AL1-8-1	Stop assembly, 6.4 mm (0.25") mounting I.D., 19.1 mm (.75") wide (standard)
AL1-25-1	Assembly, spring loaded, floating, 6.4 mm (0.25") mounting I.D., 34.9 mm (1.375") long
AL1-26-1	Assembly, floating, 6.4 mm (.25") mounting I.D., 54.0 mm (2.125") long
AL1-31	Assembly, shaft clamp, 6.4 mm (.250") mounting I.D., 49.2 mm (1.938") long

Model CA55-250L



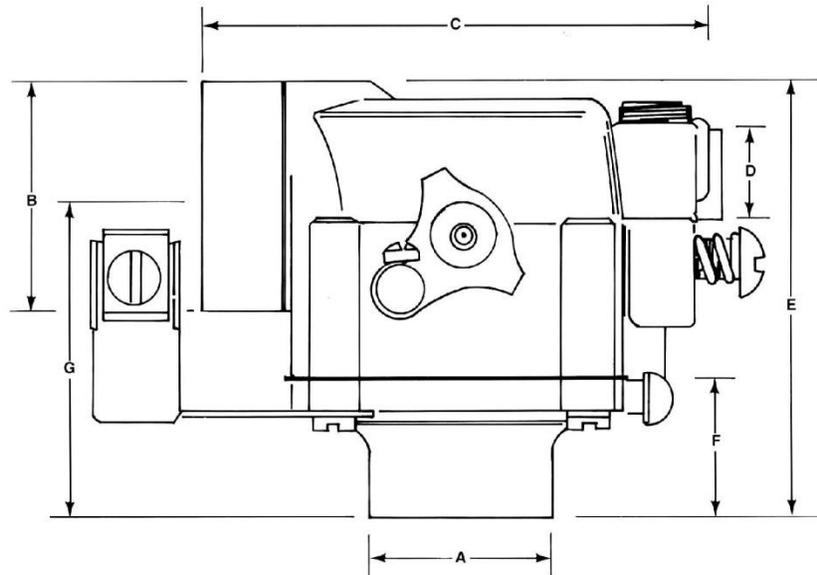
DESCRIPTION

Engineered for bi-fuel applications, this model features a movable air-valve assembly, thus providing additional airflow requirements of LPG Vapor or Natural Gas in gasoline bi-fuel applications. It is designed for use on engines up to 73 hp (54.0 kW), with a flow rate of 118 CFM (55.7 L/s).

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas, Bi-Fueled with Gasoline
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Any
Diaphragm Material	N/A
HP/kW Rating	Up to 73 hp (54.0 kW) @ 118 CFM (55.7 L/s) and 2.0" Hg manifold depression

DIMENSIONS



A	B	C	D	E	F	G
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STD. CARB.	HOSE ADAPTER	HOSE		OVERALL WIDTH	MAX WIDTH		OVERALL HEIGHT	HOSE ADAPTER HEIGHT	FLANGE TO AIR HORN FLANGE
		ADAPTER DIA.	AIR HORN DIA.		INCL. IDLE SCREW	NPT FUEL INLET			
CA55-256L	A3-83	47.6 mm (1.875")	47.6 mm (1.875")	96.9 mm (3.813")	127 mm (5.000")	3/8"	88.9 mm (3.500")	25.4 mm (1.000")	63.5 mm (2.500")
CA55-258 (no lifter)	A3-84	52.4 mm (2.063")	52.4 mm (2.063")	96.9 mm (3.813")	127 mm (5.000")	3/8"	88.9 mm (3.500")	25.4 mm (1.000")	63.5 mm (2.500")
CA55-258L	A3-84	52.4 mm (2.063")	52.4 mm (2.063")	96.9 mm (3.813")	127 mm (5.000")	3/8"	88.9 mm (3.500")	25.4 mm (1.000")	63.5 mm (2.500")

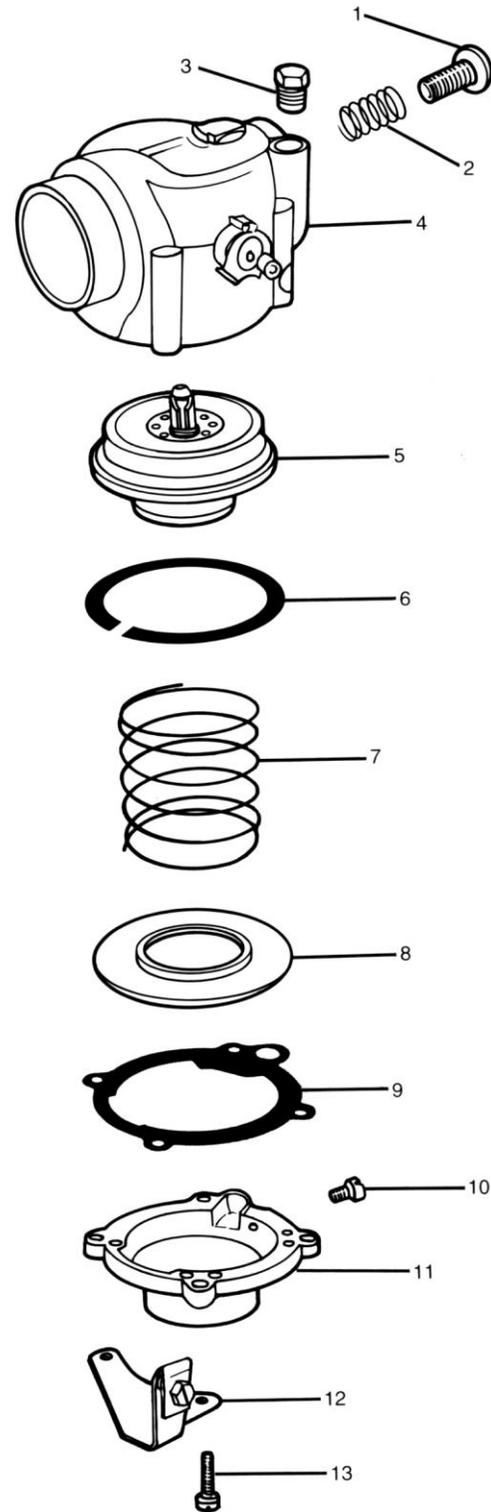
COMPONENTS

ITEM	P/N	PART DESCRIPTION
1	S1-74	Screw, idle
2	S2-88	Spring, idle screw
3	NSS	Plug, 1/8NPT
4	NSS	Body Assy
5	AV1-14925*	Air valve Assay (std.)
6	NSS*	Ring, Air Valve Sealing
7	NSS	Spring, air valve
7	NSS	Spring, Air Valve (Europe)
8	NSS*	Plate Assay
9	G1-92*	Gasket, throttle body to mixer
10	S1-69	Screw, 114-28x5/16(2)
	NSS	Adapter hose mount, 38.1 mm (1.500)
	NSS	Adapter hose mount, 41.3 mm (1.625)
11	A3-83	Adapter hose mount, 47.6 mm (1.875)
	A3-84	Adapter hose mount, 52.4 mm (2.063)
	NSS	Adapter hose mount, 58.8mm (2.313)
12	AB4-13	Bracket Assembly, Boden wire
13	S1-3*	Screw, 10-24x5/8" SEMS(4)

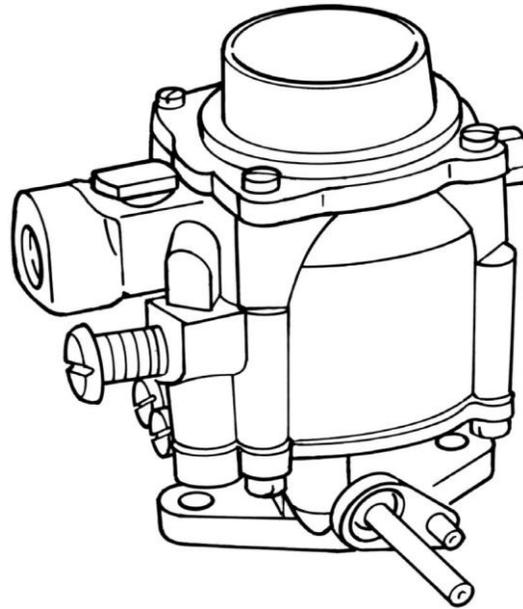
*Included in repair kit

REPAIR KIT

P/N	DESCRIPTION
RK-CA55	Repair Kit, Model CA55
RK-CA55-2	Repair Kit, CA55 Carb Lean



Model CA55-500L

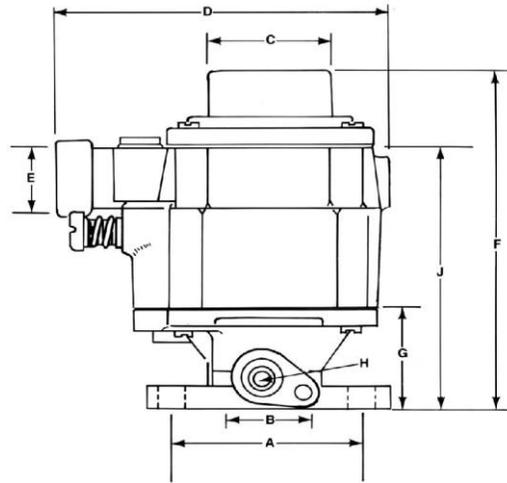


DESCRIPTION

This Model CA55 is for use with either LPG Vapor or Natural Gas on engines up to 75 hp (55.9 kW) with a flow rate of 118 CFM (59.0 L/s). This flow-through design may be mounted in either a downdraft, updraft, or side draft configuration. Various air horns and flange sizes are available.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Any
Diaphragm Material	N/A
HP/kW Rating	Up to 75 hp (55.9 kW) @ 118 CFM (55.7 L/s) and 2.0" Hg manifold depression

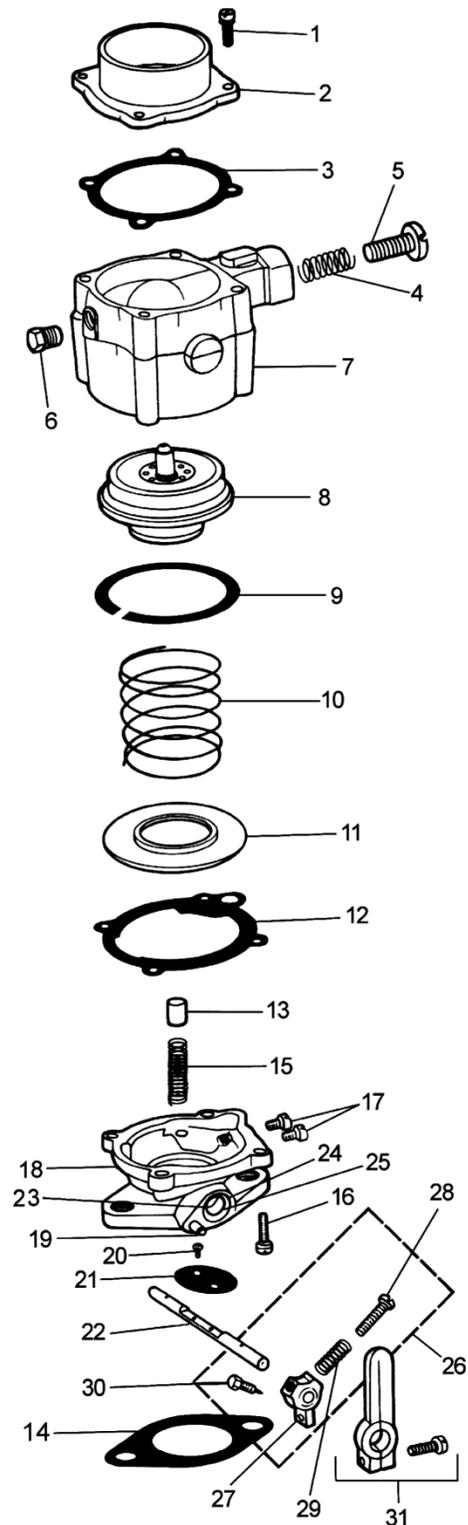
DIMENSIONS


Standard Carb	Mixer	Throttle Body	SAE Flange	Air Horn Adapt.	Ctr. To Ctr. Bolt Spacing	Air Horn Bore	Air Horn Dia.	Overall Width	NPT Fuel Inlet	Overall Height	Throttle Body Height	Throttle Shaft Dia.	Flange to Top of Mixer
					A	B	C	D	E	F	G	H	J
CA55-271	Replacement carburetor for Toyota 4Y engine												
CA55-503	CA55M-500	BT2-27-173	1-1/4"	A2-66	68.3 mm (2.375")	30.2 mm (1.188")	57.2 mm (1.875")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-508	CA55M-500	AT2-27	1-1/4"	A2-39	68.3 mm (2.688")	30.2 mm (1.188")	52.4 mm (2.063")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-510	CA55M-500	AT2-27	1-1/4"	A2-41	68.3 mm (2.688")	30.2 mm (1.188")	74.6 mm (2.938")	104.8 mm (4.125")	3/8"	117.5 mm (4.625")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-524	CA55M-500	BT2-26-6L	1"	A2-35	60.3 mm (2.375")	30.2 mm (1.188")	54.0 mm (2.125")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-542	CA55M-500	BT2-26-4	1"	A2-35	60.3 mm (2.375")	30.2 mm (1.188")	54.0 mm (2.125")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-553	CA55M-500	BT2-26-7	1"	A2-65	60.3 mm (2.375")	30.2 mm (1.188")	49.2 mm (1.938")	104.8 mm (4.125")	3/8"	128.6 mm (5.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-553-2	CA55M-500	BT2-26-7	1"	A2-65	60.3 mm (2.375")	30.2 mm (1.188")	49.2 mm (1.938")	104.8 mm (4.125")	3/8"	128.6 mm (5.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-576	CA55M-500	BT2-44-1		A2-59	53.0 mm (2.087")	27.0 mm (1.063")	43.0 mm (1.693")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-577	CA55M-500	BT2-44-2		A2-59	53.0 mm (2.087")	27.0 mm (1.063")	43.0 mm (1.693")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-577-2	CA55M-500	BT2-44-2		A2-59	53.0 mm (2.087")	27.0 mm (1.063")	43.0 mm (1.693")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-577-3	CA55M-500	BT2-44-2			53.0 mm (2.087")	27.0 mm (1.063")	43.0 mm (1.693")	104.8 mm (4.125")	3/8"	112.7 mm (4.438")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-596	CA55M-500	BT2-27-027	1-1/4"	A2-61	68.3 mm (2.688")	30.2 mm (1.188")	63.5 mm (2.500")	104.8 mm (4.125")	3/8"	103.2 mm (4.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-596-2	CA55M-500	BT2-27-027	1-1/4"	A2-61-2	68.3 mm (2.688")	30.2 mm (1.188")	63.5 mm (2.500")	104.8 mm (4.125")	3/8"	103.2 mm (4.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-598-2	CA55M-500	AT2-27-2	1-1/4"	A2-61-2	68.3 mm (2.688")	30.2 mm (1.188")	63.5 mm (2.500")	104.8 mm (4.125")	3/8"	103.2 mm (4.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-599-2	CA55M-500	BT2-27-6	1-1/4"	A2-61-2	68.3 mm (2.688")	30.2 mm (1.188")	63.5 mm (2.500")	104.8 mm (4.125")	3/8"	103.2 mm (4.063")	33.4 mm (1.313")	6.4 mm (.250")	87.3 mm (3.438")
CA55-756M	AB1-38	Mixer Only	N/A	A3-84	N/A	N/A	52.4 mm (2.116")		3/8"			N/A	

COMPONENTS

Item	Part	Description
1	S1-3	Screw, 10-24 x 5/8" SEMS (4)
2	See Table	Air Horn Adapter, Ref. to table in Acces.
3	G1-101	Gasket, air horn
4	S2-88	Spring, Idle Screw
5	S1-74	Screw, idle
6	NSS	Plug, 1/8" pipe
7	NSS	Body Assy
8	AV1 -14925*	Air Valve Assy (std.)
9	NSS*	Ring, Air Valve Sealing
10	NSS	Spring, Air Valve
11	NSS*	Plate Assy
12	G1-92*	Gasket, Throttle Body to Mixer
13	P4-1	Piston, Idle Cutoff
14	NSS	Gasket, 1/2" SAE Flange
	G1-16	Gasket, 3/4" SAE Flange
	G1-17	Gasket, 1" SAE Flange
	G1-18	Gasket, 1-1/4" SAE Flange
15	NSS	Spring, Idle Cutoff
16	S1-3*	Screw, 10-24 x 5/8" SEMS (4)
17	S1-69	Screw, 1/4-28 x 5/16" (2)
18	NSS	Throat, 1/2" SAE flange
19	NSS	Pin, Throttle Stop
20	S1-22	Screw, 6-32 x 1/4" SEMS (2)
21	NSS	Butterfly, 19.1 mm (.750")
	NSS	Butterfly, 25.4 mm (1.000")
22	S5-6	Throttle Shaft, 6.4 mm (.250") dia.
23	NSS	Bearing, Oilite, 6.4 mm (.250") ID. (2)
24	NSS	Seal, 6.4 mm (.250") shaft (2)
25	R1-9	Ring, Seal Retainer (2)
26	AL1-8-1	Throttle Stop Ass'y., 6.4mm (.250") ID.
27	NSS	Throttle Stop Lever
28	S1-21	Stop Screw, 10-32 x 3/4"
29	S2-15	Spring, Idle Stop Screw
30	S1-18	Screw Pin, Throttle Stop
31	AL1-7-1	Throttle Lever w/Screw

*Included in repair kit



ASSEMBLIES & ACCESSORIES

MIXER ASSEMBLIES

MIXER	BODY ASSY	AIR/GAS VALVE	OVERALL WIDTH	OVERALL HEIGHT
CA55M-500	NSS	AV1-14925	104.8MM (4.125")	57.2MM (2.250")
CA55M-500-2	NSS	AV1-14926	104.8MM (4.125")	57.2MM (2.250")
CA55M-500-4	NSS	AV1-14925	104.8MM (4.125")	57.2MM (2.250")
CA55M-500-9	NSS	AV1-14925	104.8MM (4.125")	57.2MM (2.250")
CA55M-500	NSS	AV1-14925	104.8MM (4.125")	57.2MM (2.250")

THROTTLE BODIES

PART #	DESCRIPTION
AT2-25	3/4" SAE Flange 6.4mm (.250") shaft dia.
AT2-25-2	3/4" SAE Flange 6.4mm (.250") shaft dia. w/vacuum
AT2-26	1" SAE Flange 6.4mm (.250") shaft dia.
AT2-26-2	1" SAE Flange 6.4mm (.250") shaft dia. w/vacuum
AT2-27	1 1/4" SAE Flange 6.4mm (.250") shaft dia.
AT2-27-2	1 1/4" SAE Flange 6.4mm (.250") shaft dia. w/vacuum
AT2-27-4	1 1/4" SAE Flange 6.4mm (.250") shaft dia. w/AL1-7-3 &
AT2-44-577	Metric, 53.0mm (2.087") 1-1/16" bore, offset (modified)

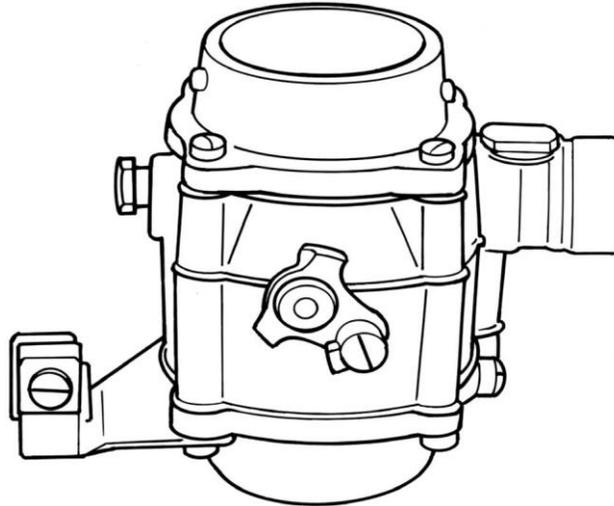
AIR HORN ADAPTERS

PART #	DESCRIPTION
A2-36	1.500" (38.1mm) dia.
A2-37	1 5/8" (41.3mm) dia.
A2-38	1 7/8" (47.6mm) dia.
A2-39	2 1/16" (52.4mm) dia.
A2-41	2.312" (58.8mm) dia.
A2-44	AF1-5 Air Cleaner to CA55-500 Series Adapter
A2-59	Adapter, Air Cleaner 1.69" OD
A2-61-2	Air Horn Adapt., tapped 8 mm
A2-65	Air Horn, Toyot 4Y CA55

LEVERS (See Lever Section for Other Lever Options)

PART #	DESCRIPTION
AL1-25-1	Assembly, Spring Loaded, Floating 6.4mm (.250")
AL1-26-1	Assembly, Floating, 6.4mm (.250") mounting ID, 54.0mm
AL1-31	Assembly, Shaft Clamp, 6.4mm (.250") mounting ID,

Model CA55-750L



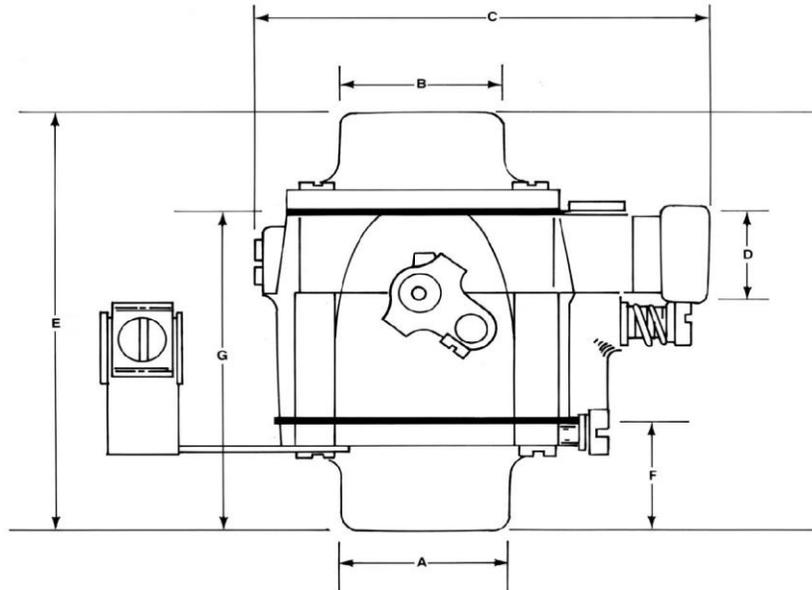
DESCRIPTION

The Model CA55-750L is a 118 CFM (59.0 L/s) bi-fuel mixer, suitable for engines up to 73 hp (54.0 kW). The moveable air/valve assembly optimizes airflow for LPG Vapor or Natural Gas in gasoline bi-fuel applications. The flow-through design allows mounting in the inlet air stream. Various Air Horn sizes are available to suit individual applications.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas, Bi-Fueled with Gasoline
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Any
Diaphragm Material	N/A
HP/kW Rating	Up to 75 hp (55.9 kW) @ 118 CFM (55.7 L/s) and 2.0" Hg manifold depression

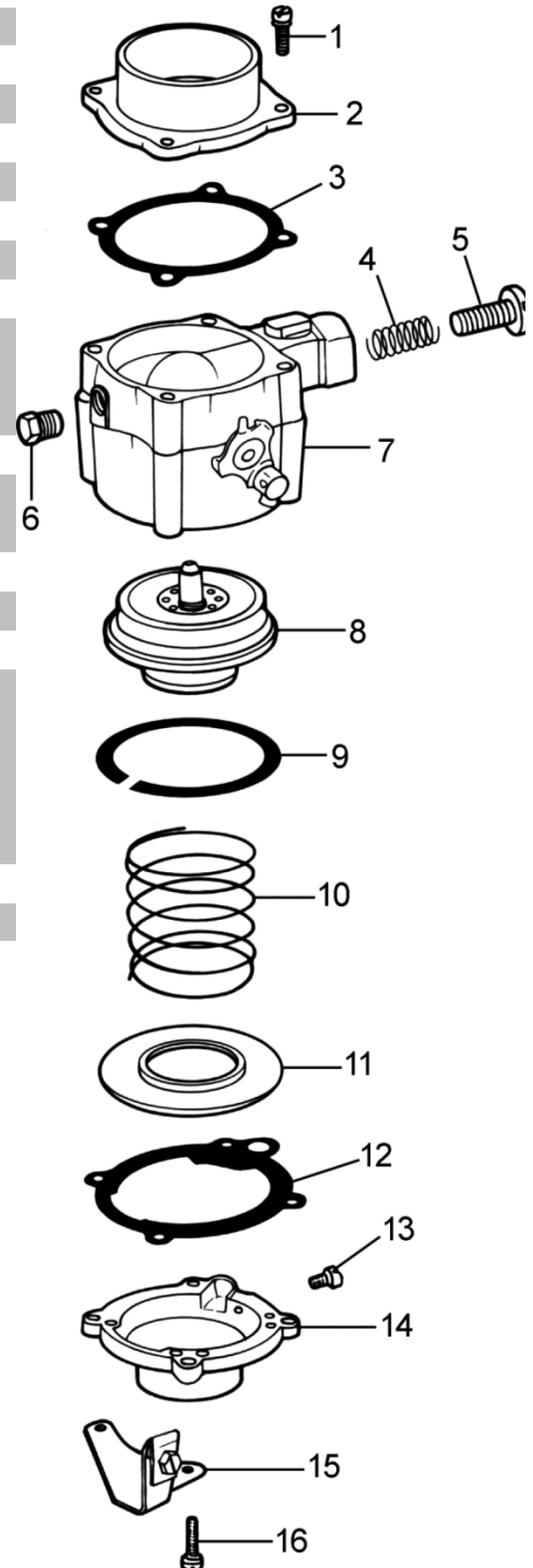
DIMENSIONS



				A	B	C	D	E	F	G
				HOSE ADAPTER DIA.	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT FUEL INLET	OVERALL HEIGHT	HOSE ADAPTER HEIGHT	FLANGE TO AIR HORN FLANGE
STD. CARB	MIXER	HOSE ADAPTER	MIXER AIR HORN	47.6 mm (1.875")	47.6 mm (1.875")	104.8 mm (4.125")	3/8"	104.8 mm (4.125")	25.4 mm (1.000")	79.4 mm (3.125")
CA55-754L	CA55M-750L	A3-83	A2-38	52.4 mm (2.063")	52.4 mm (2.063")	104.8 mm (4.125")	3/8"	104.8 mm (4.125")	25.4 mm (1.000")	79.4 mm (3.125")
CA55-756L	CA55M-750L	A3-84	NSS	58.8 mm (2.313")	58.8 mm (2.313")	104.8 mm (4.125")	3/8"	104.8 mm (4.125")	25.4 mm (1.000")	79.4 mm (3.125")
CA55-758L	CA55M-750L	NSS	A2-41							

COMPONENTS

ITEM	PART	DESCRIPTION
1	S1-3	Screw, 10-24 x 5/8" SEMS (4)
2	See Table	Air horn adapter (refer to table for proper size)
3	G1-101	Gasket air horn
4	S2-88	Spring, idle screw
5	S1-74	Screw, idle
6	NSS	Plug, 1/8"NPT
7	NSS	Body ass'y, complete w/lifter
	AV1-14925*	AI valve ass'y
8	NSS	Air valve ass'y (lean)
	NSS	Air valve ass'y (Europe)
9	NSS*	Ring, air valve sealing
	NSS	Spring, air valve
10	NSS	Spring, air valve (Europe)
11	NSS*	Plate ass'y
12	G1-92*	Gasket throttle body to mixer
13	S1-69	Screw, 1/4-28 x 5/16" (2)
	NSS	Adapter, hose mounting, 38.1mm (1.500")
	NSS	Adapter, hose mounting, 41.3mm (1.625")
14	A3-83	Adapter, hose mounting, 47.6mm(1.875")
	A3-84	Adapter, hose mounting, 52.4mm (2.063")
	NSS	Adapter, hose mounting, 58.8mm (2.313")
15	AB4-13	Bracket ass'y, Boden wire
16	S1-3 *	Screw, 10-24 x 5/8" SEMS (4)



*Included in Repair Kit

ASSEMBLIES & ACCESSORIES

MIXER ASSEMBLIES

Standard Mixer	Body Assy	Air/Gas Valve	Overall Width	NPT Fuel Inlet	Overall Height
CA55M-750L	NSS	AV1-14925	104.8 mm (4.125")	3/8"	57.2mm (2.250")

AIR HORN ADAPTERS

PART#	DESCRIPTION
A2-36	38.11mm (1.500") dia.
A2-37	41.3mm (1.625") dia.
A2-38	47.6mm (1.875") dia.
A2-39	52.4mm (2.063") dia.
A2-41	58.8mm (2.313") dia.
A2-44	AF1-5 air cleaner to CA55-500 Series adapter

AIR CLEANERS (OPTIONAL)

PART#	DESCRIPTION
AF1-5	Assy 4.25 m3/min (150 cfm), 171.5 mm (6.750") O.D. 60.3 mm (2.375") high

REPAIR KIT

P/N	DESCRIPTION
RK-CA55	Repair Kit, Mdl CA55
RK-CA55-2	Repair Kit, CA55 Carb Lean



CA55 Mixers & Carburetors

CA55 SERIES 90° AIR HORN CARBURETORS

PART#	DESCRIPTION
CA55-20	Carb, 1" SAE flange 1-5/8" Air Horn
CA55-20-2	Carb, 1" SAE flange 1-5/8" Air Horn, lean air gas valve ass'y.
CA55-258	Carb, 2-1/16" hose, 2-1/16" Air Horn w/o lifter
CA55-258L	Carb, 2-1/16" Air Horn, 2-1/16" hose, dual fuel, w/ lifter
CA55-271	Carburetor
CA55-4	Carb, 3/4" SAE flange, 1-5/8" Air Horn
CA55-40	Carb, 1" SAE flange, 2-1/16" Air Horn
CA55-6	Carb, 1" SAE flange, 1-7/8" Air Horn
CA55-64	Carb, 1" SAE flange, 1-5/8" Air Horn, w/ 1/4" hole in lever at 1"R, 4" shaft
CA55-66	Carb, 1" SAE flange, 1-5/8" Air Horn, w/ 1/4" hole in lever at 1"R, 4" shaft
CA55-8	Carb, 1-1/4" SAE flange, 2-1/16" Air Horn

CA55 SERIES 90° AIR HORN MIXERS

PART#	DESCRIPTION
CA55M-2	Mixer, 1-5/8" Air Horn HDTM
CA55M-3	Mixer, 1-3/4" Air Horn Black
CA55M-4	Mixer, 1-7/8" Air Horn HDTM
CA55M-5	Mixer Ass'y Model CA55M

REPAIR KIT

P/N	DESCRIPTION
RK-CA55	Repair Kit, Mdl CA55
RK-CA55-2	Repair Kit, CA55 Carb Lean

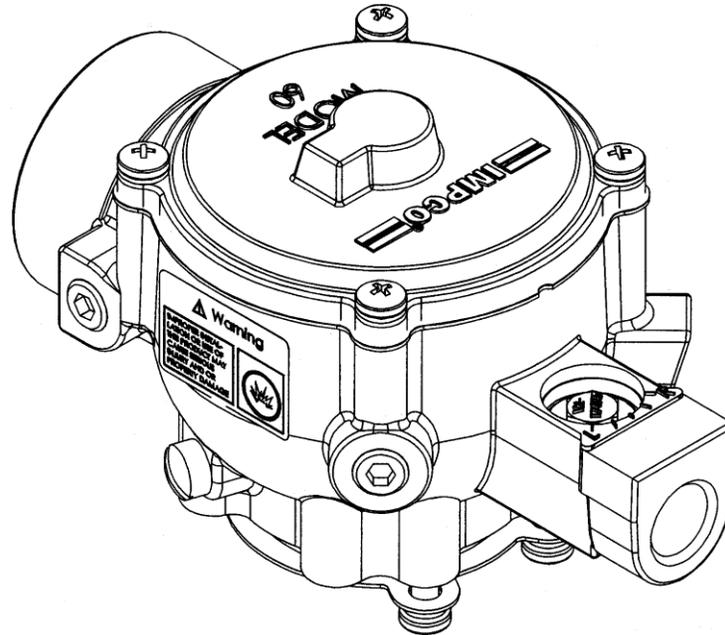
CA55 SERIES STRAIGHT DRAFT CARBURETORS

PART#	DESCRIPTION
CA55-503	Carb, 1-1/4" SAE flange, 2-1/4" Air Horn, with drilled shaft
CA55-508	Carb, 1-1/4" SAE 1-2/16 HDTM
CA55-510	Carb, 1-1/4" SAE flange, 2-5/16" Air Horn
CA55-524	Carb, 1" SAE flange, Toyota
CA55-542	Carb, 1" SAE flange, Toyota
CA55-553	Carb, 1" SAE flange, w/ A2-65 & A3-113
CA55-553-2	Carb, 1" SAE flange, w/ A2-65 & A3-113 adapters, lean flow, Toyota
CA55-576	Carb, Hyster special flange, 43 mm Air Horn, short lever w/ throttle return
CA55-577	Carb, 53 mm flange, 43 mm Air Horn, standard flow
CA55-577-2	Carb, 53 mm flange, 43 mm Air Horn, lean flow
CA55-577-3	Carb, 53 mm flange, 43 mm Air Horn, lean flow
CA55-596	Carb, 1-1/4" SAE flange, A2-61 Air Horn
CA55-596-2	Carb, 1-1/4" SAE flange, A2-61 Air Horn w/Tapped A/H 8 mm
CA55-598-2	Carb, W/A2-61-2 HTDM LPG
CA55-599-2	HTDM Carb, 1-1/4" SAE flange, 2-1/4" Air Horn, tapped 8 mm less levers
CA55-756L	Carb, 2-1/16" Air Horn, 2-1/16" hose, dual fuel,
CA55-758L	Mixer, 2-5/16" Air Horn, 2-5/16" hose, dual fuel, with lifter

CA55 SERIES STRAIGHT DRAFT MIXERS

PART#	DESCRIPTION
CA55M-500-2	Series 500, straight draft mixer with lean air/gas valve ass'y.
CA55M-500-4	Series 500, straight draft mixer with lean body, lean full range
CA55M-500-9	Series 500, straight draft mixer with lean body, WOT
CA55M-750L	Series 500, straight draft mixer assembly with lifter, dual fuel

Model 60



DESCRIPTION

The IMPCO Model 60 is an air-gas valve/diaphragm mixer designed to fit engines from 79 to 183 cubic inches (1.3 to 3.0 liters) in displacement and up to 95 CFM (44.8 L/s) airflow. It is a 90° air horn design available with a 2.06 inch (52.4mm) air horn and fits most current CA100 throttle bodies and adapters. It can also be used in-line, separate from the throttle body.

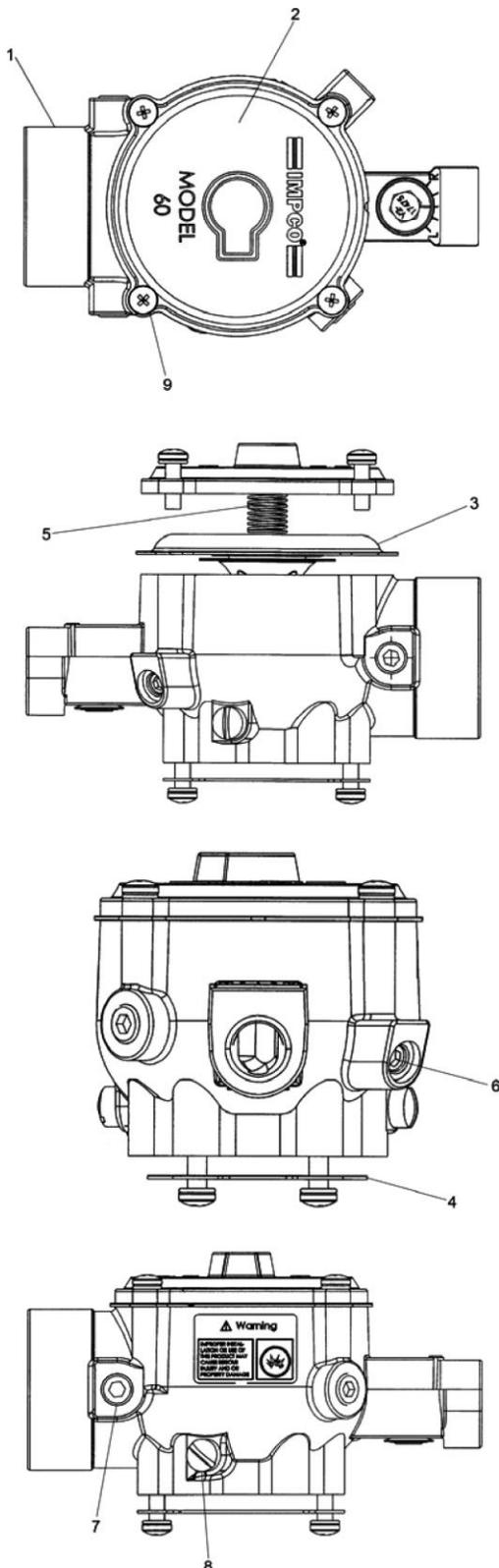
The mixer comes in two configurations: the CT version for open-loop engine applications without an electronic engine controller, and the FT version for use with the IMPCO Commander digital closed-loop fuel controller. Custom flow specifications for the mixer can be set and sealed at the factory.

Tamper resistant plugs are available for installation by your technicians after the IMPCO Model 60 mixer has been adjusted at your facility to fit your application.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas, Bi-Fueled with Gasoline
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Silicone
HP/kW Rating	Up to 73 hp (54.0 kW) @ 95 CFM (44.8 L/s) and 2.0" Hg manifold depression

DIMENSIONS & COMPONENTS

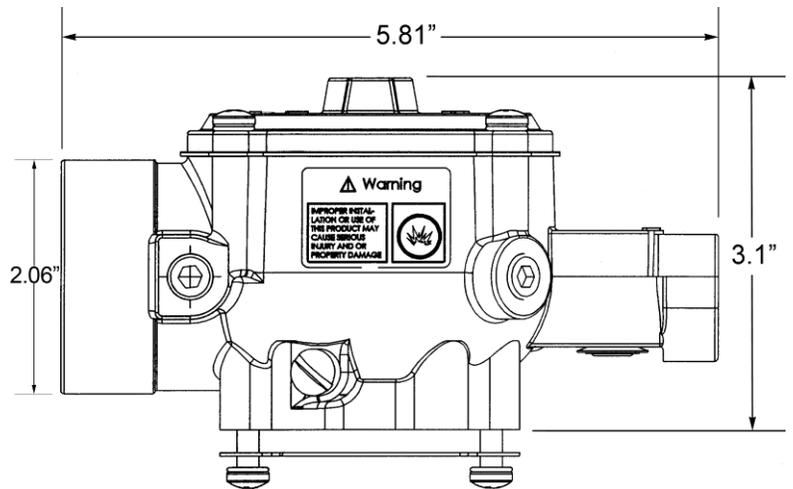


MODEL 60 MIXER PART NUMBERS

PART#	DESCRIPTION
FT60M-3	Feedback, 2.06" Air Horn
CT60M-3	Open-Loop, 2.06" Air Horn

ITEM #	PART #	DESCRIPTION
1	NSS	Body, 60 Series Mixer Assembly
2	NSS	Cover, 60 Series Mixer
3	AV1-25590	Air/Gas Valve Assembly
	AV1-30115	Air/Gas Valve Assembly
4	G1-11	Gasket, Throttle Body to Mixer
5	S2-35-1	Spring, Secondary (Blue Stripe)
6	NSS	Screw, M8 x 1.25 Idle Adjust
7	NSS	Plug, Set Screw
8	S1-69	Screw, 1/4"-28 x 5/16"
9	NSS	Screw, M5 x .8 x 16mm Long

DIMENSIONS



COMPONENTS

CARBURETOR

PART#	DESCRIPTION
CT60-30673	2.06" Air Horn w/BT2-23-30682 Throttle Body for Hyster 2.0L Upgrade Kit

THROTTLE BODIES

PART#	DESCRIPTION
AT2-1	3/4" SAE flange, 6.4mm (0.25) shaft dia.
AT2-2	1" SAE flange, 6.4mm (0.25) shaft dia.
AT2-2-5	1" SAE flange, 6.4mm (0.25") shaft dia., w/ vacuum advance
AT2-3	1-1/4" SAE flange, 8.0mm (0.31") dia.
AT2-3-8	1-1/4" SAE flange, 8.0mm (0.31") shaft dia. w/vacuum advance
AT2-4-1	1-1/2" SAE flange, 8.0mm (0.31") shaft dia
AT2-4-3	1-3/4" SAE flange, 8.0mm (0.31") shaft dia
AT2-4-6	1-3/4" ASE flange, 8.0mm (0.31") shaft dia., w/needle bearings
AT2-16-1	1-1/4" to 1-1/2" SAE flange, 8.0mm (0.31") shaft dia., no vacuum advance
AT2-16-4	1-1/4" to 1-1/2" flange, 8.0mm (0.31") shaft dia., w/needle bearings & vacuum port
AT2-23	1-1/4" SAE flange, 8.0mm (0.31") dia.
AT2-23-4	1-1/4" SAE flange, 8.0mm (0.31") shaft dia.

Note: The above throttle bodies are offset.

AIR/GAS VALVE ASSEMBLIES

PART#	DESCRIPTION
AV1-30115	Air/Gas Valve Assy, Silicone FT Series
AV1-25590	Air/Gas Valve Assy, Silicone CT Series

ADAPTERS

Part#	DESCRIPTION
AA3-29-1	Adapt. 100M to 2-1/16" hose
AA3-29-2	Adapt.100M to 2-1/16" hose, 12-24 Thrtl Bodies
AA3-32-1	Adapt.100M to IMPCO 2B throttle body
AA3-49	Adapt.100M to Datsun C5-P5 Nikki throttle body
AA3-50	Adapt.100M to Datsun C3-P3 throttle body
A3-67	Adapt.100M to Mitsubishi lift truck throttle body

GASKETS

Part#	DESCRIPTION
416	Gasket, Flange 1-1/4" SAE TB60

BEARINGS

Part#	DESCRIPTION
1-5022	Bearing, Throttle Shaft
1-5019	Bearing, Throttle Shaft 1/4"

RETURN SPRING ASSEMBLIES

Part#	DESCRIPTION
AS2-50-1	Throttle return, 6.4mm (0.25") shaft
AS2-50-2	Throttle return, 8.0mm (0.31") shaft

BRACKET ASSEMBLIES

Part#	DESCRIPTION
AB4-2	Bracket, Boden Wire
AB4-19	Bracket, AS2-50-2Throttle Return Spring

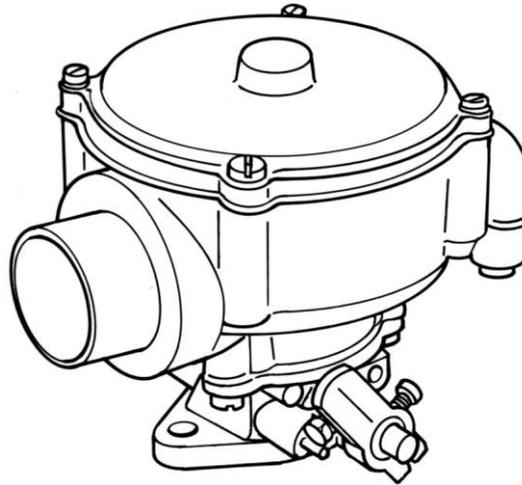
FUEL CONTROLLERS

Part#	DESCRIPTION
EK-CDP-1	Commander Kit

LEVERS

Part#	DESCRIPTION
AL1-7-1	Assy, 44.5mm (1.75") long (st. on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1)
AL1-7-2	Assy, w/ 6.4mm (0.25") ball stud, 44.5mm (1.75") long
AL1-7-3	Assy, 33.3mm (1.31") long (std on AT2-1, AT2-2, AT2-23)
AL1-7-4	Assy, w/swivel, 44.5mm (1.75") long
AL1-7-5	Assy, w/Wisconsin swivel, 6.4mm (0.25") mounting ID, 20.6mm (0.81") long
AL1-8-1	Stop assy, 6.4mm (0.25") mounting ID, 19.1mm (0.75") long (std. on AT2-1, AT2-2)
AL1-8-2	Stop assy, 8.0mm (0.31") mounting ID 19.1mm (0.75") long (std. on AT2-3, AT2-4-1, AT2-4-3, AT2-161, AT2-23).
AL1-25-1	Assy, spring loaded, flating, 6.4mm (0.25") mounting ID, 34.9mm (1.38" long w/ AC2-14-1)
AL1-25-2	Assy, spring loaded, flating, 6.4mm (0.31") mounting ID, 34.9mm (1.38" long w/ AC2-14-2)
AL1-26-1	Assy, flating 6.4mm (0.25") mounting ID, 54.0mm (2.13") long, w/AC2-11
AL1-26-2	Assy floating, w/swivel, 6.4mm (0.25") mounting ID 54.0mm (2.12") long, w/ AC2-11
AL1-27-1	Assy floating 8.0mm (0.31" mounting ID, 54.0mm (2.13") long w/AC2-12
AL1-31	Assy, shaft clamp, 6.4mm (0.25") mounting ID 49.2mm (1.94") long
AL1-33	Assy shaft clamp, 8.0mm (0.31") mounting ID 49.2mm (1.94") long
AL1-46	Assy steel shaft clamp, 8.0mm (0.31") mounting ID, 47.6mm (1.88") long

Model CA100



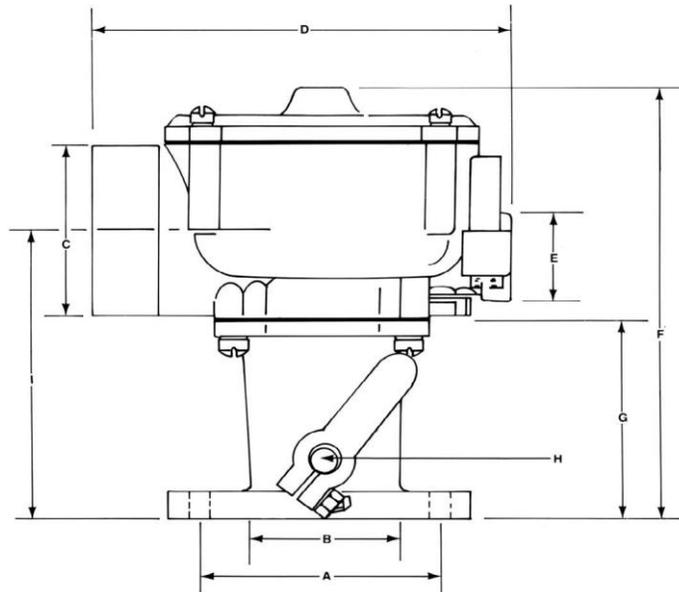
DESCRIPTION

The Model 100 is a single diaphragm air-gas valve carburetor/mixer. It offers a 90 degree air inlet to provide low overhead clearance, and is available with several Air Horn and throttle body options. This unit is available for LPG Vapor and Natural Gas applications with airflow requirements up to 197 CFM (93 L/s). The Model 100 is also available for feedback applications with the 'FB' designation.

The 100 mixer provides a convenient 1/8 NPT balance port and two separate air valve vacuum ports. Additional low speed, idle mixture control can be obtained to lean air/fuel mixtures through the use of optional shims.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	106 HP (79.0 kW) @ 170 CFM (80 L/s) and 1.5" Hg manifold depression
	123 HP (91.7 kW) @ 197 CFM (93 L/s) and 2.0" Hg manifold depression

DIMENSIONS


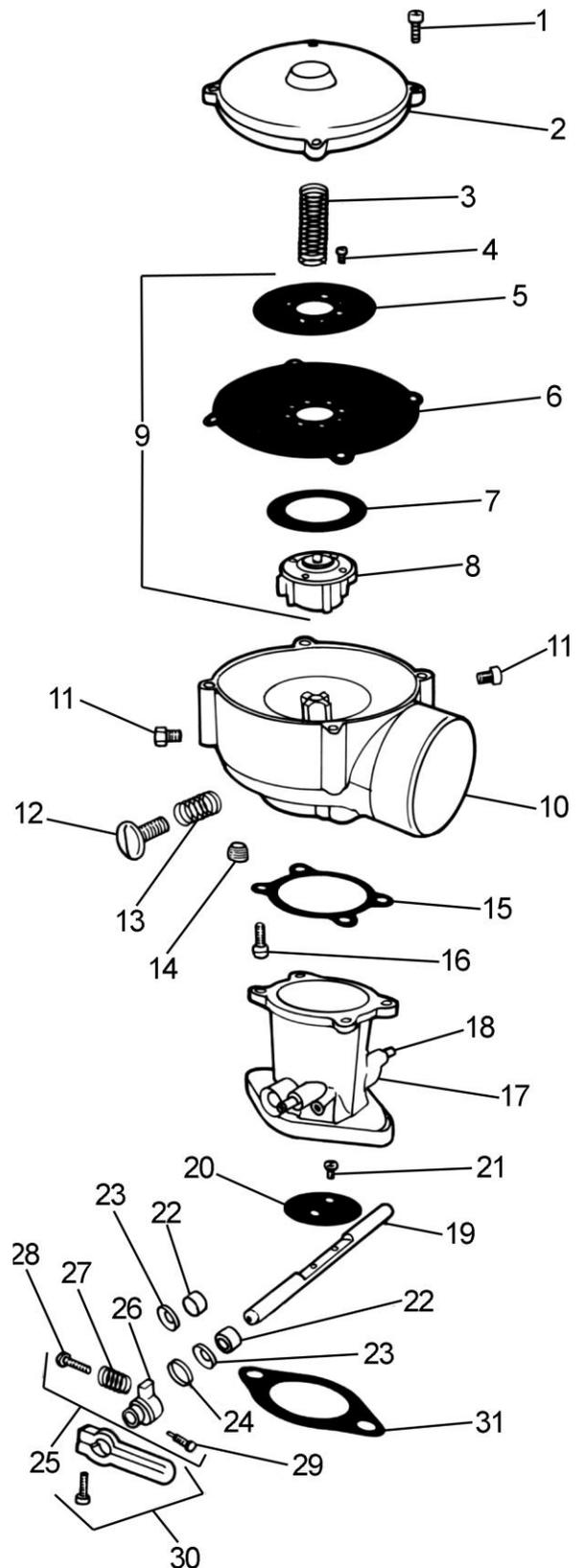
STD.CARB	MIXER	THROTTLE BODY	SAE FLANGE	MIXER								
				CTR. TO CTR. BOLT SPACING	BORE	AIR HORN DIA.	OVERALL WIDTH	NPT INLET	OVERALL HEIGHT	THROTTLE BODY HEIGHT	THROTTLE SHAFT DIA.	FLANGE TO CTR. OF AIR HORN
CA100-6	CA100M-2	AT2-2	1"	60.3mm (2.375")	30.2mm (1.188")	47.6mm (1.875")	133 mm (5.25")	1/2"	117mm (4.625")	34.9 mm (1.375")	6.4mm (0.250")	67.0mm (2.625")
CA100-8	CA100M-3	AT2-3	1-1/4"	68.3 mm (2.688")	36.5 mm (1.438")	52.4 mm (2.063")	133 mm (5.25")	1/2"	149 mm (5.875")	69.1 mm (2.719")	8.0 mm (0.313")	67.0 mm (2.625")
CA100-10	CA100M-4	AT2-3	1-1/4"	68.3 mm (2.688")	36.5 mm (1.438")	58.8 mm (2.313")	133 mm (5.25")	1/2"	150 mm (5.92")	69.1 mm (2.719")	8.0 mm (0.313")	99.6 mm (3.92")
CA100-12	CA100M-4	AT2-4-1	1-1/2"	74.6 mm (2.938")	42.9 mm (1.688")	58.8 mm (2.313")	131 mm (5.156")	1/2"	154 mm (6.063")	71.4 mm (2.813")	8.0 mm (0.313")	99.6 mm (3.92")
CA100-35	CA100M-4-2	AT2-4-1	1-1/2"	74.6 mm (2.938")	42.9 mm (1.688")	58.8 mm (2.313")	131 mm (5.156")	1/2"	150 mm (5.92")	69.1 mm (2.719")	8.0 mm (0.313")	99.6 mm (3.92")
CA100-46	CA100M-4	AT2-4-3	1-3/4"	84.1 mm (3.313")	42.9 mm (1.688")	58.8 mm (2.313")	133 mm (5.25")	1/2"	150 mm (5.92")	71.4 mm (2.813")	8.0 mm (0.313")	99.6 mm (3.92")
CA100-64	NSS	AT2-23	1-1/4"	68.3 mm (2.688")	36.5 mm (1.438")	52.4 mm (2.063")	131 mm (5.156")	1/2"	116 mm (4.58")	34.9 mm (1.375")	8.0 mm (0.313")	65.5mm (2.58")
CA100-64G	CA100M-3	N/A	-	80.1mm (3.155")	Custom	52.4 mm (2.063")	131 mm (5.156")	1/2"	111mm (4.37")	N/A	N/A	60.2mm (2.37")
CA100-66	CA100M-4	AT2-4-1	1-1/2"	74.6 mm (2.938")	42.9 mm (1.688")	58.8 mm (2.313")	131 mm (5.156")	1/2"	150 mm (5.92")	69.1 mm (2.719")	8.0 mm (0.313")	99.6 mm (3.92")

DIMENSIONS (CONTINUED)

				A	B	C	D	E	F	G	H	I
STD. CARB	MIXER	THROTTLE BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT INLET	OVERALL HEIGHT	THROTTLE BODY HEIGHT	THROTTLE SHAFT DIA.	FLANGE TO CTR. OF AIR HORN
CA100-108	NSS	AT2-23-6	1.25"	68.3mm (2.688")	36.5mm (1.438")	52.4 mm (2.063")	131mm (5.156")	1/2"	116.3 mm (4.58")	34.9mm (1.375")	8.0mm (0.313")	67.06mm (2.64")
CA100-110	CA100M-3	NSS	1"	60.3mm (2.375")	30.0mm (1.188")	52.4mm (2.063")	131mm (5.156")	1/2"	117mm (4.625")	36.5mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-112	CA100M-3	NSS	1.25"	68.3 mm (2.688")	37.6mm (1.438")	131 mm (5.156")	131mm (5.156")	1/2"	116.3mm (4.58")	34.9mm (1.375")	8.0mm (0.313")	65.53mm (2.58")
CA100-124-2	CA100M-4	BT2-2-3	1"	60.3mm (2.375")	30.0mm (1.188")	58.8mm (2.313")	131mm (5.156")	1/2"	117 mm (4.625")	36.5 mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-134	CA100M-3	NSS	1"	60.3mm (2.375")	30.0mm (1.188")	131mm (5.156")	131mm (5.156")	1/2"	117 mm (4.625")	36.5 mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-136	CA100M-3	BT2-23-10	1.25"	68.3mm (2.688")	36.5mm (1.438")	52.4mm (2.063")	131mm (5.156")	1/2"	116.3 mm (4.58")	34.9 mm (1.375")	8.0mm (0.313")	67.06mm (2.64")
CA100-138	CA100M-3	NSS	1"	60.3mm (2.375")	30.0mm (1.188")	30.0 mm (1.188")	131mm (5.156")	1/2"	117 mm (4.625")	36.5 mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-139	CA100M-3	NSS	1"	60.3mm (2.375")	30.0mm (1.188")	52.4mm (2.063")	131mm (5.156")	1/2"	117 mm (4.625")	36.5 mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-180	NSS	BT2-23-849	1.25"	68.3mm (2.688")	36.5mm (1.438")	52.4mm (2.063")	131mm (5.156")	1/2"	116.3mm (4.58")	36.5 mm (1.438")	6.4mm (0.250")	67.06mm (2.64")
CA100-245	NSS	NSS		71.6mm (2.82")	42.2mm (1.66")							
CA100-272	CA100M-3	AT2-23-6	1.25"	68.3 mm (2.688")	37.6mm (1.438")	52.4mm (2.063")	131mm (5.156")	1/2"	116.3mm (4.58")	34.9mm (1.375")	8.0mm (0.313")	65.53mm (2.58")
CA100-183	N/A	NSS		74.7mm (2.94")	31.0mm (1.22")	52.3mm (2.06")	100.3mm (3.95")	1/2"	134.6 mm (5.30")	41.1 mm (1.62")	8.0mm (0.313")	82.55mm (3.25")

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	S1-3	Screw, 10-24 x 5/8" SEMS (4)
2	C1-17	Cover
3	S2-85	Spring, air valve
4	S1-22	Screw, 5-32 X 1/4" SEMS (4)
5	P2-22	Plate, backup
6	D1-17	Diaphragm
	D1-17-2	Diaphragm, Silicone
7	R1-19	Ring, air valve
8	NSS	Air Valve
9	AV1-14	Air Gas Valve Assy, Complete
	AV1-14-2-962	Air Valve 30/35
10	NSS	Body, CA100M & 110M 2-5/6" AH
11	S1-69	Screw, 1/4-28 x 5/16" (2)
12	S1-74	Screw Idle
13	S2-88	Spring, Idle Screw
14	NSS	Plug, 1/8 NPT
15	G1-11	Gasket, Throttle Body to Mixer
16	S1-19	Screw, 12-24 x 5/8" SEMS (4)
17	NSS	Throttle Body
18	NSS	Pin, Throttle Stop (2)
19	S5-1	Throttle shaft, 6.4 mm (0.25") dia.
	NSS	Fly, 19.1mm (0.75")
20	NSS	Fly, 25.4mm (1.00")
	NSS	Fly, 31.8mm (1.25")
	NSS	Fly, 38.1mm (1.50")
21	NSS	Screw, 6-32 x 1/4" SEMS (2)
	NSS	Bearing Oilite, 6.4mm (0.25") I.D. (2)
22	NSS	Bearing Oilite, 8.0mm (0.31") I.D. (2)
	NSS	Bearing Needle, 8.0mm (0.31) I.D. Opt.
	NSS	Seal, 6.4mm (0.25") shaft (2)
23	NSS	Seal, 8.0 mm (0.31") shaft (2)
	S3-25	Seal, internal, 8.0 mm (0.31") I.D., Opt.
24	R1-9	Ring, Seal Retainer
25	AL1-8-1	Throttle Stop ass'y, 6.4 mm (0.25") I.D.
	AL1-8-2	Throttle Stop ass'y, 8.0 mm (0.31") I.D.
26	NSS	Throttle Stop Lever, 6.4mm (0.25") I.D.
27	S1-21	Stop screw, 10-32 x 3/4"
28	S2-15	Spring, Idle Stop Screw
29	S1-18	Pin, Screw, Throttle Stop
30	NSS	Throttle Lever, Short w/Screw
	NSS	Throttle Lever, Long w/Screw
	G1-16	Gasket, 19.1 mm (0.75") Flange
	G1-17	Gasket, 25.4 mm (1.00") Flange
	G1-18	Gasket, Flange 1-1/4" SAE
31	NSS	Gasket, 31.8 mm (1.25") Flange



ASSEMBLIES & ACCESSORIES

CA100 CARBURETORS

PART#	DESCRIPTION
CA100-10	Carb, 1-1/4" SAE flange, 2-5/16" Air Horn, lean flow
CA100-108	Carb, 1-1/4" SAE flange (short), 2-1/16" Air Horn, lean flow, low profile
CA100-110	Carb, 1" SAE flange, 2-1/16" Air Horn, drilled shaft, AL1-26-401
CA100-112	Carb, 1-1/4" SAE flange, 2-1/16" Air Horn, lean flow, short shaft
CA100-12	Carb, 1-1/2" SAE flange, 2-5/16" Air Horn
CA100-124-2	Carb. 1" x 2-1/16" Air Horn AT2-2
CA100-134	Carb, 1" SAE flange, 2-1/16" Air Horn, lean flow
CA100-136	Carb, 1-1/4" SAE flange, 2-1/16" Air Horn
CA100-138	Carb, 1" SAE flange, 1-1/16" Air Horn, Yale
CA100-139	Carb, 1" SAE flange, 2-1/16" Air Horn w/ bracket & swivel
CA100-180	Carb, 1-1/4" SAE flange, 2-1/16" Air Horn w/ L1-33, Clark
CA100-183	Carburetor Ass'y
CA100-194	Carb, AA3-67 adapter, 2-1/16" Air Horn, Clark
CA100-270	Carb Assy 1-1/4 X 2-1/16 Wis-Co
CA100-272	Carb, 1-1/4" SAE flange, 2-1/16" Air Horn, 100% flow, low Caterpillar
CA100-35	Carb, 1-1/2" SAE flange, 2-5/16" Air Horn, AL1-7-1 lever, silicone dia.
CA100-46	Carb, 1-3/4" SAE flange, 2-5/16" Air Horn
CA100-498	Carb. Ass'y NAACO (1389498)
CA100-6	Carb. 1" x 1 7/8"
CA100-64	Carb, 1-1/4" SAE flange (short), 2-1/16" Air Horn
CA100-64G	Carb, 2-1/6" Air Horn, 70/75 flow, no throttle ass'y.
CA100-66	Carb, 1-1/2" SAE flange, 2-5/16" Air Horn, 72/80 flow 1-1/4" SAE flange, 2-5/16" Air Horn, 72/80 flow, low profile
CA100-7108	Carburetor Ass'y (2817108)
CA100-8	1-1/4" SAE flange, 2-1/16" Air Horn
CA100-91A	Carburetor Ass'y

PART#	DESCRIPTION
AT2-2	1" SAE flange, 6.4mm (0.25") Shaft dia.
AT2-2-5	1" SAE flange, 6.4mm (0.25") Shaft dia. w/vacuum
AT2-2-6	Throttle Assy 1" Long Shaft
AT2-3	1-1/4" SAE flange, 8.0mm (0.31") dia.
AT2-3-8	1-1/4"SAE Flange, 8.0mm (0.31") dia. Shaft w/vacuum
AT2-4-1	1-1/2" SAE flange, 8.0mm (0.31") Shaft dia.
AT2-4-3	1-3/4" SAE flange, 8.0mm (0.31") Shaft dia.
AT2-16-1	1-1/4" to 1-1/2" SAE flange, 8.0mm (0.31") Shaft dia.,
AT2-16-2	1-1/4" to 1-1/4" SAE flange, 8.0mm w/S5
AT2-16-4	1-1/4" to 1-1/2" SAE flange, 8.0mm (0.31") Shaft dia. w/needle bearings
AT2-23	1-1/4" SAE flange, 8.0mm (0.31") Shaft dia.
AT2-23-4	1-1/4" SAE flange, 8.0mm (0.31") dia.
AT2-23-5	Throttle Body 1 - 1/4 w/S5-11
AT2-23-6	Throttle Body 1 - 1/4 w/T1-17
AT2-23-7	T/B w/T2-23 Tapped (LP Gas)

AIR GAS VALVES

PART#	DESCRIPTION
AV1-14	Standard, w/Hydrin Diaphragm, LPG
AV1-14-12	Air Valve Assy
AV1-14-2-838	Air Gas Valve, 30/35 Clark
AV1-14-3	Standard, w/Silicone Diaphragm, LPG
AV1-14-76-2	Air Valve With Silicone 61/68
AV1-14-9-2	Air Valve Ass'y, w/2 Check Valve
AV1-14-2	Lean, w/Hydrin Diaphragm, LPG
AV1-14-220-2	w/Silicone Diaphragm, LPG, for non-Feedback
AV1-1447-2	For standard feedback, w/ silicone diaphragm
AV1-25413	Valve Assembly, Gas Air
AV1-14-12-2	Air Valve Assy, Silicone
AV1-14-4	Lean, w/Silicone Diaphragm, LPG
CV1-14	Air Gas Valve Ass'y,
CV1-14-2	Special lean, w/ silicone diaphragm
EV1-14-2	w/ 42 valve & silicone diaphragm
EV1-14-9	Air Gas Valve V2 for CA100M-636

ASSEMBLIES & ACCESSORIES (CONTINUED)

CLAMP

PART #	DESCRIPTION
AC2-29	Clamp Ass'y, CA125-76

GOVERNOR

PART #	DESCRIPTION
AD1-85	Diaphragm Assy, Throttle Governor

RING SPACER SPACERS (OPTIONAL)

PART #	DESCRIPTION
R1-29	Ring, air valve spacer, AV1-14 (to lean idle mixtures)

THROTTLE SHAFTS

PART #	DESCRIPTION
S5-1	6.4mm (0.25") dia. 114mm (4.50") long (stud on AT2-1, AT2-2)
S5-2	8.0mm (0.31")dia. 127mm (5.00") long (std on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1, AT2-23)
S5-6	6.4mm (0.25") dia., 121mm (4.75") long
S5-7	8.0mm (0.31") dia., 133mm (5.25") long
S5-11	8.0mm (0.31") dia., 133mm (6.13") long

ADAPTERS

PART #	DESCRIPTION
AA3-29-1	100M to 2-1/16" hose
A3-29-2	100M to 2-1/16" hose, tapped 12-24
A3-31	100M to 2-1/4" hose
AA3-32-1	100M to IMPCO 2B throttle body
A3-31	100M to 2-1/4" hose
AA3-32-1	100M to IMPCO 2B throttle body
AA3-49	100M to Datsun C5-P5 Nikki throttle body
AA3-50	100M to Datsun C3-P3 throttle body
A3-94	Datsun 4-bolt to 1" SAE flange
AS3-10	Ass'y, 12.7 mm (0.50"), to turn Air Horn 90° A110-DP Model 110 Mixer (also repair kit)

LEVERS

PART #	DESCRIPTION
AL1-7-1	Ass'y 44.5mm (1.75") long (std. on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1)
AL1-7-2	Ass'y w/ 6.4mm (0.25") ball stud, 44.5mm (1.75") long
AL1-7-3	Ass'y, 33.3mm (1.31") long (std. on AT2-1, AT-2, AT2-23)
AL1-7-4	Ass'y, w/ swivel, 44.5mm (1.75") long
AL1-7-5	Ass'y, w/ Wisconsin swivel, 6.4mm (0.25") mounting I.D., 20.6mm (0.81") long
AL1-8-2	Stop ass'y, 8.0mm (0.31") mounting I.D., 19.1mm (0.75") long

LEVERS (CONTINUED)

PART#	DESCRIPTION
AL1-25-1	Ass'y, spring loaded, floating, 6.4mm (0.25") mounting I.D., 34.9mm (1.38") long w/ AC2-14-1
AL1-25-2	Ass'y, spring loaded, floating, 6.4mm (0.25") mounting I.D., 34.9mm (1.38") long w/ AC2-14-2
AL1-26-1	Ass'y, floating 6.4mm (0.25") mounting I.D., 54.0mm (2.13") long, w/ AC2-11
AL1-26-2	Ass'y, floating, w/ swivel 6.4mm (0.25") mounting I.D., 54.0mm (2.13") long, w/ AC2-11
AL1-27-1	Ass'y, spring loaded, floating, 8.0mm (0.31") mounting 54.0mm (2.13") long, w/ AC2-12
AL1-31	Ass'y Shaft clamp, 6.4mm (0.25") mounting I.D., 49.2mm (1.94") long
AL1-33	Ass'y Shaft clamp, 8.0mm (0.31") mounting I.D., 49.2mm (1.94") long
AL1-46	Ass'y Shaft clamp, 8.0mm (0.31") mounting I.D 47.6mm (1.88") long

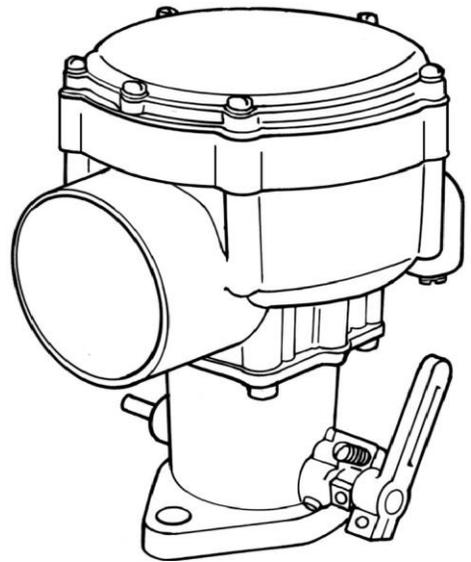
RETURN SPRINGS

PART#	DESCRIPTION
AS2-50-1	Throttle return, 6.4mm (0.25") Shaft
AS2-50-2	Throttle return, 8.0mm (0.31") Shaft

BRACKET ASSEMBLIES (OPTIONAL)

PART#	DESCRIPTION
AB4-2	Boden Wire
AB4-19	AS2-50-2 Throttle Return Spring

Model CA110



DESCRIPTION

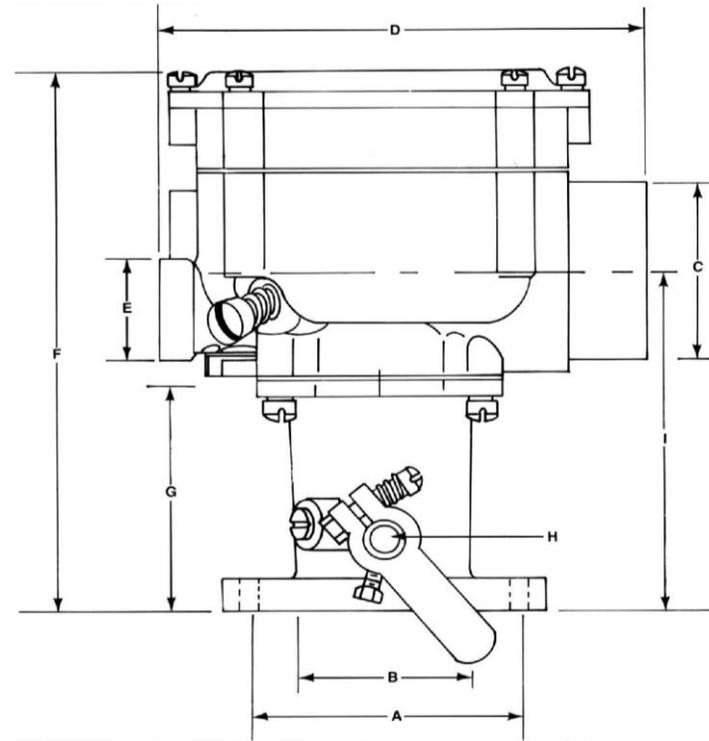
The Model 110 carburetor/mixer is designed primarily for one and two cylinder engines where severe intake manifold pressure pulsations are present. However, its use is not limited to these applications. Improved mixture control and air-gas valve durability can also benefit other applications in intake systems where pressure pulsations could adversely affect a standard 100/125 model assembly.

The Model 110 can be used with LPG Vapor or Natural Gas in applications requiring up to 170 CFM (80.2 L/s). All mixers and complete carburetors use a standard air-gas metering valve that provides adequate fuel mixture range with the appropriate positive (Natural Gas) or negative (LPG Vapor) vaporizer/ regulator. It is possible to use other air-gas metering valves and body assemblies from the 100/125 model and may have to be ordered as a separate component part.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	106 HP (79.0 kW) @ 170 CFM (80.2 L/s) and 2.0" Hg manifold depression

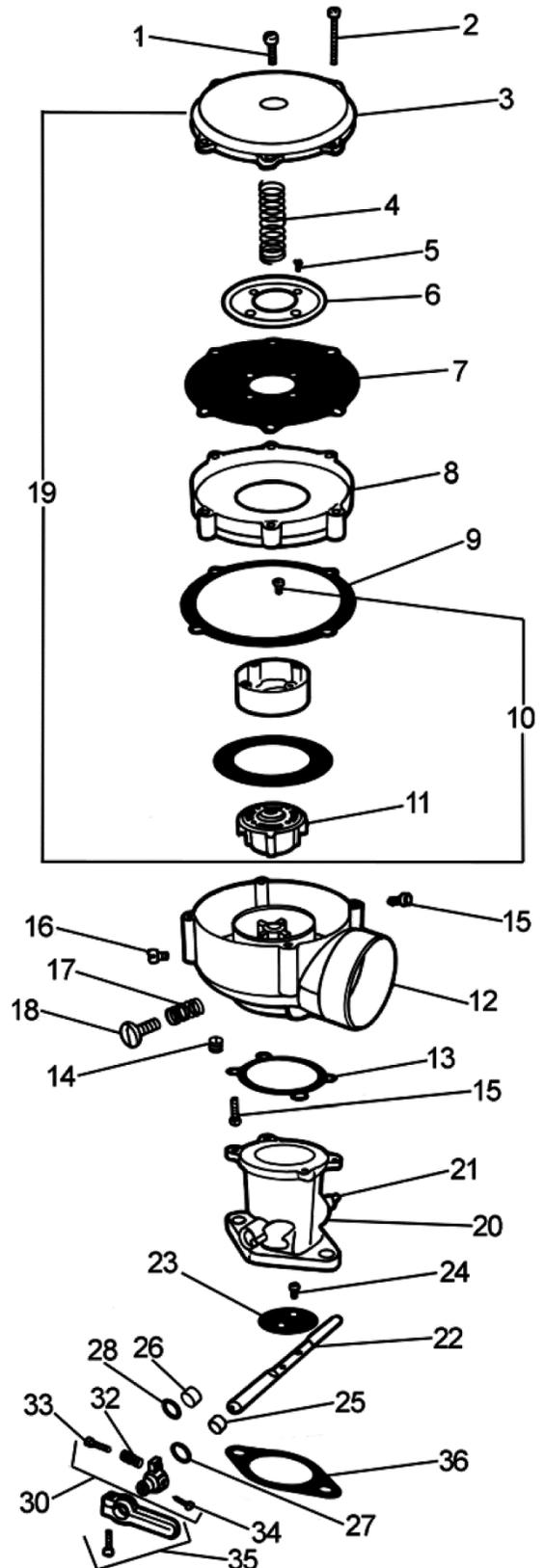
DIMENSIONS



STD. CARB.	MIXER	THROTTLE BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA	OVERALL WIDTH	NPT INLET FITTING	OVERALL HEGITH	THROTTLE BODY HEIGHT	THROTTLE SHAFT DIA.	FLANGE TO CTR. OF AIR HORN
110-12	110M-4	AT2-4-1	1-1/2"	74.6mm (2.938")	42.9mm (1.688")	58.7mm (2.313")	131mm (5.156")	1/2"	159mm (6.281")	69.1mm (2.719")	7.9mm (0.313")	99.6mm (3.92")
110-66-2	110M-4	AT2-4-1	1-1/2"	74.6mm (2.938")	42.9mm (1.688")	58.7mm (2.313")	131mm (5.156")	1/2"	159mm (6.281")	69.1mm (2.719")	7.9mm (0.313")	99.6mm (3.92")

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	NSS	Screw, 10-24 x 5/8" SEMS (2)
2	S1-41	Screw, 10-24 x 1-3/8" SEMS (4)
3	NSS	Cover
4	S2-13	Spring, air valvE
5	S1-12	Screw, 8-32 x 5/16" SEMS (4)
6	P2-15	Plate, backup
7	D1-13	Diaphragm
	D1-13-2	Diaphragm, silicone
8	P2-14	Plate, divide
9	G1-13	Gasket, plate to body
10	NSS	Spacer Assy
	NSS	Spacer Only
11	BV1-14	Air gas valve Assy, complete
12	NSS	1-8-4 Body Assy
13	G1-11	Gasket, throttle body to mixer
14	NSS	Plug, 1/8 NPT
15	S1-19	Screw, 12-24 x 5/8" SEMS (4)
16	S1-69	Screw, 1/4 -28 x 5/16" (2)
17	S2-88	Spring, idle scre
18	S1-74	Screw, idle
19	A110-DP	Dashpot Assy
	A110-DP-2	Dashpot Assy, Silicone
20	NSS	Throat, 3/4" SAE flange
21	NSS	Pin, throttle stop (2)
22	S5-1	Throttle shaft, 6.4 mm (0.25") dia.
	S5-2	Throttle shaft, 8.0 mm (0.31") dia.
23	NSS	Fly, 19.1 mm (0.75")
	NSS	Fly, 25.4mm (1.00")
	NSS	Fly, 38.1 mm (1.50")
	NSS	Fly, 44.5 mm (1.75")
24	S1-22	Screw, 6-32 x 1/4" SEMS (2)
	S1-12	Screw, 8-32 x 5/16" SEMS (2)
25	NSS	Bearing Oilite, 6.4 mm (0.25") ID.
26	NSS	Bearing needle, 6.4 mm (0.25")
27	NSS	Seal, 6.4 mm (0.25") shaft (2)
	NSS	Seal, 8.0 mm (0.31") shaft (2)
28	S3-25	Seal, internal, 8.0mm (0.31") ID.,
29	R1-9	Ring, seal retainer (2)
30	NSS	Throttle stop ass'y, 6.4mm (0.25") ID.
	AL1-8-2	Throttle stop ass'y, 8.0mm (0.31") ID.
31	NSS	Throttle stop lever
32	S2-15	Spring, idle stop screw
33	S1-21	Stop screw, 6-32 x 1/4"
34	S1-18	Pin, screw, throttle stop
35	NSS	Throttle lever, short w/screw
	AL1-7-1	Throttle lever, long w/screw
36	G1-16	Gasket, 19.1 mm (0.75") flange
	G1-17	Gasket, 25.4mm (1.00") flange
	G1-18	Gasket, 31.8mm (1.25") flange
	G1-19	Gasket, 38.1 mm (1.50") flange
	G1-23	Gasket, 44.5mm (1.75") flange
	G1-56	Gasket, 31.8-38.1 mm (1.25-1.50") flange



ASSEMBLIES & ACCESSORIES

MIXERS, LP GAS (STANDARD)

PART#	DESCRIPTION
110M-4	58.7 mm (2.31") Air Horn
110M-4-2	58.7 mm (2.31") Air Horn

LEVERS

PART#	DESCRIPTION
AL1-7-1	Ass'y, 44.5 mm (1.75") long
AL1-7-2	Ass'y, w/ 6.4 mm (0.25") ball stud, 44.5 mm (1.75") long
AL1-7-3	Ass'y, 33.3 mm (1.31") long (std. on AT2-1, AT2 2, AT2-23)
AL1-7-4	Ass'y, w/ swivel, 44.5 mm (1.75") long
AL1-7-5	Ass'y, w/ Wisconsin swivel, 6.4 mm (0.25") mounting I.D., 20.6 mm (0.81") long
AL1-8-1	Stop ass'y, 6.4 mm (0.25") mounting I.D., cutdown, 19.1 mm (0.75") long (std. on AT2-1, AT2-2)
AL1-8-2	Stop ass'y, 8.0 mm (0.31") mounting I.D., 19.1 mm (0.75") long
AL1-25-1	Ass'y, spring loaded, floating, 6.4 mm (0.25") mounting I.D., 34.9mm(1.38") long, w/ AC2-14-1
AL1-25-2	Ass'y, spring loaded, floating, 8.0 mm (0.31") mounting I.D., 34.9 mm(1.38") long, w/AC2-14-2
AL1-26-1	Ass'y, floating, 6.4 mm (0.25") mounting I.D.,
AL1-26-2	54.0 mm (2.13") long, w/AC2-11
AL1-27-1	Ass'y, floating, w/ swivel, 6.4 mm (0.25") mounting I.D., 54.0 mm (2.13") long, w/AC2-11
AL1-31	54.0 mm (2.13") long, w/AC2-12
AL1-33	Ass'y, floating, w/swivel, 8.0 mm (0.31") mounting I.D., 54.0 mm (2.13") long, w/AC2-12
AL1-46	Ass'y, shaft clamp, 6.4 mm (0.25") mounting I.D., 49.2 mm (1.94") long

NOTE: AL1-7-1 through AL1-7-4 levers used w/AL1-8 lever stop.

THROTTLE SHAFTS

PART#	DESCRIPTION
S5-1	6.4 mm (0.25") dia., 114 mm (4.50") long
S5-2	8.0 mm (0.31") dia., 127 mm (5.00") long
S5-6	6.4 mm (0.25") dia., 121 mm (4.75") long
S5-7	8.0 mm (0.31") dia., 133 mm (5.25") long
S5-11	8.0 mm (0.31") dia., 156 mm (6.13") long

THROTTLE BODIES (STANDARD)

PART#	DESCRIPTION
AT2-1	1" SAE flange, 6.4 mm (0.25") shaft dia.
AT2-2	1" SAE flange, 6.4 mm (0.25") shaft dia., w/ vacuum advance
AT2-2-5	1-1/4" SAE flange, 8.0 mm (0.31") dia.
AT2-3	1-1/4" SAE flange, 8.0 mm (0.31") dia., w/ vacuum advance
AT2-3-8	1-1/2" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-4-1	1-3/4" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-4-3	1-3/4" SAE flange, 8.0 mm (0.31") shaft dia., w/ needle bearings
AT2-16-1	1-1/4" to 1-1/2" flange, 8.0 mm (0.31") shaft dia., w/ needle bearings & internal seal
AT2-16-3	1-1/4" to 1-1/2" SAE flange, 8.0 mm (0.31") shaft dia., w/ needle bearings
AT2-16-4	1-1/4" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-23	1-1/4" to 1-1/2" SAE flange, 8.0 mm (0.31") shaft dia., w/ needle bearings & internal seal
AT2-23-4	1-1/4" SAE flange, 8.0 mm (0.31") shaft dia., w/ vacuum advance

RETURN SPRING ASSEMBLIES

PART#	DESCRIPTION
AS2-50-1	Throttle return, 6.4 mm (0.25") shaft AB4-2 Boden wire AS2-50-2 Throttle return, 8.0 mm (0.31") shaft

SPACERS (OPTIONAL)

PART#	DESCRIPTION
AS3-10	Ass'y, 12.7 mm (0.50"), to turn Air Horn 90° A110-DP Model 110 Mixer (also repair kit)
AS3-22	16.7 mm (0.66"), air valve A110-DP-2 Model 110 Mixer, w/ silicone diaphragm (also repair kit)
AS3-43	Ass'y, 4.8 mm (0.19"), to turn Air Horn 90°

CARBURETORS/MIXERS

PART#	DESCRIPTION
110-12	Carb, 1-1/2" SAE flange, 2-5/16" Air Horn, Oilite bearings w/ Silicone
110-12-2	Carb, 1-1/4 x 2-5/16 w/ AS2-50-2
110-66-2	Carb, 2-5/16" Air Horn, silicone diaphragm
110M-4-2	Mixer, with Silicone

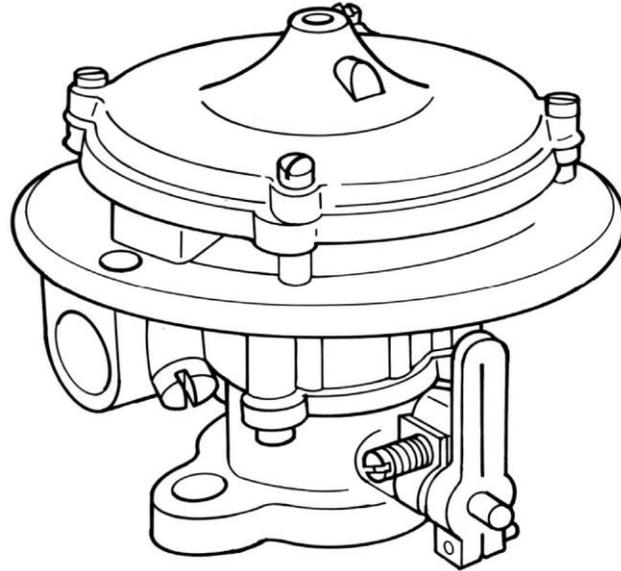
BRACKETASSEMBLIES(OPTIONAL)

PART#	DESCRIPTION
AB4-2	Boden Wire

DASHPOT ASSEMBLIES (STANDARD)

PART#	DESCRIPTION
A110-DP	Dashpot Assy 110 Mixer
A110-DP-2	Dashpot Assy 110 Mixer, Silicone

Model CA125



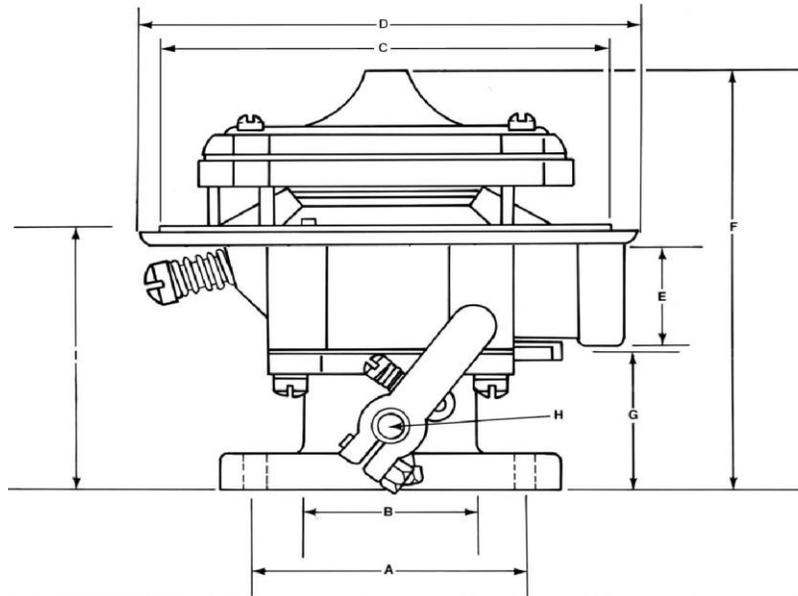
DESCRIPTION

The Model 125 carburetor is a single-diaphragm air valve carburetor/mixer for applications requiring airflow up to 235 CFM (111 L/s). It offers a down draft air inlet that can be used for remote air filtration or open-element type air filters. This unit is available for LPG Vapor and Natural Gas Vapor applications. The Model 125 is also available for feedback applications with the "FB" designation.

Two separate air valve vacuum supplies are available with this mixer. Additional low speed mixture control can be obtained to lean air/fuel mixtures with optional shims.

SPECIFICATIONS

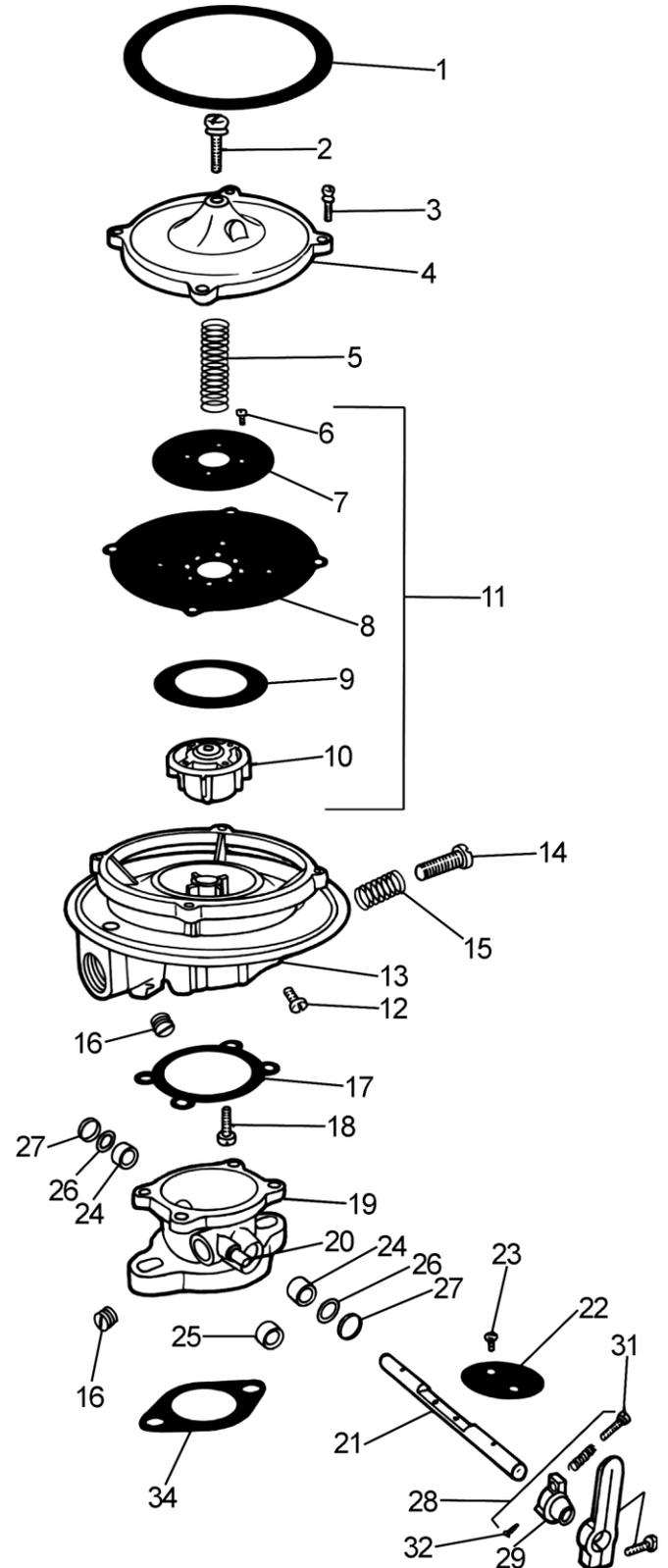
Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	126 HP (94.0 kW) @ 202 CFM (95 L/s) and 1.5" Hg manifold depression
	146 HP (108.8 kW) @ 235 CFM (111 L/s) and 2.0" Hg manifold depression

DIMENSIONS


	A	B	C	D	E	F	G			
STD. CARB	MIXER	THRTL. BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA	OVRAL. WIDTH	NPT INLET	OVERALL HEIGHT	THRTL. BODY HEIGHT
CA125-6	CA125M	AT2-16-1	1.25" X 1.50"	71.4mm (2.813")	42.9mm (1.688")	130mm (5.125")	140mm (5.500")	1/2"	141mm (5.563")	41.3mm (1.625")
CA125-8	CA125M	AT2-16-1	1.25" X 1.50"	71.4mm (2.813")	42.9mm (1.688")	130mm (5.125")	140mm (5.500")	1/2"	141mm (5.563")	41.3mm (1.625")
CA125-26	CA125M	AT2-16-1	1.25" X 1.50"	71.4mm (2.813")	42.9mm (1.688")	130mm (5.125")	140mm (5.500")	1/2"	141mm (5.563")	41.3mm (1.625")
CA125-38	CA125M	AT2-23-5	1.25"	68.3mm (2.688")	36.5mm (1.438")	130mm (5.125")	140mm (5.500")	1/2"	119mm (4.688")	34.9mm (1.375")
CA125-44	CA125M	NSS	1.25"	68.3mm (2.688")	36.5mm (1.438")	130mm (5.125")	140mm (5.500")	1/2"	154.1mm (4.688")	69.1mm (2.719")
CA125-52	CA125M	AT2-16-1	1.25" X 1.50"	71.4mm (2.813")	42.9mm (1.688")	130mm (5.125")	140mm (5.500")	1/2"	141mm (5.563")	41.3mm (1.625")
CA125-76-2	CA125M -2	AT2-23-6	1.25"	68.3mm (2.688")	36.5mm (1.438")	130mm (5.125")	140mm (5.500")	1/2"	119mm (4.688")	34.9mm (1.375")
CA125-100-2	CA125M-2	BT2-16-100	1.25" X 1.50"	71.4mm (2.813")	42.9mm (1.688")	130mm (5.125")	140mm (5.500")	1/2"	141mm (5.563")	41.3mm (1.625")
CA125-134	NSS	AT2-60G-1	N/A	N/A	N/A	N/A	N/A	1/2"	N/A	N/A

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	G1-66	Gasket, mixer to Air Horn
2	NSS	Screw, 1/4-20 x 1" SEMS
3	S1-3	Screw, 10-24 x 5/8" SEMS (4)
4	C1-26	Cover, air valve
5	S2-85	Spring, air valve
6	S1-22	Screw, 5-32 x 1/4" SEMS (4)
7	P2-22	Plate, backup
8	D1-17	Diaphragm
	D1-17-2	Diaphragm, silicone
9	R1-19	Ring, air valve
10	BV1-14	Air gas valve ass'y, complete
11	AV1-14	Std Valve & Diaphragm, LPG
	AV1-14-3	Std Valve & Diaphragm, Silicone LPG
12	S1-69	Screw, 1/4-28 x 5/16" (3)
13	NSS	Body ass'y
14	NSS	Screw, idle
15	S2-16	Screw, idle screw
16	NSS	Plug, 1/8 NPT
17	NSS	Gasket, throttle body to mixer
18	S1-19	Screw, 12-24 x 5/8" SEMS (4)
19	NSS	(Refer to chart for correct AT2-assembly)
20	NSS	Pin, throttle stop (2)
21	S5-1	Throttle shaft, 6.4 mm (0.25") dia.
	S5-2	Throttle shaft, 8.0 mm (0.31") dia.
	NSS	Fly, 19.1 mm (0.75")
	NSS	Fly, 25.4 mm (1.00")
	NSS	Fly, 38.1 mm (1.50")
	NSS	Fly, 44.5 mm (1.75")
22	NSS	Screw, 6-32 x 1/4" SEMS (2)
23	S1-12	Screw, 8-32 x 5/16" SEMS (2)
24	NSS	Bearing Oilite, 6.4 mm (0.25") I.D. (2)
25	NSS	Bearing needle, 6.4 mm (0.25") I.D.,
	NSS	Seal, 6.4 mm (0.25") shaft (2)
26	NSS	Seal, 8.0 mm (0.31") shaft (2)
	S3-25	Seal, internal, 8.0 mm (0.31") I.D.. opt. (2)
27	R1-9	Ring, seal retainer (2)
28	NSS	Throttle stop ass'y 8.0 mm (0.31") I.D.
29	NSS	Throttle stop lever
30	S2-15	Spring, idle stop screw
31	S1-21	Stop screw, 10-32 x 3/4"
32	S1-18	Pin, screw, throttle stop
33	AL1-7-3	Throttle lever, short, w/screw
	AL1-7-1	Throttle lever, long, w/screw
	G1-16	Gasket, 19.1 mm (0.75") flange
	G1-17	Gasket, 1" flange
	NSS	Gasket, 25.4 mm (1.00") flange
34	NSS	Gasket, 31.8 mm (1.25") flange
	NSS	Gasket, 38.1 mm (1.50") flange
	G1-23	G1-23 Gasket, 44.5 mm (1.75") flange
	G1-56	G1-56 Gasket, 31.8 - 38.1 mm (1.25 -1.50") flange



ASSEMBLIES & ACCESSORIES

MIXERS, LP GAS (STANDARD)

PART#	DESCRIPTION
CA125M	Mixer
CA125M-10	Mixer, complete vac. Lifter 100% Flow
CA125M-10-2	Mixer, complete vac. Lifter 100% Flow, Silicone
CA125M-2	ASM Mixer w/ silicone diaphragm dia.
CA125M-292	Mixer, Ass'y for CA125-134
CA125M-3	Mixer, Lean

THROTTLE SHAFTS

PART#	DESCRIPTION
S5-1	6.4mm (0.25") dia., 114mm (4.50") long
S5-2	8.0 mm (0.31") dia., 127 mm (5.00)" long
S5-6	6.4 mm (0.25") dia., 121 mm (4.75)" long
S5-7	8.0 mm (0.31") dia., 133 mm (5.25)" long
S5-11	8.0 mm (0.31") dia., 156 mm (6.13)" long

RING SPACERS

PART#	DESCRIPTION
R1-20	Donaldson, V, 58.7 mm (2.31") dia
R1-29	Air valve spacer, AV1-14 (to lean idle mixtures)

AIR CLEANER ASSEMBLIES

PART#	DESCRIPTION
AF1-5	71 L/s (150 cfm), 172 mm (6.75") O.D., 60.3 mm (2.38") high
F1-5	Filter, elem Air CA125 150cfm
AF1-8	118 L/s (2.50 cfm), 234 mm (9.25") O.D., 76.2 mm (3.00")
AL1-8-2	118 L/s (2.50 cfm), 234 mm (9.25") O.D., 76.2 mm (3.00") high
AF1-14	236 L/s (500 cfm), 228 mm (9.00") O.D., 191 mm (7.50")
C1-28	Cover, F1-5

THROTTLE BODIES (STANDARD)

PART#	DESCRIPTION
AT2-1	3/4" SAE flange, 6.4mm (0.25") Shaft dia.
AT2-2	1" SAE flange, 6.4 mm (0.25") shaft dia.
AT2-2-5	1" SAE flange, 6.4 mm (0.25") shaft dia., w/vacuum advance
AT2-3	1-1/4" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-3-8	1-1/4" SAE flange, 8.0 mm (0.31") shaft dia., w/ vacuum
AT2-4-1	1-1/2" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-4-3	1-3/4" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-16-1	1-1/4" to 1/2" SAE flange, 8.0 mm (0.31") shaft dia., no
AT2-16-4	1-1/4" to 1/2" SAE flange, 8.0 mm (0.31") shaft w/needle
AT2-23	1-1/4" SAE flange, 8.0 mm (0.31") shaft dia.
AT2-23-4	1-1/4" to 1/2" SAE flange, 8.0 mm (0.31") shaft dia., w/
AT2-2-6	Throttle Ass'y, 1" Long Shaft

NOTES: * AT2-16's have vacuum port.

* The above throttle bodies are offset.

SPACERS (OPTIONAL)

PART#	DESCRIPTION
AS3-10	Ass'y, 12.7 mm (0.50"), to turn Air horn 90°
AS3-43	Ass'y, 4.8 mm (0.19"), to turn Air horn 90°

BRACKET ASSEMBLIES (OPTIONAL)

PART#	DESCRIPTION
AB4-2	Throttle Cable/Boden Wire Bracket
AB4-19	AS2-50-2 Throttle Return Springs

RETURN SPRING ASSEMBLIES

PART#	DESCRIPTION
AS2-50-1	Throttle return, 6.4 mm (0.25") shaft
AS2-50-2	Throttle return, 8.0 mm (0.31") shaft

LEVERS

PART#	DESCRIPTION
AL1-7-1	Ass'y, 44.5 mm (1.75") long
AL1-7-2	Ass'y, w/ 6.4 mm (0.25") ball stud, 44.5 mm, long
AL1-7-3	Ass'y, 33.3 mm (1.31") long
AL1-7-4	Ass'y, w/ swivel, 44.5 mm (1.75") long
AL1-7-5	Ass'y, w/ Wisconsin swivel, 6.4 mm (0.25")
AL1-8-1	Stop ass'y, 6.4 mm (0.25") mounting I.D., 19.1
AL1-8-2	Stop ass'y, 8.0 mm (0.31") mounting I.D., 19.1
AL1-25-1	Ass'y, spring loaded, floating, 6.4 mm (0.25")
AL1-25-2	Ass'y spring loaded, floating, 8.0 mm (0.31")
AL1-26-1	Ass'y, floating, 6.4 mm (0.25") mounting I.D., 54.0
AL1-26-2	Ass'y, floating, w/ swivel, 6.4 mm (0.25")
AL1-27-1	Ass'y, floating, 8.0 mm (0.31") mounting I.D., 54.0
AL1-31	Ass'y, shaft clamp, 6.4 mm (0.25") mounting I.D.,
AL1-33	Ass'y, shaft clamp, 8.0 mm (0.31") mounting I.D.,
AL1-46	Ass'y, steel shaft clamp, 8.0 mm (0.31") mounting

CLAMP

PART#	DESCRIPTION
AC2-29	Clamp Assy, CA125-76

GOVERNOR

PART#	DESCRIPTION
AD1-85	Diaphragm, Asst. Throttle, governor
AT2-60G-1	Governor, Hyster 2V
AT2-77G	Governor, Assy
AT2-200	Governor, Assy LPG

ADAPTERS

PART#	DESCRIPTION
A1-53	Adapter, 125 Series Carb
A2-7	Air Horn, 66.7 mm (2.63") dia.
A2-8	Air Horn, 58.7 mm (2.31") dia.
A2-9	Air Horn, 56.4 mm (2.22") dia.
A2-33	Air Horn, 80 mm (3.16") dia.
A2-34	Air Horn, 54 mm (2.13") dia.
A3-28	200M, CA22M to 77.8 mm (3.06") hose (use w/
A3-29-1	Adapt. CA100M to CA125M to 2-1/16"
A3-29-2	Adapt. CA100M/CA125M to 2-1/16"

ASSEMBLIES & ACCESSORIES

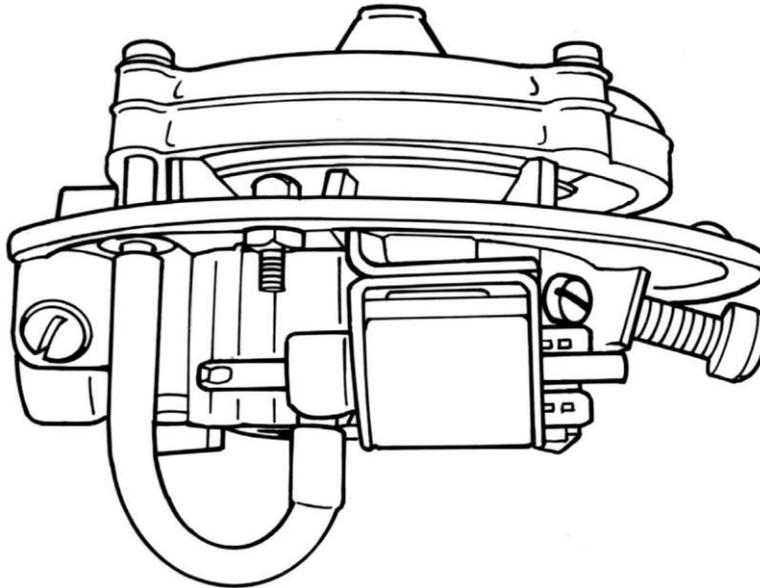
ADAPTERS (CONTINUED)

PART#	DESCRIPTION
AA3-29-1	CA125M to 52.4 mm (2.06") hose
AA3-29-2	CA125M to 52.4 mm (2.06") hose, tapped 12-24
A3-31	CA125M to 57.2 mm (2.25") hose
AA3-32-1	CA125M to IMPCO 2B throttle body
AA3-49	CA125M to Datsun C5-P5 Nikki throttle body
AA3-50	CA125M to Datsun C3-P3 throttle body
A3-94	Datsun 4 bolt to 1" SAE Flange

AIR-GAS VALVE ASSEMBLIES

PART#	DESCRIPTION
AV1-14	Std, w/hydrin, diaphragm, LPG
AV1-14-2	Lean, w/hydrin, diaphragm, LPG
AV1-14-3	Std, w/silicone, diaphragm, LPG
AV1-14-4	Lean, w/silicone, diaphragm, LPG
AV1-14-220-2	W/silicone, diaphragm, for non-feedback
AV1-1447-2	For std. feedback, w/silicone, diaphragm
CV1-14	Special lean, w/hydrin, diaphragm
CV1-14-2	Special lean, w/silicone, diaphragm
EV1-14	W/42 valve
EV1-14-2	W/42 valve & silicone diaphragm
EV1-14-4	Air Gas Valve Assembly
AV1-30692-001	Air Gas Valve Assembly

Model CA125M-10



DESCRIPTION

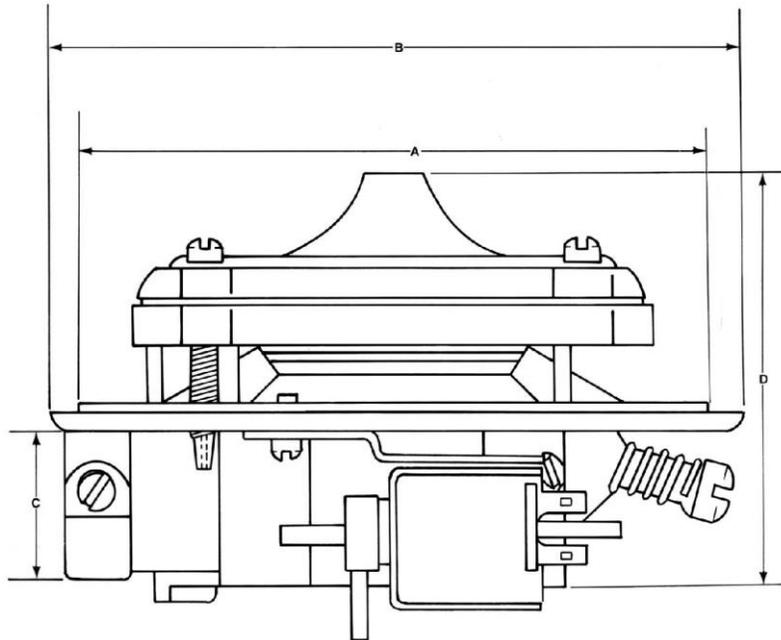
The Model 125M-10 is a vacuum lift mixer designed to reduce inlet restrictions in dual fuel installations with airflow requirements up to 235 CFM (111 L/s). In some applications, inlet restrictions cannot be tolerated with a conventional gasoline carburetor as they will cause it to run rich.

The 125M-10 provides an electrically-operated solenoid that directs manifold vacuum to the top diaphragm chamber when gasoline operation is desired. This provides full air valve lift, reducing air inlet restriction to a minimum. The 125M-10 is available with standard type air-gas metering valves and feedback control systems.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	146 hp (175.2 kW) @ 235 CFM (111 L/s) and 2.0" Hg manifold depression

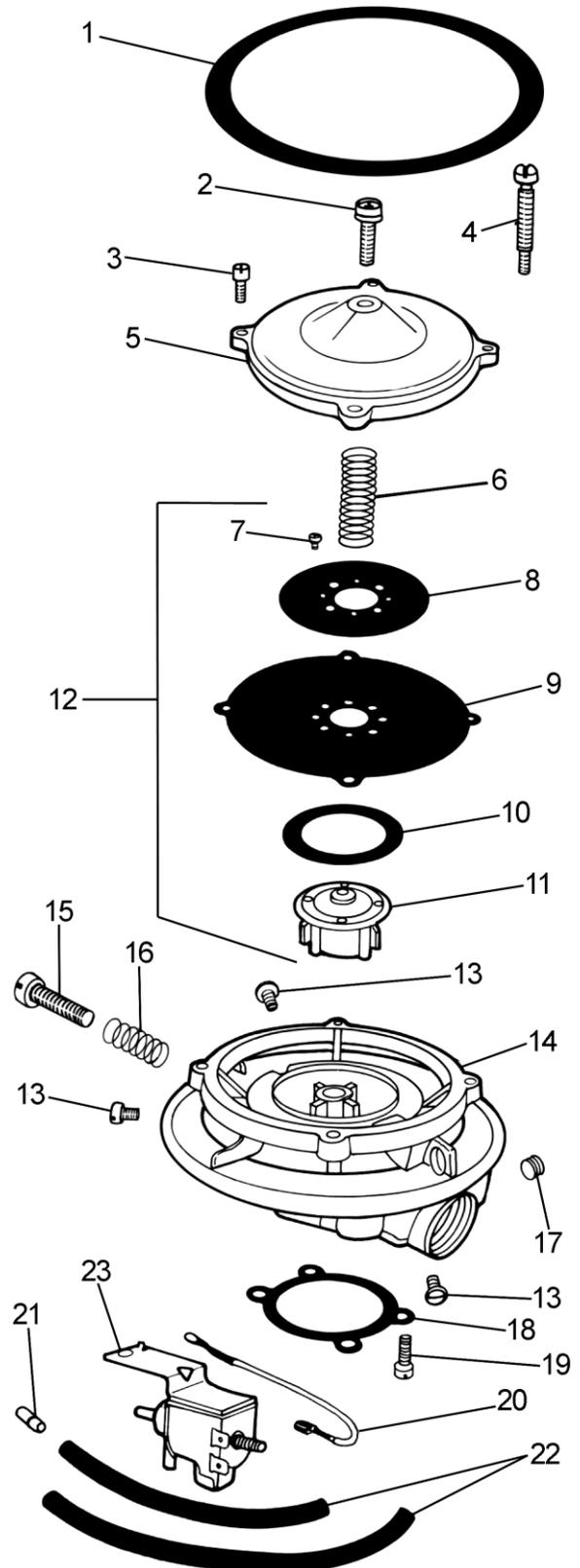
DIMENSIONS



	A	B	C	D
MIXER	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT INLET FITTING	OVERALL HEIGHT
CA125M-10	130MM (5.13")	140MM (5.50")	1/2"	100MM (3.94")
CA125M-10-2	130MM (5.13")	140MM (5.50")	1/2"	100MM (3.94")

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	G1-66	Gasket, Mixer to Air Horn
2	NSS	Screw, 1/4-20 x 1" SEMS
3	S1-3	Screw, 10-24 x 5/8" SEMS (4)
4	NSS	Screw, 1/4 x 1-3/4" fillister head,
5	NSS	Cover, Air Valve
6	S2-85	Spring, air valve
7	S1-22	Screw, 5-32 x 1/4" SEMS (4)
8	P2-22	Plate, backup
9	D1-17	Diaphragm
	D1-17-2	Diaphragm, Silicone
10	R1-19	Ring, air valve
11	BV1-14	Air Gas Valve Assy, Complete
12	AV1-14-12	Valve & diaphragm Assy, Complete
	EV1-14-5	Valve & diaphragm Assy, Silicone, Complete
13	S1-69	Screw, 1/4-28 x 5/16" (3)
14	NSS	Body ass'y
15	NSS	Screw, Idle
16	S2-16	Spring, idle screw
17	NSS	Plug, 1/8 NPT
18	G1-11	Gasket, throttle body to mixer
19	S1-19	Scrw, 12-24 x 5/8" SEMS (4)
20	NSS	Wire, terminal
21	F4-2	Fitting, 1/4-28 to 1/4" hose
22	NSS	Hose
23	NSS	Fitting, 1/4-28 to 3/16" hose





ASSEMBLIES & ACCESSORIES

AIR GAS VALVE ASSEMBLIES

PART#	DESCRIPTION
AV1-14-12	Dual fuel for vacuum lift CA125M-10, w/ Hydrin diaphragm
AV1-14-12-2	Dual fuel for vacuum lift CA125M-10, w/ silicone diaphragm
AV1-1447-2*	For std. feedback, w/silicone diaphragm

*Modification required for vacuum lift operation.

AIR CLEANER ASSEMBLIES

PART#	DESCRIPTION
AF1-5	71L/s (150 cfm), 172 mm (6.75") O.D., 60.3 mm (2.38") high
AF1-8	118L/s (250 cfm), 234 mm (9.25") O.D., 76.2 mm (3.00") high
AF1-14	236L/s (500 cfm), 228 mm (9.00") O.D., 191 mm (7.50") high

ADAPTERS

PART#	DESCRIPTION
A2-7	Air Horn 66.7 mm (2.63") dia.
A2-8	Air Horn 58.7 mm (2.31") dia.
A2-9	Air Horn 56.4 mm (2.22") dia.
A2-33	Air Horn 80 mm (3.16") dia.
A2-34	Air Horn 54 mm (2.13") dia.
A2-47	Adapter, Air Cleaner Base
AA3-29-1	CA125M to 2-1/16" hose
AA3-29-2	CA125M to 2-1/16" hose, tapped 12-24
A3-29-3	CA125M to 2-1/16" hose, w/ mounting base
A3-30	200M, CA225M to 2-5/8" hose (use w/ A3-32-1)
A3-31	CA125M to 2-1/4" hose
AA3-32-1	CA125 to IMPCO 2B throttle body

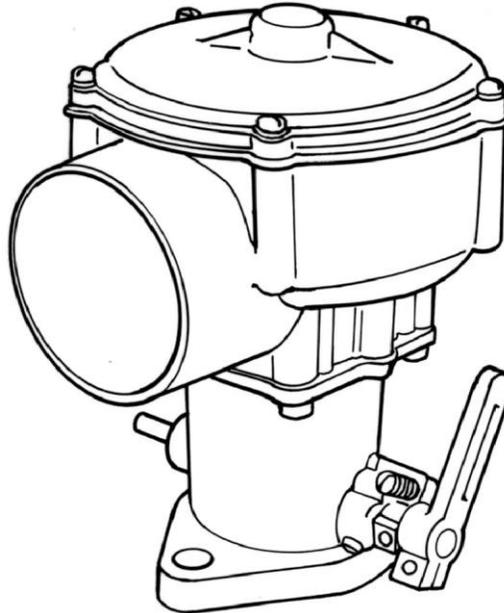
CA125 SERIES CARBURETORS

PART#	DESCRIPTION
CA125-100-2	Carburetor, 1-1/2" SAE flange w/ Silicone
CA125-134	Carburetor, governor ass'y, Hyster forklift
CA125-26	Carburetor, 1-1/2" SAE flange, 2-5/8" Air Horn
CA125-38	Carb, 1-1/4" SAE flange, 2-5/16" Air Horn, EV1-14 72/80 flow
CA125-44	Carburetor, 1-1/4" SAE flange, 2-5/16" Air Horn
CA125-52	Carb, 1-1/4" & 1-1/2" SAE flange, no Air Horn, w/ bracket & swivel
CA125-6	Carb 1-1/4" & 1-1/2" SAE flange, 2-5/16" Air Horn
CA125-76-2	Carb, 1-1/4" SAE flange (short), 80 mm Air Horn, spring hole R, w/ AV1-14-76-2
CA125-8	Carb, 1-1/4" & 1-1/2" SAE flange, 2-5/16" center stud Air Horn

CA125 SERIES MIXERS

PART#	DESCRIPTION
CA125M	Mixer with Hydrin Diaphragm
CA125M-10	Mixer, dual fuel, vacuum lift mixer with Hydrin diaphragm
CA125M-10-2	Mixer, dual fuel, vacuum lift mixer with Silicone diaphragm
CA125M-2	Mixer with Silicone diaphragm
CA125M-292	Mixer Assembly for CA125-134
CA125M-3	Lean flow mixer with Silicone diaphragm

Model 200



DESCRIPTION

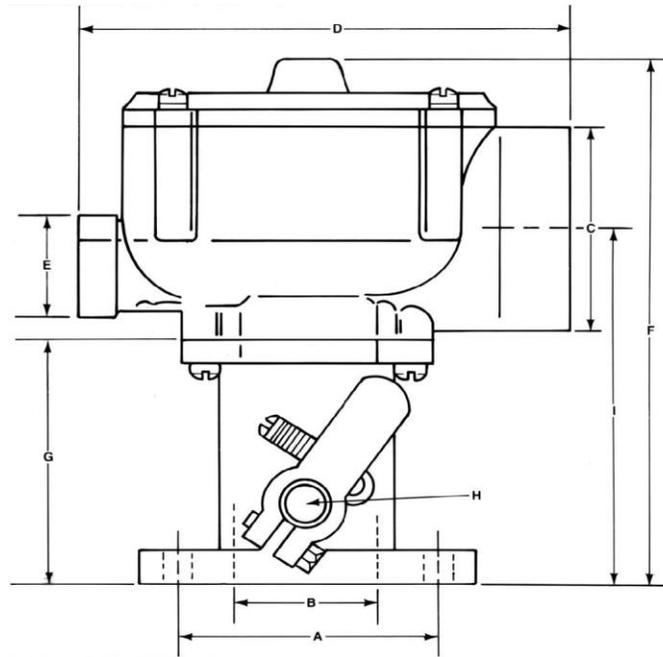
The Model 200 is a single diaphragm air-valve carburetor/mixer. It offers a 90° air inlet to provide low overhead clearance, and is available with several air horn and throttle valve options. This unit is available for LPG Vapor or Natural Gas for applications with airflow requirements up to 345 CFM (162.8 L/s). All DG model mixers reduce airflow by 30%.

The Model 200 is also available for feedback applications with the 'FB' designation. The 200 mixer provides a convenient 1/8" balance port at the air inlet. Additional low speed idle mixture control can be obtained to lean air/fuel mixtures through the use of optional shims.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	172 hp (128.0 kW) @ 276 CFM (130 L/s) and 1.5" Hg manifold depression 215 hp (160.3 kW) @ 345 CFM (162.8 L/s) and 2.0" Hg manifold depression

DIMENSIONS



STD. CARB.	MIXER	THRTL. BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT INLET FITTING	OVERALL HEIGHT	THROTTLE BODY HEIGHT	THROTTLE SHAFT DIA.	FLANGE TO CTR. OF AIR HORN
200-2	200M-1	AT2-4-2	1-1/2"	74.6 mm (2.938")	42.9 mm (1.688")	66.7 mm (2.625")	165 mm (6.500")	3/4"	175 mm (6.875")	69.9 mm (2.750")	7.9 mm (0.313")	110 mm (4.334")
200-2-2	200M-1-2	AT2-4-2	1-1/2"	74.6 mm (2.938")	42.9 mm (1.688")	66.7 mm (2.625")	165 mm (6.500")	3/4"	175 mm (6.875")	69.9 mm (2.750")	7.9 mm (0.313")	110 mm (4.334")
200-4	200M-1	AT2-5	1-3/4"	84.1 mm (3.313")	49.2 mm (1.938")	66.7 mm (2.625")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")
200-6	200M-2	AT2-6	2"	90.5 mm (3.563")	55.6 mm (2.188")	77.8 mm (3.063")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")
200-6-2	200M-2-2	AT2-6	2"	90.5 mm (3.563")	55.6 mm (2.188")	77.8 mm (3.063")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")
200-8	200M-2	AT2-5	1-3/4"	84.1 mm (3.313")	49.2 mm (1.938")	77.8 mm (3.063")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")
200-8-2	200M-2-2	AT2-5	1-3/4"	84.1 mm (3.313")	49.2 mm (1.938")	77.8 mm (3.063")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")
DG200-29	NSS	NSS		90.5 mm (3.563")	55.6 mm (2.188")	77.8 mm (3.063")	165 mm (6.500")	3/4"	187 mm (7.375")	82.6 mm (3.250")	9.5 mm (0.375")	123 mm (4.844")

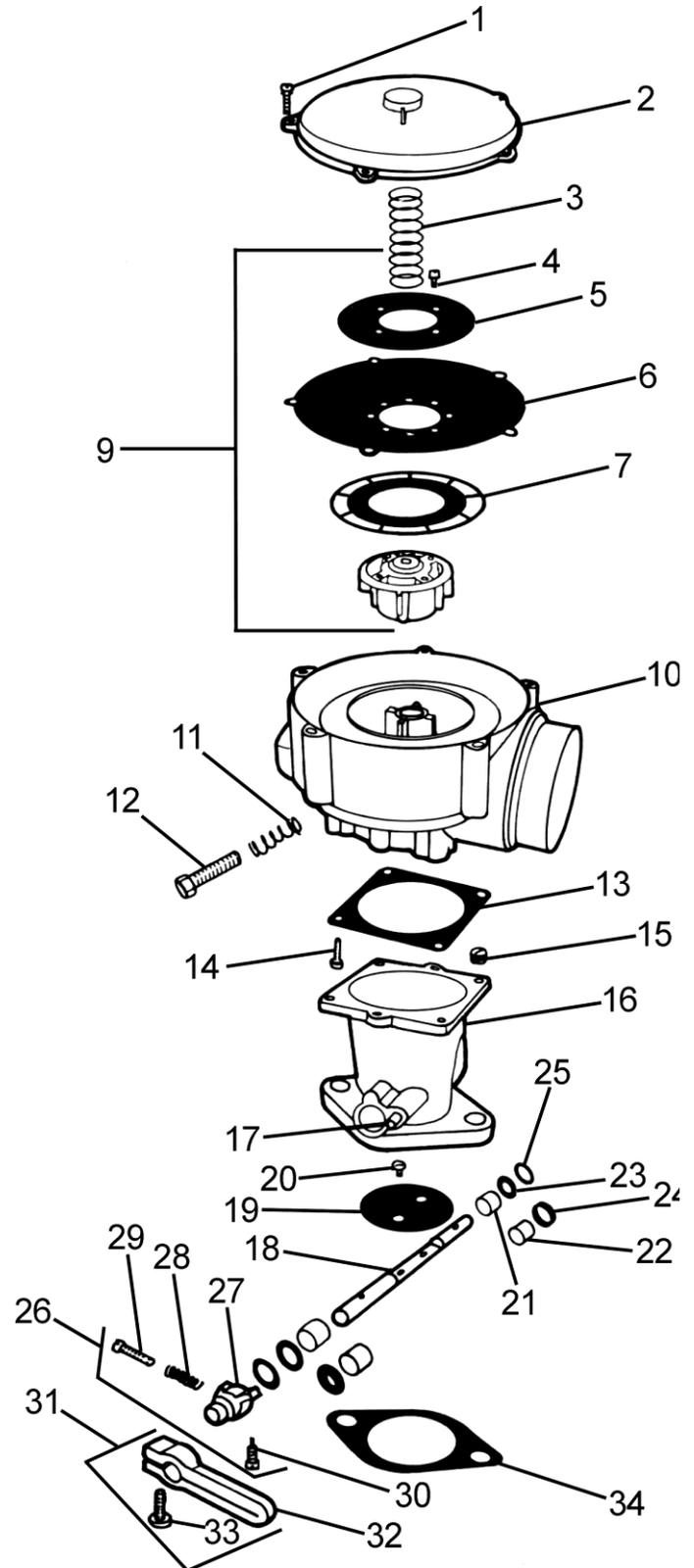
MIXERS ONLY

MIXER	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT INLET FITTING	FLANGE TO CTR. OF AIR HORN
LH200M-2-2	77.8 mm (3.063")	165 mm (6.500")	3/4"	123 mm (4.844")
DG200M-2 -2	77.8 mm (3.063")	165 mm (6.500")	3/4"	123 mm (4.844")

Note: All DG model mixers reduce airflow by 30%.

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	S1-3	Screw, 10-24 x 5/8" SEMS (4)
2	C1-18	Cover
3	S2-17	Spring, Air Valve
4	S1-12	Screw, 8-32 x 5/16" SEMS (4)
5	P2-21	Plate, backup
6	D1-16-1	Diaphragm
	D1-16-2	Diaphragm, Silicone
7	R1-17	Ring, air valve
8	NSS	Air-gas Valve Assy
9	AV1-12-6	Air-gas Valve Assy w/diaphragm
	DG-AV1-12-2	Digester Gas Valve Assy w/Silicon diaphragm
10	NSS	Body Assy, 66.7mm (2.625") Air Horn
	AB1-11-2	Body ass'y, 77.8 mm (3.063") Air Horn
11	S2-16	Spring, Idle Screw
12	NSS	Screw, Idle
13	G1-21	Gasket, throttle body to mixer
14	S1-19	Screw, 12-24 x 5/8 SEMS (4)
15	NSS	Plug, 1/8 NPT
16	NSS	(Refer to Throttle Body Chart)
17	NSS	Pin, throttle stop (2)
18	S5-2	Throttle Shaft, 7.9mm (0.313") dia.
	S5-3	Throttle Shaft, 9.5mm (0.375") dia.
	NSS	Butterfly, 38.1 mm (1.500")
19	NSS	Butterfly, 44.5 mm (1.750")
	NSS	Butterfly, 50.8 mm (2.000")
20	S1-12	Screw, 8-32 x 5/16" SEMS (2)
21	B2-13	Bearing, Oilite, 7.9 mm (0.313") I.D. (2)
22	B2-7	Bearing, needle, 7.9 mm (0.313") I.D.
	NSS	Bearing, needle, 9.5 mm (0.375") I.D.
23	NSS	Seal, 7.9 mm (0.313") shaft (2)
	S3-11	Seal, 9.5 mm (0.375") shaft (2)
24	S3-20	Seal, Internal 9.5mm (0.375") ID Optional
25	R1-9	Ring, seal retainer, 7.9 mm (0.313") shaft (2)
	R1-8	Ring, seal retainer, 9.5 mm (0.375") shaft (2)
26	AL1-8-2	Throttle Stop Assy 7.9mm (0.313") ID
	AL1-10	Throttle Stop Assy 9.5 mm (0.375") ID
27	NSS	Throttle stop lever, 7.9 mm (0.313") I.D
	NSS	Throttle stop lever, 9.5 mm (0.375") I.D
28	S2-15	Spring, Stop Screw
29	S1-21	Stop screw, 10-32 x 3/4"
30	S1-18	Pin Screw, Throttle Stop
31	AL1-7-1	Throttle Lever, w/S1-17, L1-7
	AL1-9-1	Throttle Lever, w/S1-26, L1-9
		Throttle Lever 58.7 mm (2.31") long,
	AL1-9-1A	0.562" mounting ID
32	NSS	Throttle Lever
33	NSS	Screw, 10-24 x 5/8"
	NSS	Screw, 12-24 x 5/8"
34	G1-19	Gasket, 38.1 mm (1.500") flange
	G1-23	Gasket, 44.5 mm (1.750") flange
	G1-24	Gasket, 50.8 mm (2.000") flange



ASSEMBLIES & ACCESSORIES

MIXERS, LP GAS (STANDARD)

PART#	DESCRIPTION
200M-1	For 66.7 mm (2.63") Air Horn
200M-1-2	For 66.7 mm (2.63") Air Horn, w/ silicone diaphragm
200M-2	For 77.8mm (3.06") Air Horn
200M-2-2	For 77.8mm (3.06") Air Horn, w/ silicone diaphragm
200M-2-3	For 77.8mm (3.06") A.H., w/4 Air Valve Vac Ports
FB200M-1-2	For ATECO, feedback, 66.7 mm (2.63") Air Horn
FB200M-2-2	For feedback, 77.8 mm (3.06") Air Horn, w/silicone diaphragm
LH200M-2-2	Mixer, 3 1/16" Air Horn LH VMQ
DG200M-2 -2	Mixer, 3 1/16" Air Horn DG VMQ

ADAPTERS

PART#	DESCRIPTION
AA3-19	Adapt. 200M to Holley 2B throttle body
A3-28	Adapt. 200M to 3-1/16" hose
A3-30	Adapt. 200M to 2-5/8" hose
AA3-32-2	Adapt. 200M to CA100 throttle body
AA3-47-2	Adapt. 200M to CA425 throttle body
AA3-48-2	Adapt. 200M to CA425 hose elbow

RING SPACER

PART#	DESCRIPTION
R1-30	Ring, Air Valve Spacer, for AV1-12 (to lean mixture)

RETURN SPRINGS

PART#	DESCRIPTION
AS2-50-2	7.9 mm (0.31") throttle return
AS2-50-3	9.5 mm (0.38") throttle return
AS2-50-4	11.1 mm (0.44") throttle return

PART#	DESCRIPTION
AT2-4-2	Standard, 38.1 mm (1.50") flange, 7.9 mm (0.31") shaft dia.
AT2-5	Standard, 44.5 mm (1.75") flange, 9.5 mm (0.38") shaft dia.
AT2-6	Standard, 50.8 mm (2.00") flange, 9.5 mm (0.38") shaft dia., center bore
AT2-6-3	50.8 mm (2.00") flange, 9.5 mm (0.38") shaft dia., center bore, w/ needle bearings & internal seal

THROTTLE BODIES (TWO BARREL)

PART#	DESCRIPTION
AT2-11-1	Standard, 31.8 mm (1.25") flange, 11.1 mm (0.44") shaft dia.
AT2-12	Standard, 38.1 mm (1.50") flange, 11.1 mm (0.44") shaft dia.
AT2-13-1	Standard, Holley, 11.1 mm (0.44") shaft dia.

THROTTLE SHAFTS

PART#	DESCRIPTION
S5-2	7.9 mm (0.31") dia., 127 mm (5.00") long, standard AT2-4-2
S5-3	9.5 mm (0.38") dia., 138 mm (5.44") long, standard on AT2-5, AT2-6
S5-4	11.1 mm (0.44") dia., 179 mm (7.06") long, standard on 2B throttle bodies
S5-7	7.9 mm (0.31") dia., 133 mm (5.25") long (5.00")
S5-11	7.9 mm (0.31") dia., 156 mm (6.13") long

SPACERS

PART#	DESCRIPTION
AS3-45	Spacer 20.6 mm (0.81") high

ASSEMBLIES & ACCESSORIES (CONTINUED)
LEVERS

PART#	DESCRIPTION
AL1-7-1	Ass'y, 44.5 mm (1.75") long (std. on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1)
AL1-7-2	Ass'y, w / 64 mm (0.25") ball stud, 44.5 mm (1.75")
AL1-7-3	Ass'y, 33.3 mm (1.31") long (std. on AT2-1, AT2-2, AT2-23)
AL1-7-4	Ass'y, w/ swivel, 44.5 mm (1.75") long
AL1-8-2	Stop ass'y, 7.9 mm (0.31") mounting I.D., 19.1 mm (0.75") long (std. on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1, AT2-23)
AL1-8-4	Stop ass'y, 7.9 mm (0.31") mounting I.D., 19.1 mm (0.75") long
AL1-9-1	58.7 mm (2.31") long, standard on AT2-11-1, AT2-6)
AL1-9-1A	58.7 mm (2.31") long, 0.562" mounting ID
AL1-10	Lever stop ass'y, 9.5 mm (0.38") mounting ID 22.2mm (0.88") long, standard on AT2-5, AT2-6
AL1-11-1	Lever stop ass'y, 11.1 mm (0.44") mounting ID 25.4mm (1.00") long, standard on AT2-11-1, AT2-12, AT2-13-1, AT2-15
AL1-12-1	77.8mm (3.06") long
AL1-12-3	58.7mm (2.31") long, standard on AT2-11-1, AT2-13-1, AT2-12-1-, AT2-15
AL1-25-2	Ass'y, spring loaded, floating 7.9 mm (0.31") mounting I.D., 34.9 mm (1.38") long, w/ AC2-14-2
AL1-27-1	Ass'y, floating 7.9 mm (0.31") mounting I.D., 54.0 mm (2.13") long, w/AC2-12
AL1-33	Ass'y, shaft clamp, 7.9 mm (0.31") mounting I.D., 49.2 mm (1.94") long
AL1-46	Ass'y, steel shaft clamp, 7.9 mm (0.31") mounting I.D., 47.6 mm (1.88") long

NOTE:

AL1-7-1 through AL-17-4 levers used w/ AL1-8 lever stop

AL1-9 levers used a/AL1-10 lever stop

AL1-12 lever used w/AL1-11 lever stop

See Accessories section of catalog for other optional levers.

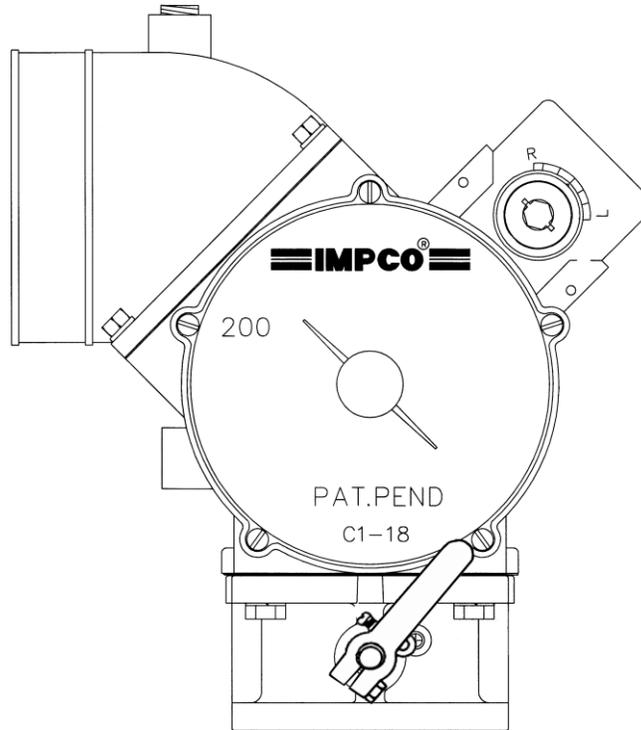
AIR GAS VALVES

PART#	DESCRIPTION
AV1-12	Standard, w/Hydrin diaphragm
AV1-12-2	Standard, w/Silicone diaphragm
AV1-12-3	For 1 & 2 cylinder engines, w/Hydrin diaphragm & ball check ass'y
AV1-12-3-2	For 1 & 2 cylinder engines, w/Silicone diaphragm & ball check ass'y
AV1-12-6	Rich, w/ Hydrin diaphragm
AV1-1245	Standard feedback, w/Hydrin diaphragm
AV1-1245-2	Standard feedback, w/Silicone diaphragm
AV1-1245-4	Feedback, richer idle
DG-AV1-12	For digester gas (550-750 BTU), w/Hydrin diaphragm
DG-AV1-12-2	For digester gas (550-750 BTU), w/Silicone diaphragm
LH-AV1-12-2	Valve Ass'y, Low Heat, Silicone
CV1-12	Valve Ass'y, Natural Gas
CV1-12-2	For Natural Gas, w/Silicone diaphragm

SLEEVE DIGESTER MIXER

PART#	DESCRIPTION
S6-1	Sleeve DG200
S6-2	Sleeve DG200T

Model 200D



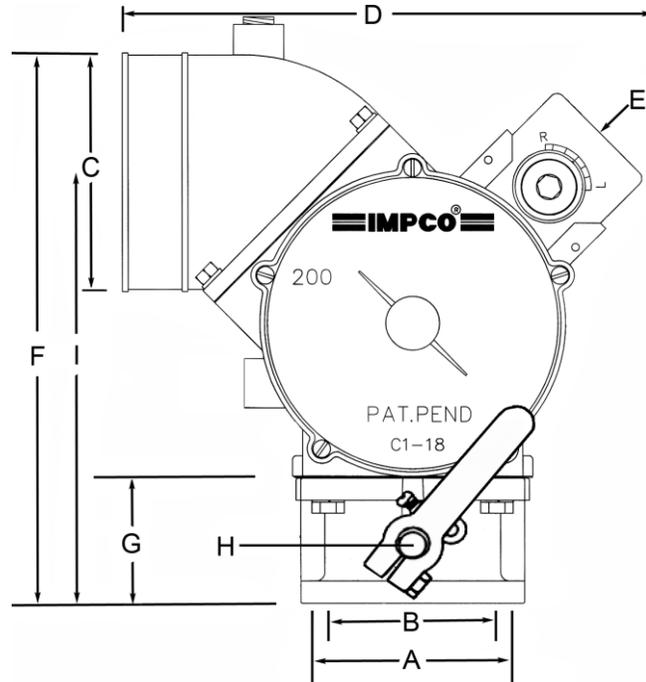
DESCRIPTION

The Model 200D is a dual diaphragm air-valve carburetor/ fuel mixer. It offers a 90° air inlet to provide low overhead clearance, and is available with several Air Horn and throttle valve options. This unit is available for LPG Vapor, Natural Gas, Digester/Landfill Gas applications as low as 500 BTU for with airflow requirements up to 468 CFM (221 L/s). All DG model mixers reduce airflow by 30%.

The Model 200D is also available for feedback applications with the 'FB' designation, and offers tamper resistant compliance using the optional tamper resistant mixture adjustment caps. The 200D mixer provides a convenient 1/4" balance port at the air inlet, and a slow speed "idle" adjustment. Additional low speed idle mixture control can be obtained to lean air/fuel mixtures through the use of optional shims. The valve can be turned with an imperial 5/16" or metric 8mm hex key from both sides and can be made tamper resistant by using a cap to comply with tamper resistant emission regulations by using Tamper Resistant Plug, part number P3-17956-20, purchased separately.

SPECIFICATIONS

Fuel Type	LPG Vapor, Natural Gas, or Digester/Landfill Gas (550 - 2,500 BTU)
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	292 hp (217.7 kW) @ 468 CFM (221 L/s) and 2,500 BTU per cubic foot with 2.0" Hg manifold depression

DIMENSIONS


STD CARD	MIXER	THRTL BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA.	OVERALL WIDTH	NTP INLET	OVERALL HEIGHT	THRTL BODY HEIGHT	THRTL SHAFT DIA.	FLANGE TO CTR OF AIR HORN
200D-1	200DM	AT2-7	2.5"	73.0mm (2.875")	68.2mm (2.69")	88.9mm (3.50")	224.6mm (8.84")	1-1/4"	227.3mm (8.95")	53.9mm (2.13")	11.1mm (.44")	183.0mm (7.2")
200D-3	200DM	AT2-7	2.5"	73.0mm (2.875")	68.2mm (2.69")	101.6mm (4.00")	224.6mm (8.84")	1-1/4"	233.7mm (9.20")	53.9mm (2.13")	11.1mm (.44")	183.0mm (7.2")
200D-3-2	200DM-2	AT2-7	2.5"	73.0mm (2.875")	68.2mm (2.69")	101.6mm (4.00")	224.6mm (8.84")	1-1/4"	233.7mm (9.20")	53.9mm (2.13")	11.1mm (.44")	183.0mm (7.2")
200D-5	200DM	AT2-8	3"	82.6mm (3.25")	82.6mm (3.25")	101.6mm (4.00")	224.6mm (8.84")	1-1/4"	235.0mm (9.27")	56.0mm (2.19")	11.1mm (.44")	184.7mm (7.27")
200D-7	200DM	AT2-7	2.5"	73.0mm (2.875")	68.2mm (2.69")	101.6mm (4.00")	224.6mm (8.84")	1-1/4"	233.7mm (9.20")	53.9mm (2.13")	11.1mm (.44")	183.0mm (7.2")
DG200D-3	N/A	AT2-7	2.5"	73.0mm (2.875")	68.2mm (2.69")	101.6mm (4.00")	224.6mm (8.84")	1-1/4"	233.7mm (9.20")	53.9mm (2.13")	11.1mm (.44")	183.0mm (7.2")

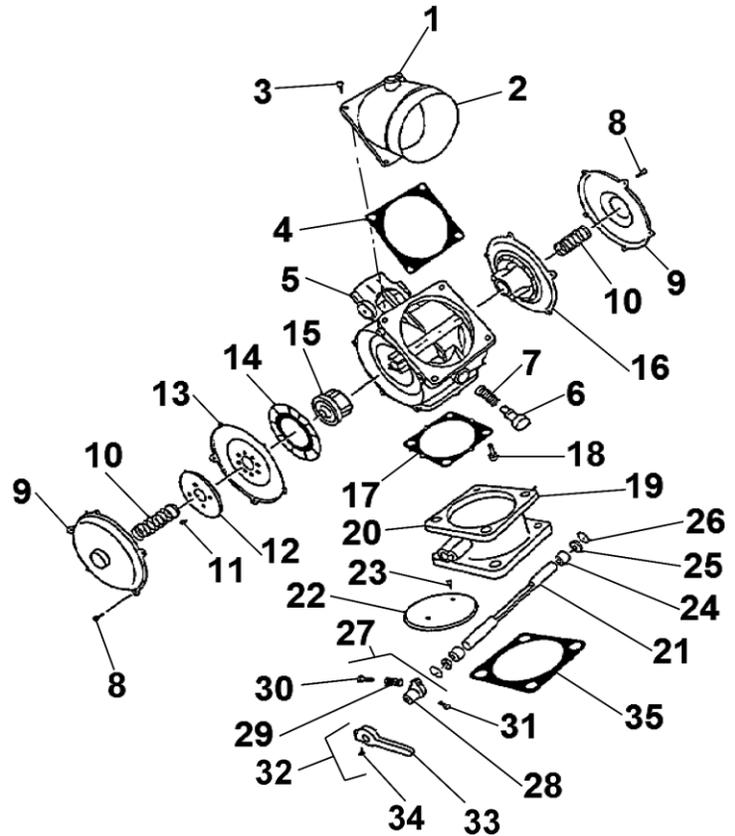
Note: All DG model mixers reduce airflow by 30%.

TAMPER RESISTANT PLUG

PART #	DESCRIPTION
P3-17956-20	Plug, Expansion

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS	Plug, 1/4" NPT
2	E1-7 / E1-8	Air Horn
3	NSS	Screw, 1/4-20 x 3/4" SEMS
4	G1-26*	Gasket, Air Horn
5	AB1-12L	Body Assy, Left Hand 200 DM
	AB1-12R	Body Assy, Right Hand 200 D
6	AS1-33	Screw, Idle (Early Models Only)
7	S2-18	Spring, Idle (Early Models Only)
8	S1-3	Screw, 10-24 x 5/8" SEMS
9	C1-18	Cover
10	S2-17	Spring, air valve
11	S1-12	Screw, 8-32 x 5/16" SEMS
12	NSS	Plate, Back up
13	D1-16-1	Diaphragm
	D1-16-2*	Diaphragm, Silicone
14	R1-17	Ring, Air Valve
15	BV1-12	Air Gas Valve Ass'y
16	AV1-12	Valve and Diaphragm Ass'y
	AV1-12-2	Air Valve Assy w/Silicone Diagr.
17	G1-25*	Gasket, Throttle Body to Mixer
18	S1-30	Screw, 5/16 - 18 x 7/8" Hex
19	NSS	Throat Assy
20	P1-6	Pin, throttle Stop
21	S5-4	Throat Shaft, 7/16" Dia
22	F2-7	Fly, 2 - 1/2"
	F2-8	Fly, 3"
23	NSS	Screw, 12-24 x 5/8" SEMS
24	B3-44	Permaglide Bearing, 7/16" ID
	B2-9*	Needle Bearing, 7/16" ID
25	S3-96	Seal, Internal 7/16" Shaft
	S3-19*	Seal, 7/16" Shaft
26	R1-52	Ring, Seal Retainer
	R1-11*	Ring, Seal Retainer
27	AL1-11-1	Throttle Stop Ass'y
28	NSS	Throttle Stop Lever
29	S2-15	Spring, Idle Stop
30	S1-12	Screw, Idle Stop 10-32 x 3/4"
31	S1-18	Pin, Screw Throttle Stop
32	AL1-12-3	Throttle Lever Ass'y, Long
33	NSS	Throttle Lever
34	S1-32	Screw, 1/4 - 20 x 7/8" Hex
35	G1-27*	Gasket, 2-1/2" Flange
	G1-28*	Gasket, 3" Flange



Note: During reassembly, the Diaphragm, Air Valve and Assembly must be installed with the Paper Gasket facing downward and the two slots in the center of the Air Valve installed at a 90 degree angle to the square boss. It is recommended that prior to disassembly of the Air Valve & Diaphragm Assembly, the individual parts be marked noting placement and orientation to ensure proper reassembly. Refer to IMPCO TSB-132 for additional information.

*Included in Repair Kit RK-200D-1

ASSEMBLIES & ACCESSORIES
MIXERS

PART #	DESCRIPTION
200DM-901	Mixer, Ass'y Turbo Cummins L10

THROTTLE BODIES

PART #	DESCRIPTION
AT2-7	Throat Assy, 2.5" SAE
AT2-8	Throat Assy, 3.0" SAE

THROTTLE SHAFT

PART #	DESCRIPTION
S5-4	Shaft 7/16" X 7.06

AIR-GAS VALVE ASSEMBLIES

PART #	DESCRIPTION
AV1-12	Air Gas Valve Ass'y, STD. Hydrin
AV1-12-3	Air Gas Valve Ass'y, STD. w/ Silicone
AV1-1245	Air Gas Valve Ass'y, STD. w/ Ball Check
AV1-1245-2	Air Gas Valve Ass'y, Feedback Silicone
CV1-12	Air Gas Valve Ass'y, Natural Gas Hydrin
CV1-12-2	Air Gas Valve Ass'y, Natural Gas Silicone
DG-AV1-12	Air Gas Valve Ass'y, Digester Gas Hydrin
DG-AV1-12-2	Air Gas Valve Ass'y, Digester Gas Silicone
LH-AV1-12-2	Air Gas Valve Ass'y, Low heat Gas Silicone

ADAPTERS

PART #	DESCRIPTION
E1-7	Air Horn, 45° elbow 4" Dia.
E1-8	Air Horn, 45° elbow 3.5" Dia.
E1-7-2	Air Horn, 45° elbow 4" Dia. (3) Balance Ports

LEVERS

PART #	DESCRIPTION
AL1-11-1	Stop Assembly, 7/16" mounting ID
AL1-12-1	Assembly, 3-1/16" long
AL1-12-3	Assembly, 2-5/16" long Std.

RETURN SPRINGS

PART #	DESCRIPTION
AS2-50-4	7/16" Throttle Return

RING SPACER

PART #	DESCRIPTION
R1-30	Ring, Air Valve Spacer

BRACKET ASSEMBLY

PART #	DESCRIPTION
AB4-4	Bracket, Throttle Cable/Boden (Used on 200D-7)

GASKETS

PART #	DESCRIPTION
G1-26	Air Horn to Mixer Body
G1-27	2.5" SAE Flange to Mixer
G1-28	3.0" SAE Flange to Mixer

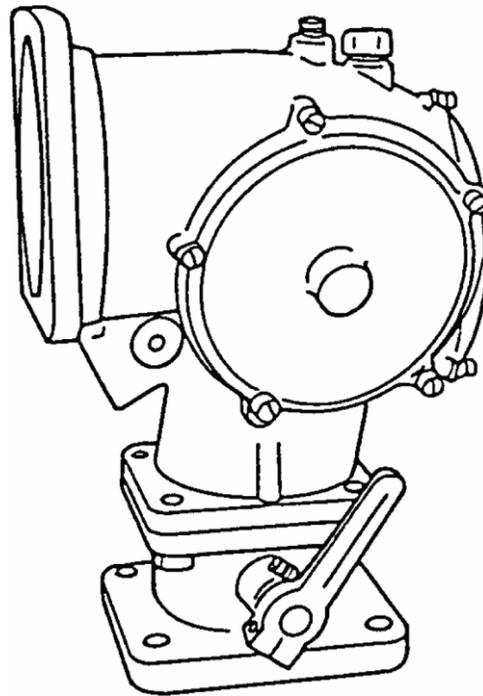
REPAIR KIT

PART #	DESCRIPTION
RK-200DM-887	Repair Kit, 200D
RK-200D-1	Repair Kit, 200D

TAMPER RESISTANT CAPS

PART #	DESCRIPTION
P3-17956-20	Cap/Plug

Model 200T



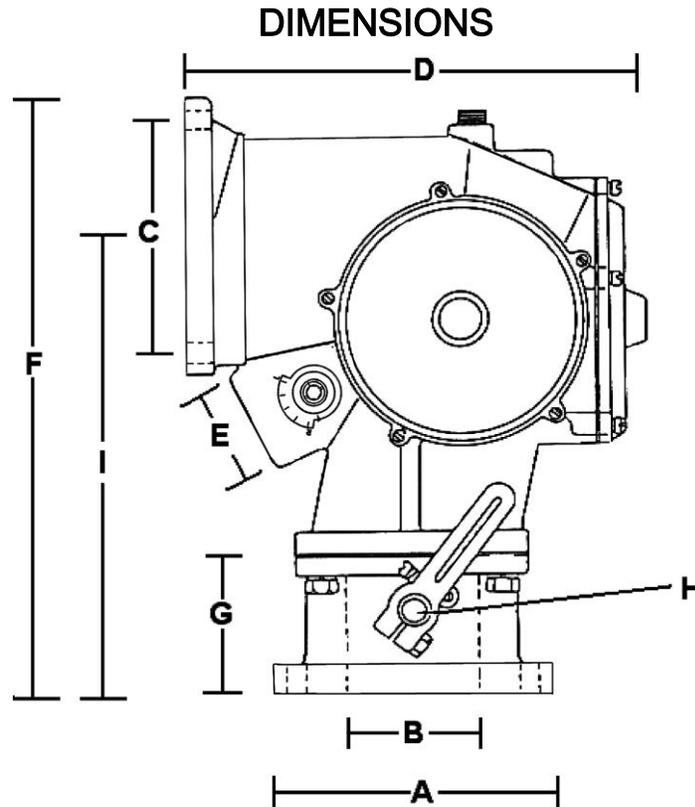
DESCRIPTION

The Model 200T is a triple diaphragm air-valve carburetor/mixer that offers a 90° air inlet to provide low overhead clearance, and is available with several air horn and throttle valve options. This unit is available for LPG Vapor, Natural Gas, and Digester Gas applications as low as 500 BTU with airflow requirements up to 680 CFM (320.9 L/s). All DG model mixers reduce airflow by 30%. The Model 200T is also available for feedback applications with the 'FB' designation.

The 200T mixer provides a convenient 1/4" balance port at the air inlet. Additional low speed idle mixture control can be obtained to lean air/fuel mixtures through the use of optional shims.

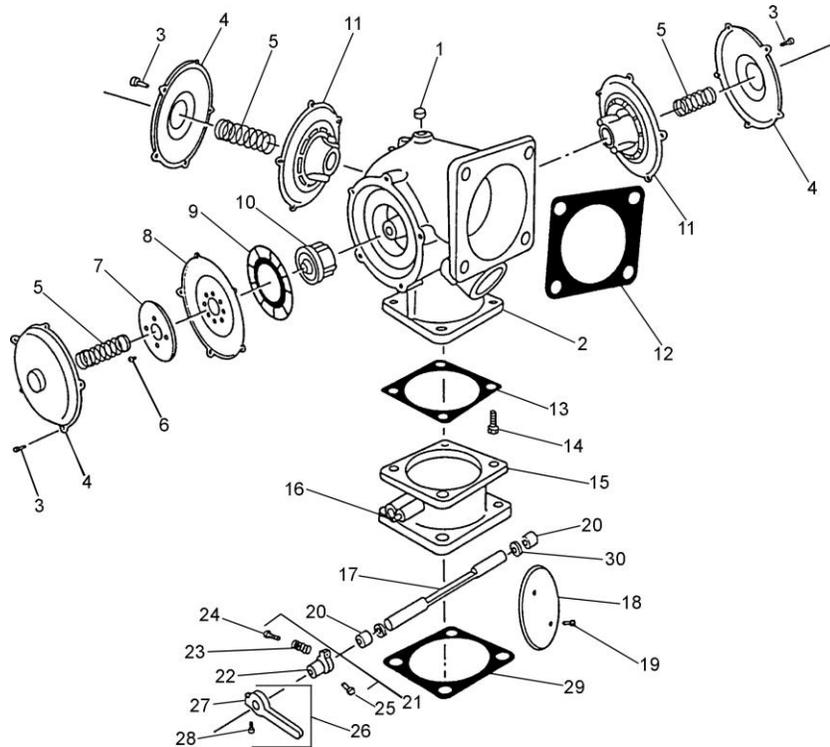
SPECIFICATIONS

Fuel Type	LPG Vapor, Natural Gas, or Digester/Landfill Gas (550 - 2,500 BTU)
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Rating	-40°C to 120°C (-40°F to 250°F)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	425 hp (316.9 kW) @ 680 CFM (320.9 L/s) and 2.0" Hg manifold depression



	A	B	C	D	E	F	G	H	I			
STD. CARB.	MIXER	THRTL. BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	MIXER AIR BORE	HORN DIA.	OVRAL. WIDTH	NPT INLET	OVRAL. HEIGHT	THRTL. BODY HEIGHT	THRTL. SHAFT DIA.	FLANG. TO CTR. OF AIR HORN
200T-1	200TM-1	AT2-9	3-1/2"	94.4 mm (3.72")	93.6 mm (3.69")	98.4 mm (3.88")	226.6 mm (9.0")	1-1/4"	279.4 mm (11.0")	66.6 mm (2.63")	12.7 mm (.50")	222.2 mm (8.75")
200T-1-2	200TM-1-2	AT2-9	3-1/2"	94.4 mm (3.72")	93.6 mm (3.69")	98.4 mm (3.88")	226.6 mm (9.0")	1-1/4"	279.4 mm (11.0")	66.6 mm (2.63")	12.7 mm (.50")	222.2 mm (8.75")
200T-3	200TM-1	AT2-10	4"	104.7 mm (4.13")	93.6 mm (3.69")	114.3 mm (4.50")	226.6 mm (9.0")	1-1/4"	304.8 mm (12.0")	69.8 mm (2.75")	12.7 mm (.50")	234.9mm (9.25")
200T-3-2	200TM-1	AT2-10	4"	104.7 mm (4.13")	93.6 mm (3.69")	114.3 mm (4.50")	226.6 mm (9.0")	1-1/4"	304.8 mm (12.0")	69.8 mm (2.75")	12.7 mm (.50")	234.9mm (9.25")

COMPONENTS



ITEM #	PART #	DESCRIPTION
1	NSS	Plug, 1/4" NPT
	AB1-14	Body Assy, 3 1/2"
2	AB1-14L	Body Assy, 3 1/2", Left Hand
	AB1-18	Body Assy 200T 4"
3	S1-3	Screw, 10-24 x 5/8" SEMS
4	C1-18	Cover
5	S2-17	Spring, Air Valve
6	S1-12	Screw, 8-32 x 5/16" SEMS
7	P2-21	Plate, Back up
8	D1-16-1	Diaphragm
	D1-16-2	Diaphragm, Silicone
9	R1-17	Ring, Air Valve
10	BV1-12	Air Gas Valve Ass'y
11	AV1-12*	Valve and Diaphragm Ass'y
12	G1-31	Gasket, 3-1/2" Air Horn
13	G1-30	Gasket, Throttle Body to Mixer
14	S1-34	Screw, 3/8 - 16 x 1" SEMS

ITEM #	PART #	DESCRIPTION
15	NSS	Throat
16	AV1-12	Pin, Throttle Stop
17	S5-5	Shaft, Throttle 1/2" (AT2-9)
	S5-4	Shaft, Throttle 7/16" (AT2-8)
18	F2-9	Fly, 3-11/16" Dia.
19	S1-35	Screw, 10-32 x 3/8" SEMS
20	B3-43	Permaglide Bearing, 1/2" ID
	B3-44	Permaglide Bearing, 7/16" ID
21	AL1-11-2	Throttle Stop Ass'y, 1/2" ID
22	NSS	Throttle Stop Lever, 1/2" ID
23	S2-15	Spring, Idle Stop Screw
24	S1-21	Stop, Screw 10-32 x 3/4"
25	S1-18	Pin, Screw Throttle Stop
26	AL1-12-1	Throttle Lever s/screw
27	NSS	Throttle Lever
28	S1-32	Screw, 1/4" -20 x 7/8" Hex
	G1-29	Gasket, 3-1/2" Flange
29	G1-38	Gasket, Flange SAE AT2-10
	G1-39	Gasket, Flange 4" Air Horn
30	S3-93	Seal, Internal 7/16" Shaft

Note: During reassembly, the Diaphragm, Air Valve and Assembly must be installed with the paper gasket facing downward and the two slots in the center of the Air Valve installed at a 90 degree angle to the square boss. It is recommended that prior to disassembly of the Air Valve & Diaphragm Assembly, the individual parts be marked noting placement and orientation to ensure proper reassembly. Refer to IMPCO TSB-132.

ASSEMBLIES & ACCESSORIES
MIXERS

PART #	DESCRIPTION
200T-1	Carb.3-1/2" SAE Flange R.H.
200T-1-2	Carb.3-1/2"SAE, W/Sil
200T-3	Carb 4"SAE Flg Rh Or Lh
200T-3-2	Carb 4" SAE W/Sil Diaphragm
200TM-1-2	Mixer,3-1/2" W/Silicone

THROTTLE BODIES

PART #	DESCRIPTION
AT2-9	3-1/2" SAE Flange, 7/16" Shaft w/ permglid.

AIR-GAS VALVE ASSEMBLIES

PART #	DESCRIPTION
AV1-12	Air Gas Valve Ass'y, STD. Hydrin
AV1-12-2	Air Gas Valve Ass'y, STD. w/ Silicone
AV1-12-3	Air Gas Valve Ass'y, STD. w/ Ball Check
AV1-1245	Air Gas Valve Ass'y, Feedback Hydrin
AV1-1245-2	Air Gas Valve Ass'y, Feedback Silicone
CV1-12	Air Gas Valve Ass'y, Natural Gas Hydrin
CV1-12-2	Air Gas Valve Ass'y, Natural Gas Silicone
LH-AV1-12-2	Air Gas Valve Ass'y, Low heat Gas Silicone

LEVERS

PART #	DESCRIPTION
AL1-11-1	Stop Assembly 7/16" mounting ID

RETURN SPRINGS

PART #	DESCRIPTION
AS2-50-4	7/16" Throttle Return

ADAPTERS

PART #	DESCRIPTION
E1-7	Air Horn, 45° elbow 4" Dia.
E1-8	Air Horn, 45° elbow 3-1/2" Dia.

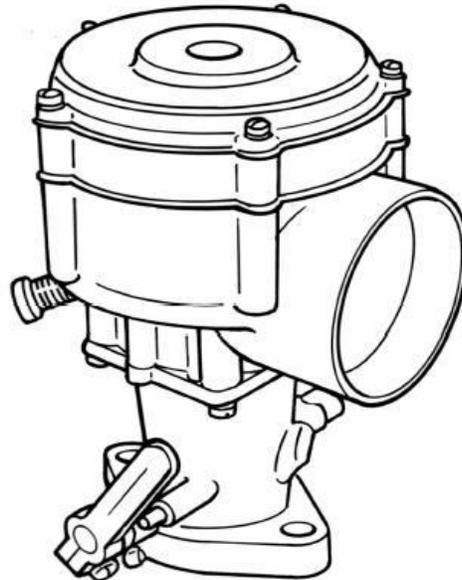
RING SPACER

PART #	THROTTLE BODIES
R1-30	Ring, Air Valve Spacer

TAMPER RESISTANT CAPS

PART #	DESCRIPTION
P3-17956-20	Cap/Plug

Model 210



DESCRIPTION

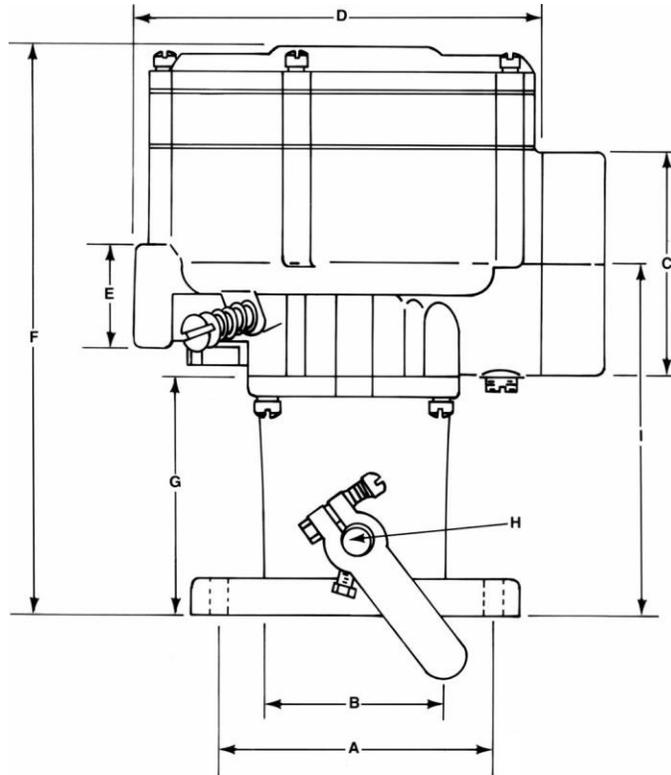
The Model 210 can be used with LPG Vapor or Natural Gas for applications with airflow requirements up to 345 CFM (162.8 L/s). The 210 carburetor/mixer is designed primarily for one and two cylinder engines where severe intake manifold pressure pulsations are present. However, its use is not limited to these applications. Improved mixture control and air-gas valve durability can also benefit other applications in tuned intake systems where resonant pressure changes could adversely affect a standard 200/225 model assembly.

Note that the diaphragm is different from the standard 200/225 model and may have to be ordered as a separate component part (see dashpot assembly on page 83).

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	215 hp(160.3 kW) @ 345 CFM (162.8 L/s) with 2.0" Hg manifold depression

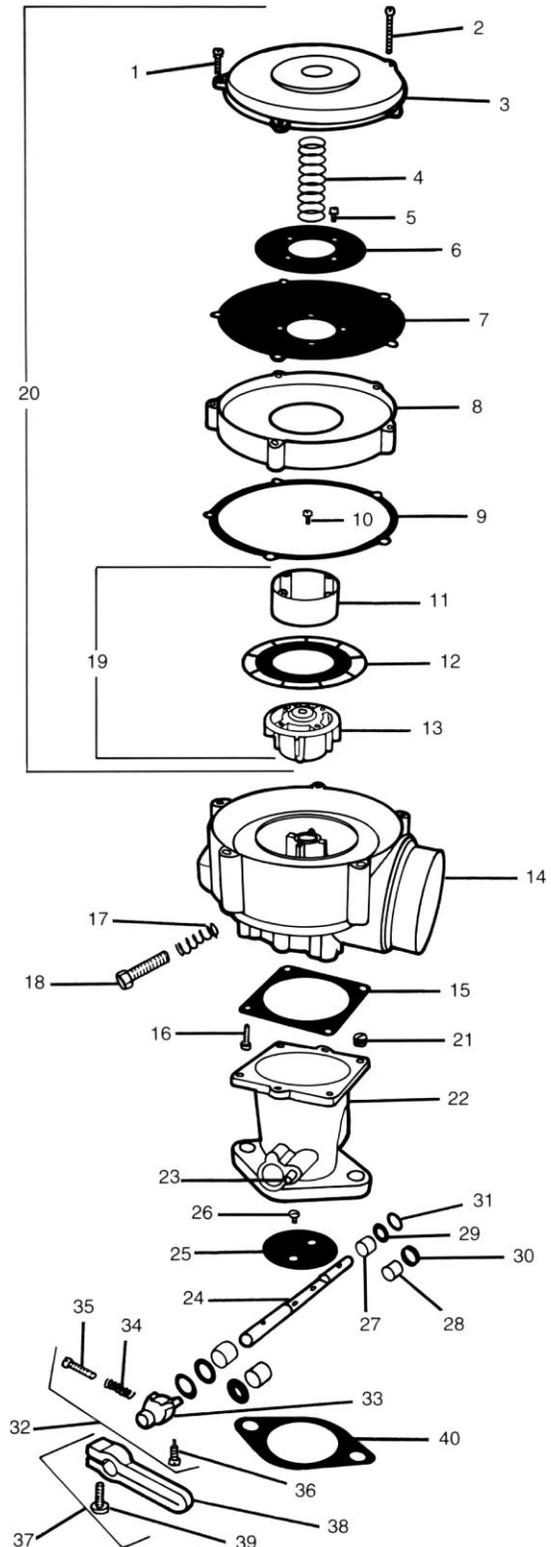
DIMENSIONS



STD. CARB.	MIXER	THRTL. BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	MIXER			NPT INLET	OVRAL. HEIGHT	THRTL. BODY HEIGHT	THRTL. SHAFT DIA.	FLANG. TO CTR. OF AIR HORN
					BORE	HORN DIA.	OVRAL. WIDTH					
210-4	210M-1	AT2-5	1-3/4"	84.1 mm (3.31")	49.2 mm (1.94")	66.7 mm (2.63")	165 mm (6.50")	3/4"	206 mm (8.13")	82.6m (3.250")	9.5 mm (.38")	123 mm (4.84")
210-6	210M-2	AT2-6	2"	90.5 mm (3.56")	55.6 mm (2.19")	77.8 mm (3.06")	165 mm (6.50")	3/4"	206 mm (8.13")	82.6m (3.25")	9.5 mm (.38")	123 mm (4.84")
210-8	210M-2	AT2-5	1-3/4"	84.1 mm (3.31")	49.2 mm (1.94")	77.8 mm (3.06")	165 mm (6.50")	3/4"	206 mm (8.13")	82.6m (3.25")	9.5 mm (.38")	123 mm (4.84")
210-8-2	210M-2-2	AT2-5	1-3/4"	84.1 mm (3.31")	49.2 mm (1.94")	77.8 mm (3.06")	165 mm (6.50")	3/4"	206 mm (8.13")	82.6m (3.25")	9.5 mm (.38")	123 mm (4.84")

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	S1-3	Screw, 10-24 x 5/8" SEMS (2)
2	S1-41	Screw, 10-24 x 1-3/8" SEMS (3)
3	NSS	Cover
4	S2-17	Spring, air valve
5	S1-12	Screw, 8-32 x 5/16" SEMS (4)
6	P2-13	Plate, backup
7	D1-12	Diaphragm
	D1-12-2	Diaphragm, silicone
8	NSS	Plate, divider
9	G1-20	Gasket, plate to body
10	S1-12	Screw, 8-32 x 5/16" SEMS (4)
11	NSS	Spacer
12	R1-17	Ring, air valve
13	BV1-12	Valve ass'y
14	AB1-11-2	Body ass'y, 77.8 mm (3.06") Air Horn
15	G1-21	Gasket, throttle body to mixer
16	S1-19	Screw, 12-24 x 5/8" SEMS (4)
17	S2-16	Spring, idle screw
18	NSS	Idle screw
19	AS3-21	Valve & spacer ass'y
20	A210-DP	Dash Pot Ass'y
	A210-DP-2	Dash Pot Ass'y, Silicone
21	NSS	Plug, 1/8 NPT
22	NSS	(Refer to Throttle body charts)
23	NSS	Pin, throttle stop (5)
24	S5-2	Throttle shaft, 7.9 mm (0.31") dia.
	S5-3	Throttle shaft, 9.5 mm (0.38") dia.
25	NSS	Butterfly, 38.1 mm (1.50")
	NSS	Butterfly, 44.5 mm (1.75")
	NSS	Butterfly, 50.8 mm (2.00")
26	S1-12	Screw, 8-32 x 5/16" SEMS (2)
27	NSS	Bearing, Oilite, 7.9 mm (0.31") I.D. (2)
	B2-13	Bearing, Oilite, 9.5 mm (0.38") I.D. (2)
28	B2-7	Bearing, needle, 7.9 mm (0.31") I.D. (2), opt.
29	NSS	Seal, 7.9 mm (0.31") shaft (2)
	S3-11	Seal, 9.5 mm (0.38") shaft (2)
30	S3-20	Seal, internal, 9.5 mm (0.38") I.D., optional
31	R1-9	Ring, seal retainer, 7.9 mm (0.31") shaft (2)
	R1-8	Ring, seal retainer, 9.5 mm (0.38") shaft (2)
32	AL1-8-2	Throttle stop ass'y, 7.9 mm (0.31")
	AL1-10	Throttle stop ass'y, 9.5 mm (0.38")
33	NSS	Throttle stop lever
34	S2-15	Spring, stop screw
35	S1-21	Stop screw, 10-32 x 3/4"
36	S1-18	Pin screw, throttle stop
37	AL1-7-1	Throttle lever, w/ S1-17, L1-7-1
	AL1-9-1	Throttle lever, w/ S1-26, L1-9-1
	AL1-9-1A	Throttle Lever 58.7 mm (2.31") long, 0.562"mtg ID
38	NSS	Throttle lever
39	NSS	Screw, 10-24 x 5/8"
	NSS	Screw, 12-24 x 5/8"
40	G1-19	Gasket, 38.1 mm (1.50") flange
	G1-23	Gasket, 44.5 mm (1.75") flange
	G1-24	Gasket, 50.8 mm (2.00") flange



ASSEMBLIES & ACCESSORIES

MIXERS

PART #	DESCRIPTION
210M-2	77.8 mm (3.06") Air Horn
210M-2-2	77.8 mm (3.06") Air Horn, w/ silicone

THROTTLE BODIES

PART #	DESCRIPTION
AT2-4-2	Standard, 38.1 mm (1.50") flange, 7.9 mm
AT2-5	Standard, 44.5 mm (1.75") flange, 9.5 mm
AT2-6	Standard, 50.8 mm (2.00") flange, 9.5 mm
AT2-6-3	50.8 mm (2.00") flange, 9.5 mm (0.38") shaft
AT2-11-1	Standard, 31.8 mm (1.25") flange, 11.1 mm
AT2-12	Standard, 38.1 mm (1.50") flange, 11.1
AT2-13-1	Standard, Holley, 11.1 mm (0.44") shaft

THROTTLE SHAFTS

PART #	DESCRIPTION
S5-2	7.9 mm (0.31") dia., 127 mm (5.00") long,
S5-3	9.5 mm (0.38") dia., 138 mm (5.44") long,
S5-7	7.9 mm (0.31") dia., 133 mm (5.25") long
S5-11	7.9 mm (0.31") dia., 156 mm (6.13") long

DASHPOT ASSEMBLIES

PART #	DESCRIPTION
A210-DP	For Model 210 Mixer
A210-DP-2	For Model 210 Mixer, w/silicone diaphragm

SPACERS

PART #	DESCRIPTION
AS3-45	Spacer ass'y, 20.6 mm (0.81") high

GASKETS

PART #	DESCRIPTION
G1-47	Gasket, Flange 2B Holley T2-13

LEVERS

PART #	DESCRIPTION
AL1-7-1	Ass'y, 44.5 mm (1.75") long (std. on AT2-3, AT2-4-1, AT2-4-3, AT2-16-1)
AL1-7-2	Ass'y, w/ 6.4 mm (0.25") ball stud, 44.5 mm (1.75") long
AL1-7-3	Ass'y, 33.3 mm (1.31") long
AL1-7-4	Ass'y, w/ swivel, 44.5 mm (1.75") long
AL1-8-2	Stop ass'y, 7.9 mm (0.31") mounting I.D., 19.1 mm (0.75") long
AL1-9-1	58.7 mm (2.31") long (standard on AT2-5, AT2-6)
AL1-9-1A	58.7 mm (2.31") long, 0.562" mounting ID
AL1-10	Lever stop ass'y, 9.5 mm (0.38") mounting I.D., 22.2 mm (0.88") long, standard on AT2-5, AT2-6
AL1-33	Ass'y, shaft clamp, 7.9 mm (0.31") mounting I.D., 49.2 mm (1.94") long

NOTES:

AL1-7-1 through AL1-7-4 levers used w/ AL1-8 lever stop.

AL1-9 levers used w/ AL1-10 lever stop.

See Small Parts & Accessories section of catalog for other optional levers.

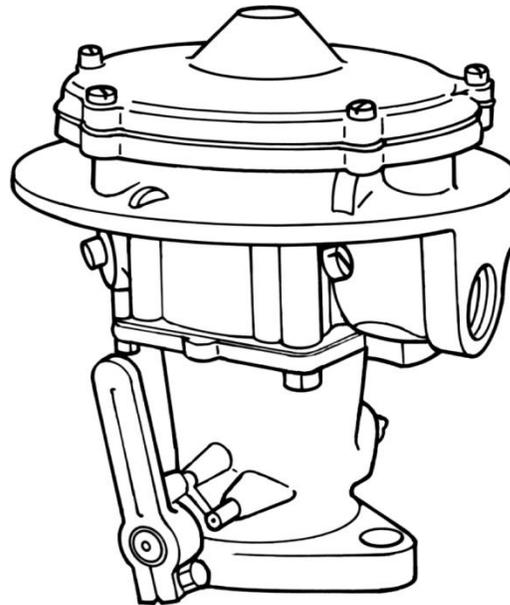
ADAPTERS

PART #	DESCRIPTION
A3-28	200M to 3-1/16" hose
A3-30	200M to 2-5/8" hose
AA3-19	225M to Holley 2B throttle body
AA3-32-2	200M to CA100 throttle body
AA3-47-2	200M to CA425 throttle body
AA3-48-2	200M to CA425 hose elbow

RETURN SPRINGS

PART #	DESCRIPTION
AS2-50-2	7.9 mm (0.31") throttle return
AS2-50-3	9.5 mm (0.38") throttle return

Model 225



DESCRIPTION

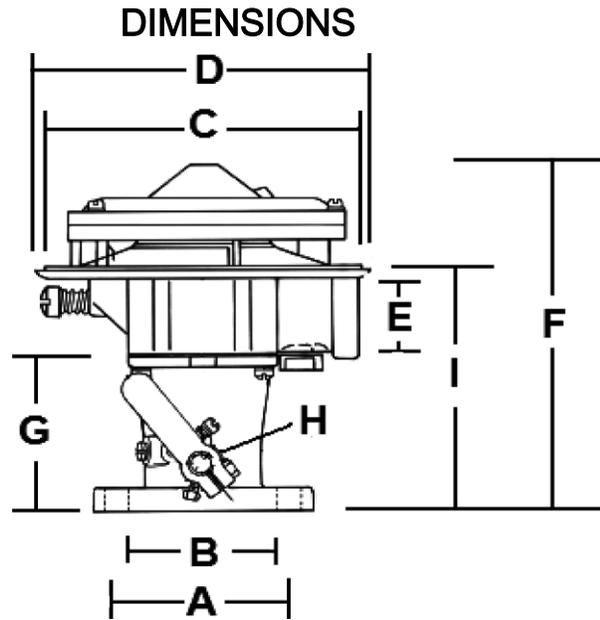
The Model 225 carburetor is a single-diaphragm air valve carburetor/mixer. It offers a down-draft air inlet that can be used for remote air filtration or open-element type air filters. This unit is available for LPG Vapor or Natural Gas applications with airflow requirements up to 380 CFM (179.3 L/s).

The Model 225 is also available for feedback applications with the 'FB' designation. Note: All DG model mixers reduce airflow by 30%.

Two separate air valve vacuum supplies are available with this mixer. Additional low speed mixture control can be obtained to lean air/fuel mixtures with optional ring spacers/shims. Check the Accessories section for more information.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	-1.5" w.c. (-0.37 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	205 hp (153.0 kW) @ 329 CFM (155 L/s) and 1.5" Hg manifold depression
	237 hp (176.7 kW) @ 380 CFM (179.3 L/s) and 2.0" Hg manifold depression

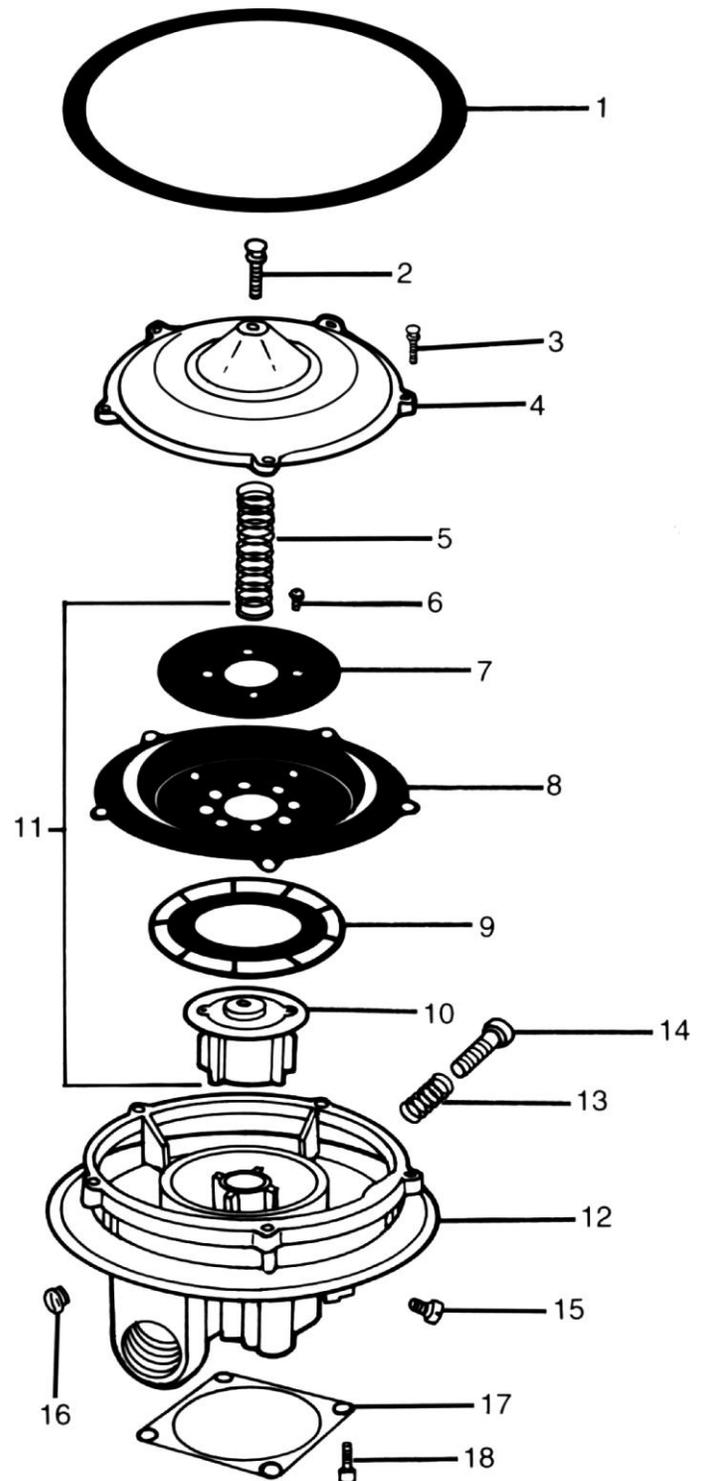


CARB	THRTL. BODY	SAE FLANGE	CTR. TO CTR. BOLT SPACING	BORE	MIXER		NPT INLET	OVRAL. HEIGHT	THRTL. BODY HEIGHT	THRTL. SHAFT DIA.	FLANG. TO CTR. OF AIR HORN
					AIR HORN DIA.	OVRAL. WIDTH					
225-94	AT2-6	2"	60.45mm (2.38")	55.6mm (2.188")	N/A	159 mm (6.250")	3/4"	184 mm (7.250")	69.9mm (2.750")	7.9 mm (.313")	114 mm (4.500")
225-94-2	AT2-6	2"	60.45mm (2.38")	55.6mm (2.188")	148 mm (1.688")	159 mm (6.250")	3/4"	191 mm (7.500")	82.6m (3.250")	9.5 mm (.375")	127 mm (5.000")
CA225-94	AT2-6	2"	60.45mm (2.38")	55.6mm (2.188")	148 mm (1.688")	159 mm (6.250")	3/4"	191 mm (7.500")	82.6m (3.250")	9.5 mm (.375")	127 mm (5.000")

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	G1-73	Gasket, mixer to Air Horn
2	S1-47	Screw, 1/4" -20 x 1" SEMS
3	S1-3	Screw, 10 -24 x 5/8" SEMS (5)
4	NSS	Cover, air valve
5	S2-17	Spring, air valve
6	S1-12	Screw, 8-32 x 5/16" SEMS (4)
7	P2-21	Plate, backup
8	D1-16-1	Diaphragm
	D1-16-2	Diaphragm, Silicone
9	R1-17	Ring, air valve
10	BV1-12	Air-gas valve ass'y, LPG
	DV1-12	Air-gas valve ass'y, NG
		Air-gas valve ass'y, complete w/
11	AV1-12	diaphragm, LPG
		Air-gas valve ass'y, complete w/
	CV1-12	diaphragm, NG
12	NSS	Body ass'y
13	S2-16	Spring, idle screw
14	NSS	Idle screw
15	S1-69	Screw, 1/4" -28 x 5/16" (3)
16	NSS	Plug, 1/8 NPT, brass
17	G1-21	Gasket, throttle body to mixer
18	S1-19	Screw, 12-24 x 5/8" SEMS

NSS = Not Serviced Separately



ASSEMBLIES & ACCESSORIES

MIXERS

PART #	DESCRIPTION
225M-2	For NG, w/silicone diaphragm
FB225M-2	For feedback, w/ silicone diaphragm
FB225M-F6T49	Mixer assembly, Model 225 Tamper Rest For Ford QVM
CA225M	For LPG
CA225M-2	Use CA225M-3-2 Instead
FB225M-2TP	Feedback Mix w/Sil Diaphragm Tamper Resistant

THROTTLE BODIES (ONE BARREL)

PART #	DESCRIPTION
AT2-4-2	Standard, 38.1 mm (1.50") flange, 7.9 mm (0.31") shaft dia.
AT2-5	Standard, 44.5 mm (1.75") flange, 9.5 mm (0.38") shaft dia.
AT2-6	Standard, 50.8 mm (2.00") flange, 9.5 mm (0.38") shaft dia., center bore
AT2-6-3	50.8 mm (2.00") flange, 9.5 mm (0.38") shaft dia., center bore, w/ needle bearings & internal seal

* All throttle bodies are offset 8.8 mm (0.031") unless otherwise noted.

THROTTLE BODIES (TWO BARREL)

PART #	DESCRIPTION
AB1-24-1	Body Assy 2B Throttle

ACCESSORIES

PART #	DESCRIPTION
VCS	Valve, Solenoid Vacuum Lift

ADAPTERS

PART #	DESCRIPTION
A2-55	Adapter, Air Cleaner Base 225M

ADAPTERS

PART #	DESCRIPTION
A2-2	Air Horn, 130 mm (5.13") dia.
A2-3	Air Horn, 66.7 mm (2.63") dia.
A2-6	Air Horn, 77.8 mm (3.06") dia.
AA3-19	200M to Holley 2B throttle body
A3-28	200M to 3-1/16" hose
A3-30	200M to 2-5/8" hose
AA3-32-2	200M to CA100 throttle body
AA3-47-2	200M to CA425 throttle body
AA3-48-2	200M to CA425 hose elbow
A3-124-2	Adapter 125 Solex TB Modified
AA2-21	Adapt Air Horn 90° by 4" to 225

ASSEMBLIES & ACCESSORIES (CONTINUED)

LEVERS

PART #	DESCRIPTION
AL1-7-1	Ass'y 44.5 mm (1.75") long (std. on AT2-3, AT2-4-1, AT2 4-3, AT2-16-1)
AL1-7-2	Ass'y, w/ 64 mm (0.25") ball stud, 44.5 mm (1.75") long
AL1-7-3	Ass'y 33.3 mm (1.31") long (std. on AT2-1, AT2-2, AT2-23)
AL1-7-4	Ass'y, w/ swivel, 44.5 mm (1.75") long
AL1-8-2	Stop ass'y, 7.9 mm (0.31") mounting I.D., 19.1 mm (0.75") long (std. on AT-3, AT2-4-1, AT2-4-3, AT2-16-1, AT2-23)
AL1-9-1	58.7 mm (2.31") long (standard on AT2-5, AT2-6)
AL1-9-1A	58.7 mm (2.31") long, 0.562" mounting ID
AL1-9-2	Lever 200 w/Swivel
AL1-10	Lever stop ass'y, 9.5 mm (0.38") mounting I.D., 22.2 mm (0.88") long, standard on AT2-5, AT2-6
AL1-11-1	Lever stop ass'y, 11.1 mm (0.44") mounting I.D., 25.4 mm (1.00") long, standard on AT2-11-1, AT2-12, AT2-13-1, AT2-15
AL1-12-1	77.8 mm (3.06") long
AL1-12-3	58.7 mm (2.31") long, standard on AT2-11-1, AT2-12, AT2-13-1, AT2-15
AL1-27-1	Ass'y, floating 7.9 mm (0.31") mounting I.D., 54.0 mm (2.13") long, w/ AC2-12
AL1-33	Ass'y, shaft clamp, 7.9 mm (0.31") mounting I.D., 49.2mm (1.94") long
AL1-46	Ass'y, steel shaft clamp, 7.9 mm (0.31") mounting I.D., 47.6 mm (1.88") long

NOTES:

AL1-7-1 through AL1-7-4 levers used w/ AL1-8 lever stop.

AL1-9 levers used w/ AL1-10 lever stop.

AL1-12 levers used w/ AL1-11 lever stop.

See Accessories section of catalog for other optional levers.

ASSEMBLIES & ACCESSORIES (CONTINUED)
AIR-GAS VALVES

PART #	DESCRIPTION
AV1-12	Standard, w/Hydrin diaphragm
AV1-12-2	Standard, w/Silicone diaphragm
AV1-12-3	For 1 & 2 cylinder engines, w/Hydrin diaphragm & ball check ass'y
AV1-12-3-2	For 1 & 2 cylinder engines, w/Silicone diaphragm & ball check ass'y
AV1-12-6	Rich, w/Hydrin diaphragm
AV1-1245	Standard feedback, w/Hydrin diaphragm
AV1-1245-2	Standard feedback, w/Silicone diaphragm
DG-AV1-12	For digester gas (550-750 BTU), w/Hydrin diaphragm
DG-AV1-12-2	For digester gas (550-750 BTU), w/Silicone diaphragm
LH-AV1-12-2	For low heat gas (750-950 BTU), w/Silicone diaphragm
CV1-12	For natural gas, w/Hydrin diaphragm
CV1-12-2	For natural gas, w/Silicone diaphragm

RETURN SPRINGS

PART #	DESCRIPTION
AS2-50-2	7.9 mm (0.31") throttle return
AS2-50-3	9.5 mm (0.38") throttle return
AS2-50-4	11.1 mm (0.44") throttle return

Note: All DG model mixers reduce airflow by 30%.

SPACERS

PART #	DESCRIPTION
AS3-45	Spacer ass'y, 20.6 mm (0.81") high

RING SPACERS

PART #	DESCRIPTION
R1-30	Ring, air valve spacer, for AV1-12 (to lean mixture)

AIR CLEANERS

PART #	DESCRIPTION
AF1-17-2	Offset, 260 L/s (550 cfm), 356 mm (14.00") O.D., 106 mm (4.19") high

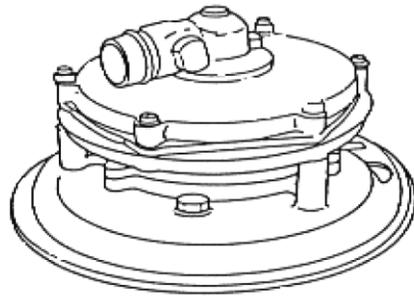
GASKETS

PART #	DESCRIPTION
G1-51	Gasket, H.L. Governor for AA3-19

BEARING, T/B SHAFT

PART #	DESCRIPTION
B2-14	Bearing, T/B Shaft

Model 300A



300A Mixer Without Air Cleaner



Mixer With 10" Air Cleaner



Mixer With 14" Air Cleaner

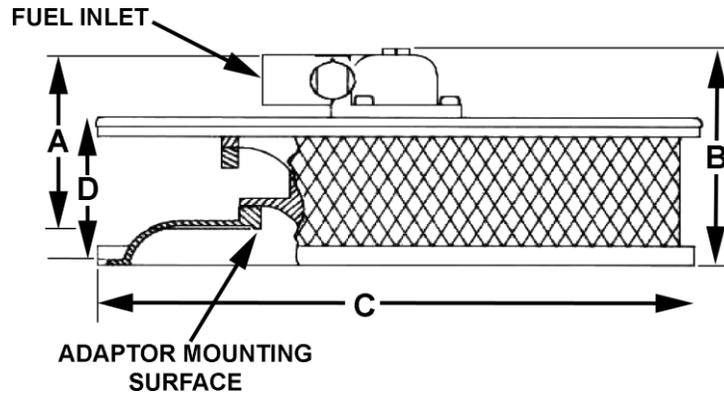
DESCRIPTION

The Model 300A mixer is a single-diaphragm air valve for applications. It offers a down-draft air inlet that can be used for remote air filtration or open-element type air filters. This unit is available for LPG Vapor and Natural Gas applications with airflow requirements up to 348 CFM (164 L/s) or 432 CFM (204 L/s) depending on the part number. The 300A has numerous adapters to allow the installer to fit the 300A into most under hood vehicle applications.

The Model 300A is also available for feedback applications with the 'FB' designation. The 300A can also be equipped with a cam mechanism to allow the air valve to be raised to its full open position to minimize any restriction in the base vehicle air stream. Optional air cleaner assemblies are also available for engines which require higher CFM airflow.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/(kW) Rating(1 & 20)	217 hp (161.8 kW) @ 348 CFM (164 L/s) and 1.5" Hg manifold depression
HP/(kW) Rating (50 & 70)	270 hp (201.3 kW) @ 432 CFM (204 L/s) and 1.5" Hg manifold depression
Certification	UL (AU2317), Inquire for specific ECE approval

DIMENSIONS


A	B	C	D
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MIXER	MOUNTING SURFACE TO TOP OF FUEL INLET	OVERALL HEIGHT	MIXER ONLY OVERALL WIDTH	AIR CLEANER HEIGHT	GAS VALVE	DIAPHRAGM (BLACK HYDRIN S-SILICONE)	BODEN CABLE INCLUDED	CAM
CA300A-M-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-11	S	Y	Y
CA300A-M-3	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-11	B	N	Y
CA300A-M-3-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-11	S	N	Y
CA300A-M-4-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-11	S	N	N
CA300AM-50-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-39	S	Y	Y
CA300AM-50-3	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-39	S	N	Y
CA300AM-50-4	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-39	S	N	N
FB300A-M-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-49	S	Y	Y
FB300A-M-4-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-49	S	N	N
FB300AM-50-2	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-50	S	Y	Y
FB300AM-50-4	88.9 mm (3.5")	104.7 mm (4.125")	206.3 mm (8.125")	69.8 mm (2.75")	V2-50	S	Y	N

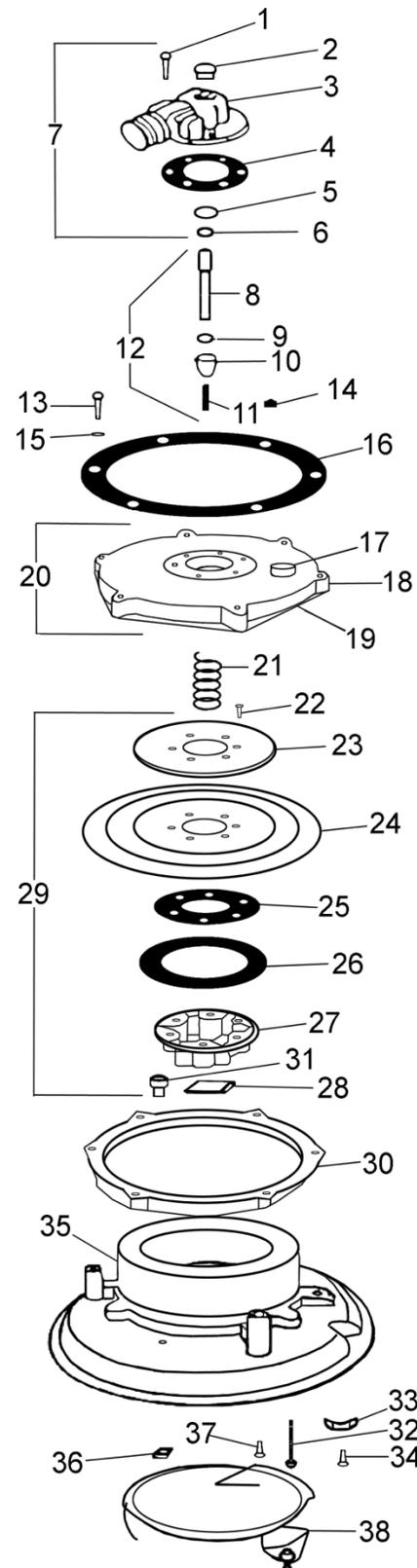
COMPONENTS - MODEL 300A 1 AND 50

ITEM	PART #	DESCRIPTION
1	S1-3	† Screw, 10-24 x 5/8" SEMS (3)
2	P3-2	Plug, idle adjustment
3	AE1-4	Elbow with power adjustment: E1-4, V2-9, W1-12
4	NSS	*† Gasket, gas elbow
5	R1-9	*† Ring, seal retainer
6	NSS	*† Seal, idle screw
7	BE1-4-1	Elbow ass'y, complete: P3-2, AE1-4, R1-9, S3-3
8	S1-15	Screw, idle adjustment
9	NSS	† Seat, gas valve
	NSS	Valve Gas Mixer, 300A Series
10	V2-49	Valve Gas Mixer FB300A
	V2-50	Valve Gas Mixer FB300A
11	NSS	Spring, gas valve
12	NSS	† Gas valve ass'y, complete
	NSS	Gas valve ass'y, complete
13	NSS	† Screw 10-24 x 1" (3)
14	NSS	† Nut, dome 10-24 (3)
15	NSS	† Washer, No.10 light flat (6)
16	NSS	*† Gasket, filter cover
17	NSS	† Rivet, vent valve
18	NSS	† Valve cover vent
19	NSS	Cover, diaphragm
20	NSS	Cover ass'y., diaphragm with vent valve
	NSS	† Cover ass'y., diaphragm with vent valve
21	S2-2	† Spring, air valve
22	S1-12	Screw, 8-32 x 5/16" SEMS (6)
23	P2-1	Plate, diaphragm backup
24	NSS	* Diaphragm, air valve
	NSS	* Diaphragm, air valve, silicone
25	NSS	* Gasket, air valve
26	R1-2	Ring, air valve
27	NSS	Valve, air metering: V1-10, L1-3, B3-24
28	NSS	* Lock, nylon idle adjustment
29	NSS	† Air valve ass'y, w/diaphragm
	NSS	† Air valve Assy, Silicone, w/diaphragm
30	NSS	Ring, diaphragm support
31	S1-5	Screw, 1/4"-20 x 5/8" hex head SEMS (3)
32	NSS	† Screw, 10-24 x 1-1/2" SEMS (3)
33	NSS	Clamp, Boden wire
34	NSS	Screw, 10-32 x 5/8" hex head
35	NSS	Base ass'y, complete
36	NSS	Nut, square, 1/4"-20
37	S1-69	Screw, 1/4"x 5/16" (plug)
38	AC2-2	Cam ass'y: C2-2, W1-2, S1-7

NSS = NOT SERVICED SEPARATELY

* Indicates components of minor repair kit.

† Indicates components of major repair kit.



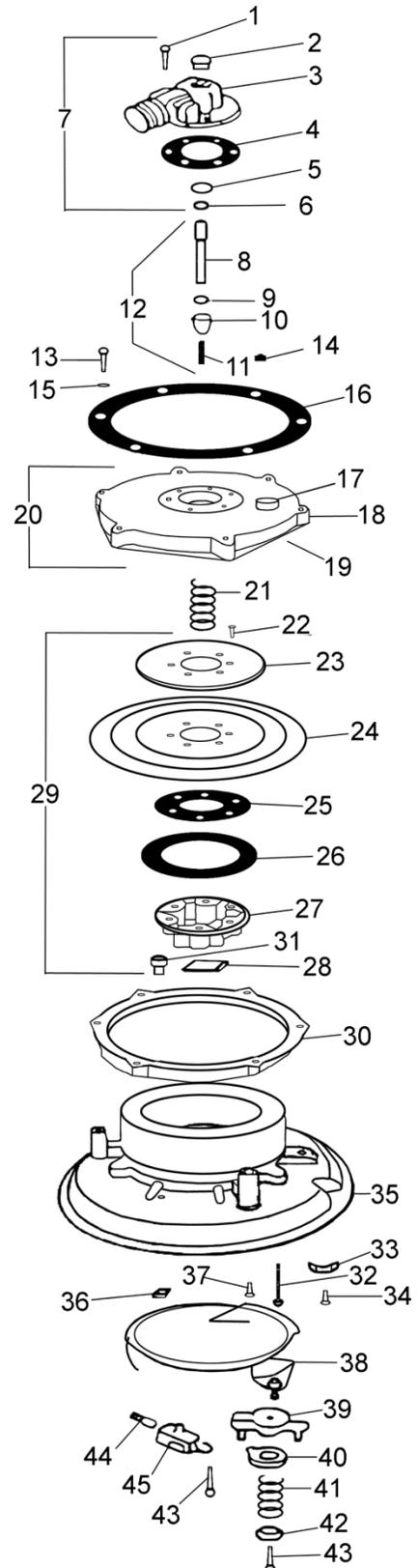
COMPONENTS - MODEL 300A 20 AND 70

Item #	Part #	Description
1	S1-3	† Screw, 10-24 x 5/8" SEMS (3)
2	P3-2	Plug, idle adjustment
3	AE1-4	Elbow with power adjustment
4	NSS	*† Gasket, gas elbow
5	R1-9	*† Ring, seal retainer
6	NSS	*† Seal, idle screw
7	BE1-4-1	Elbow ass'y, complete: P3-2, AE1-4, R1-9, S3-3
8	S1-15	Screw, idle adjustment
9	NSS	† Seat, gas valve
10	V2-49	Valve, gas metering
10	V2-50	Valve, gas metering
11	NSS	Spring, gas valve
12	NSS	† Gas valve ass'y, complete
12	NSS	Gas valve ass'y, complete
13	NSS	† Screw 10-24 x 1" (3)
14	NSS	† Nut, dome 10-24 (3)
15	NSS	† Washer, No.10 light flat (6)
16	NSS	*† Gasket, filter cover
17	NSS	† Rivet, vent valve
18	NSS	† Valve cover vent
19	NSS	Cover, diaphragm
20	NSS	Cover ass'y, diaphragm with vent valve
21	S2-2	† Spring, air valve
22	S1-12	Screw, 8-32 x 5/16" SEMS (6)
23	P2-1	Plate, diaphragm backup
24	NSS	* Diaphragm, air valve
24	NSS	* Diaphragm, air valve, silicone
25	NSS	* Gasket, air valve
26	R1-2	Ring, air valve
27	NSS	Valve, air metering: V1-10, L1-3, B3-24
28	NSS	* Lock, nylon idle adjustment
29	NSS	AV1-10-1† Air valve ass'y, complete with diaphragm
29	S1-5	AV1-10-2† Air valve ass'y, complete with diaphragm
30	NSS	Ring, diaphragm support
31	NSS	Screw, 1/4"-20 x 5/8" hex head SEMS (3)
32	NSS	† Screw, 10-24 x 1-1/2" SEMS (3)
33	NSS	Clamp, Boden wire
34	NSS	Screw, 10-32 x 5/8" hex head
35	S1-69	Base ass'y, complete
36	AC2-2	Nut, square, 1/4"-20
37	NSS	Screw, 1/4"x 5/16" (plug)
38	NSS	Cam ass'y: C2-2, W1-2, S1-7
39	NSS	Body vacuum valve: B1-41, P1-20
40	NSS	Valve, rotary
41	NSS	Spring, vacuum valve
42	NSS	Cap, vacuum valve
43	NSS	Screw, 4-40 x 3/4" (3)
44	NSS	Connector, wire (2)
45	NSS	Switch, gasoline

NSS = NOT SERVICED SEPARATELY

* Indicates components of minor repair kit.

† Indicates components of major repair kit.





ASSEMBLIES & ACCESSORIES

ADAPTERS

PART #	DESCRIPTION
A1-4	Adapter, CA300A, mixer to 2-5/8" Air Horn, center stud
A1-50-2	Adapter, CA300A
A1-6	Adapter, CA300A, mixer to 3-1/16" Air Horn, center stud
A1-63	Adapter, CA300 Machined
AA1-40	Adapter, CA300 2 5/8" w/ Clamp Nuts
AA1-50-5	Adapter, Assy CA300/CA425
AA3-75	Adapter, CA300A & CA425M
A3-96	Adapter, CA300 Holley 4B
A1-16-1	Adapter, CA300, 5-1/8" Center Stud
A1-16-2	Adapter, CA300, 1/2" Shorter than A1-16-1
A1-54	Adapter, 3-1/8" Air Horn
A1-55	Adapter, 2-5/8" Air Horn
A1-56	Adapter, 2- 5/16" Air Horn
A1-62	Adapter, 5-1/8" Air Horn
AA1-57	Adapter, Assy Hood
AA1-67	Adapter, Assy 175A to Hose

CABLES

PART #	DESCRIPTION
C2-32	Cable, Boden Wire 300A Series
C2-1	Clamp, Boden Cable

FILTERS

PART #	DESCRIPTION
AF1-1	Filter Assy (C1-4 Cover & F1-1 Filter) 350 CFM
F1-1	Filter Element, CA300A, 350 CFM
C1-4	Cover, CA300A 350 CFM
C1-40	Cover, Air Filter, 500 CFM
F1-9	Air Filter Element, 500 CFM

ADAPTERS

PART #	DESCRIPTION
A2-73	Adapt 1/2" Spacer Adapter 5" ID
A1-50-2	Adapter, CA300A

MIXERS

PART #	DESCRIPTION
CA300A-M-2	Mixer only, w/O Filter w/ Boden Wire, Silicone
CA300A-M-3	Mixer, w/O Fitting, Filter, Cable,
CA300A-M-3-2	Mixer, Silicone, w/O cable, & Filter Fitting.
CA300A-M-4-2	Mixer w/O C2-32, AC2-2 Silicone
CA300AM-50-2	Mixer only, w/O Filter, w/ AC2-2
CA300AM-50-3	Mixer only, w/O Filter, C2-32
CA300AM-50-4	Mixer Ass'y, w/O Cable & Cam
FB300A-M-2	Mixer Ass'y, w/ FB. Air Valve
FB300A-M-4-2	Feedback Mixer w/ C2-32
FB300AM-50-2	Mixer Ass'y Feedback, w/O Filter
FB300AM-50-4	Mixer Ass'y, w/O Filter, & Cam Cable

AIR VALVE ASSY

PART #	DESCRIPTION
AV2-50	Gas Valve Ass'y, Complete

REPAIR KITS

PART #	DESCRIPTION
RK300MA-1/20	Major Repair Kit for Standard or -20 models with Hydrin Diaphragm
RK300MA-1/20-2	Major Repair Kit for Standard or -20 models with Silicone Diaphragm
RK300MA-50/70-2	Major Repair Kit for -50 or -70 models with Silicone Diaphragm
RK300MI-1/20-2	Minor Repair Kit Minor for -20 models with Silicone Diaphragm
RK300MI-50/70-2	Minor Repair Kit for -50 or -70 models with Silicone Diaphragm

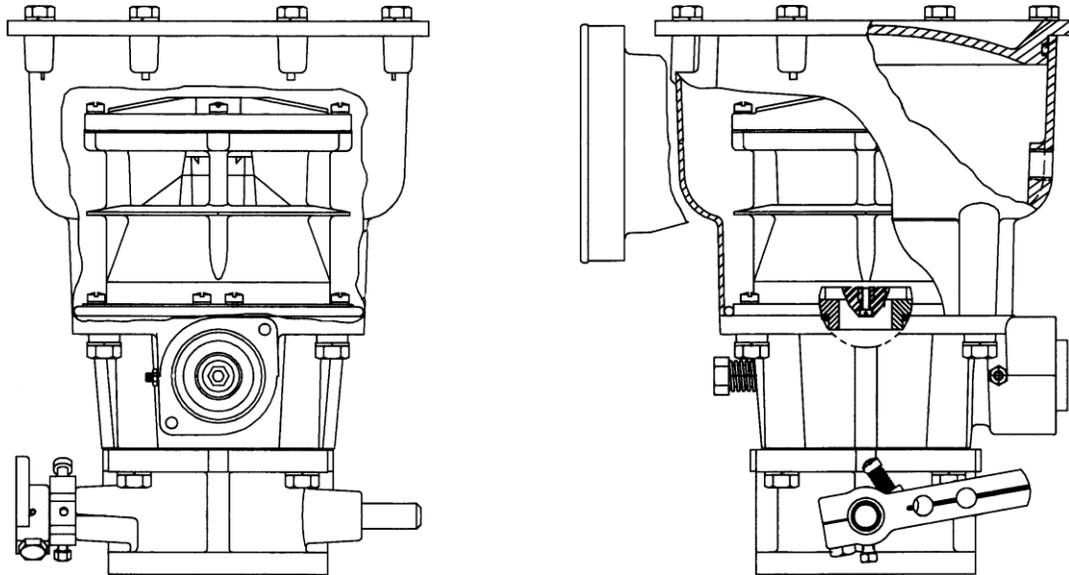
POWER VALVES

PART #	DESCRIPTION
V2-9	Valve, Power Adjustment

GASKETS

PART #	DESCRIPTION
G1-130	Gasket, Flange

Model 400VF



DESCRIPTION

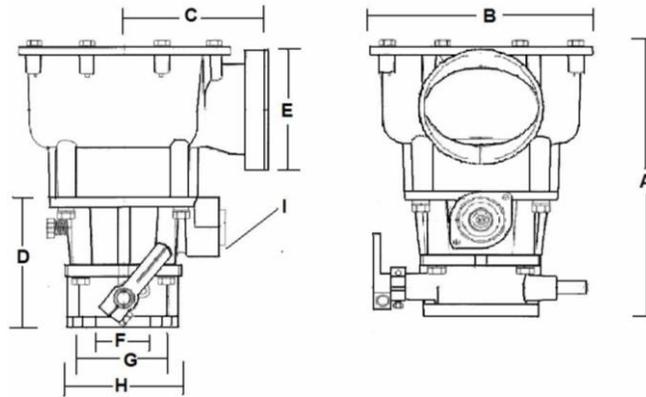
The Model 400VF Mixer is a concentric flow type air valve carburetor with a precision gas metering valve attached to the air valve for applications with airflow requirements up to 500 CFM (236.0 L/s). The air valve and gas valve motion is linear in relation to the volumetric flow. The air/fuel ratio is controlled by the adjustable power valve, the shape of the gas metering valve and the pressure from the gas regulator. The most suitable gas valve and matching jet is selected from several sizes best suited for various fuels such as LPG Vapor, Natural Gas and Landfill Gas. Gas valves are shaped to provide A/F versus flow characteristics defined by each customer.

SPECIFICATIONS

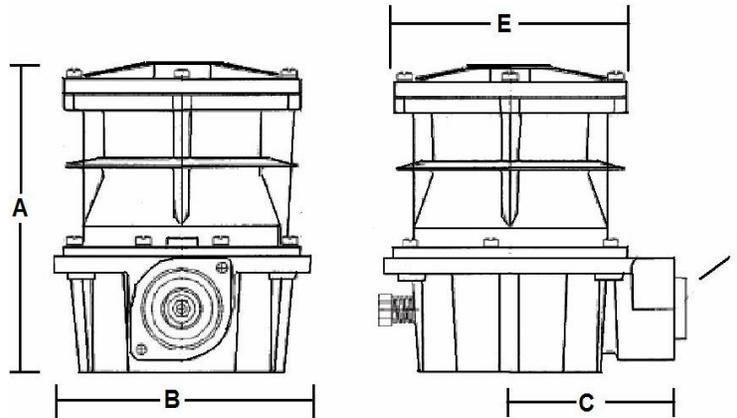
Fuel Type

LPG Vapor	90% + Propane
Natural Gas	85% + Methane
Digester Gas	56-72% Methane
Landfill Gas	45-56% Methane
Inlet Pressure	+5.0" w.c. (1.24 kPa) over Air Inlet (Idle Setting)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Various: Updraft, downdraft, sidedraft
Diaphragm Material	Silicone
HP/kW Rating	320 hp (238.6 kW) @ 500 CFM (236.0 L/s) with 2.0" Hg manifold depression using T2-7 throttle body

DIMENSIONS



View A

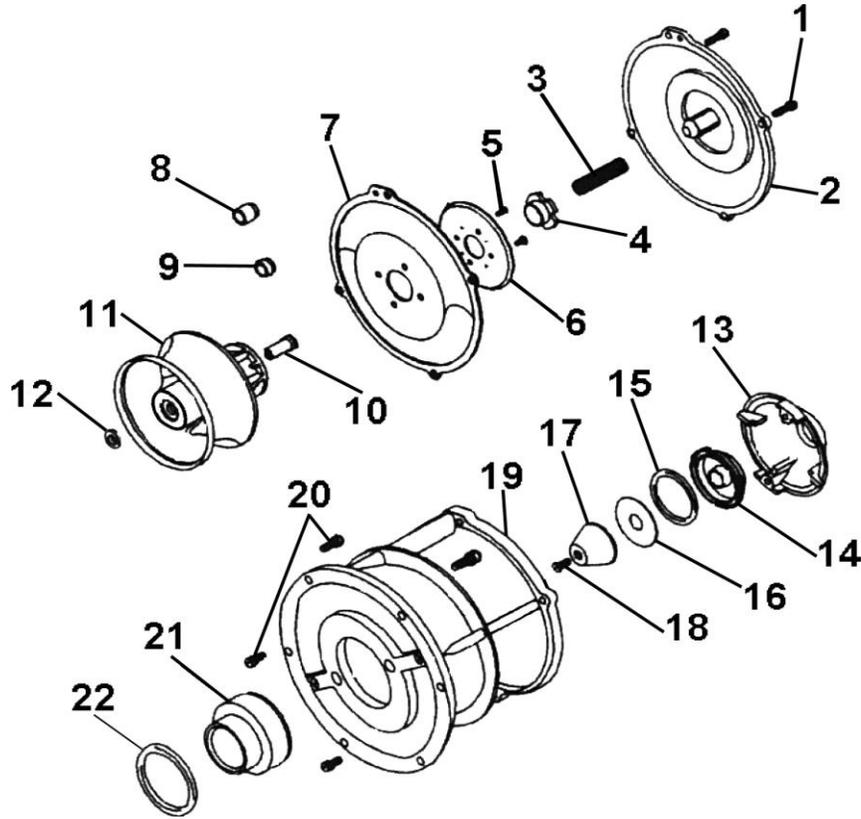


View B

STD. CARB.	AIR VALVE BODY ASSY	GAS VALVE CONV.	GAS BODY ASSY	AIR INLET ASSY	THROAT ASSY	VIEW
NG400VF3X-3-2	AB1-66-3X	CKV2-77	AB1-67	AA2-70	AT2-7-303	A

STD. CARB.	A	B	C	D	E	F	G	H	I
	OVERALL HEIGHT	OVERALL WIDTH	CTR TO INLET	THROTTLE BODY HEIGHT	INLET DIA.	BORE	CTR. TO	FLANGE WIDTH	FUEL INLET NPT
NG400VF3X-3-2	245.8 mm (9.68")	182.8 mm (7.20")	123.9 mm (4.88")	112.0 mm (4.41")	101.6mm (4.0")	68.3 mm (2.69")	72.8 mm (2.87")	95.2 mm (3.75")	31.7 mm (1.25")

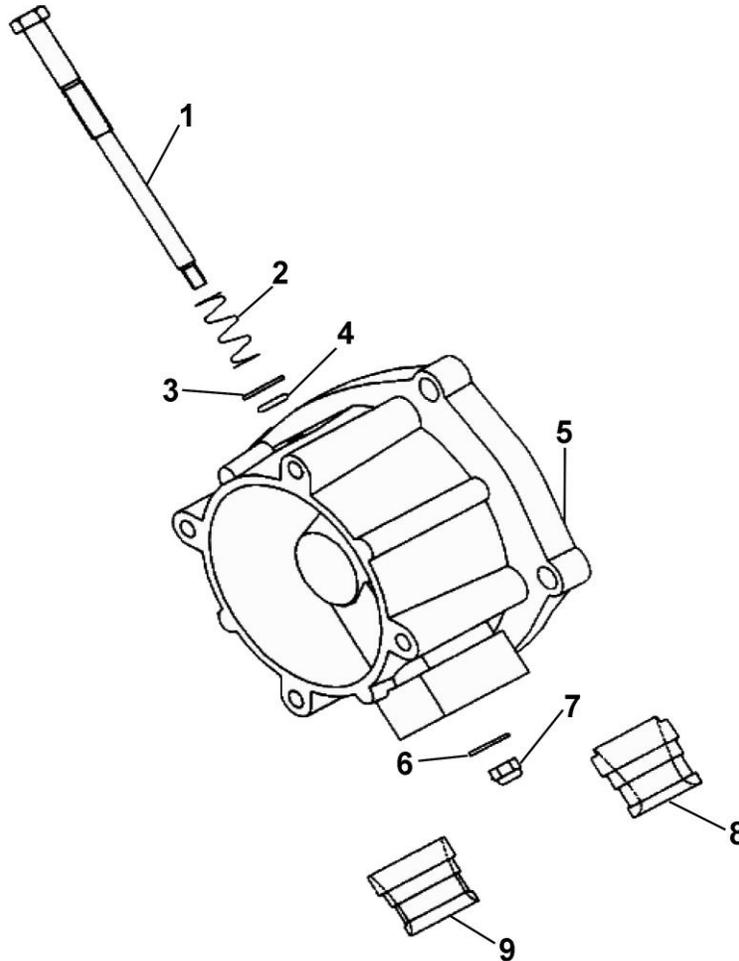
COMPONENTS



ITEM #	PART #	DESCRIPTION
1	S1-3	Screw
2	C1-30	Cover
3	S2-30	Spring, Air Valve
	S2-41	Spring, Air Valve 600 High
4	B3-57	Bushing
5	S1-22	Screw
6	P2-62-2	Plate, Back up Diaphragm 400VF
7	D1-25	Diaphragm
8	S4-39	Updraft Spacer
9	S4-38	Sidedraft Spacer
10	NSS	Shaft
11	AB1-66-3U	Air Valve Body, Updraft
	AB1-66-3X	Air Valve Body, Downdraft
12	NSS	O-ring
13	NSS	Jet Cover
14	P4-4	Piston
	S3-132	O-ring
15	S3-42	O-ring
	S3-78	O-ring
	S3-82	O-ring

ITEM #	PART #	DESCRIPTION
16	W1-100	Washer
	V2-77	Stoich
	V2-78	Gas Valve, ULB
	V2-79	Digester Gas
17	V2-80	Landfill Gas
	V2-88	Valve, Gas Mixer FB Rich
	V2-89	Valve, Gas Mixer FB Lean
	V2-122	Valve, Gas 400VF NG Ulb
18	NSS	Screw
19	NSS	Body, 400VF
20	NSS	Screw
21	NSS	Jet
22	S3-133	O-ring Nitrile, Natural Gas
	S3-133-2	O-ring Viton Landfill/Digester Gas
Not Shown	S3-103	O-ring, 90° Cover 400VF
	S3-138	O-ring, 90° Cover 400VF

COMPONENTS (CONTINUED)



ITEM #	PART #	DESCRIPTION
1	NSS	Power Adjust Screw
2	S2-16	Spring
3	W1-33	Washer
4	S3-27	O-ring
5	NSS	Gas Body
6	NSS	Washer Power Valve
7	NSS	Ny Loc Nut
8	J1-36	Jet Natural Gas & Propane
9	J1-48	Jet Landfill & Digester
Not Shown	B2-9	Bearing, Needle AT2-7
Not Shown	NSS	Washer, .394x1.246.051, Almn.
Not Shown	NSS	Washer, .263x1.744.051, Steel

ASSEMBLIES & ACCESSORIES

ACCESSORIES

PART#	DESCRIPTION
AA2-69	Air Horn, 4.0" Hose
AA2-70	Air Horn, 90 Deg 4.0" Hose

GAS VALVE/JET KIT

PART#	DESCRIPTION
CKV2-77	(NG) Natural gas, stoichiometric w/J1-45 (also for Propane w/EB converter)
CKV2-78	(UL) Natural gas, ultralean (l=1.4 to 1.6), w/J1-44
CKV2-79	(DG) Digester gas, (540-640 BTU/ft ³), stoichiometric, w/J1-47
CKV2-80	(LF) Landfill gas, (450-540 BTU/ft ³), stoichiometric, w/J1-47
CKV2-88	(FR) Natural gas, throttling feedback, (l=0.85-1.05), w/J1-46
CKV2-89	(FB) Natural gas, enrichment feedback, (l=1.2-1.4), w/J1-45

GAS JETS

PART#	DESCRIPTION
J1-36	Power Jet, 400VF
J1-44	Jet, Gas 400VF .600 ID
J1-45	Jet, Gas 400VF .750 ID
J1-46	Jet, Gas 400VF, .900ID
J1-47	Jet, Gas 400VF 1.060ID

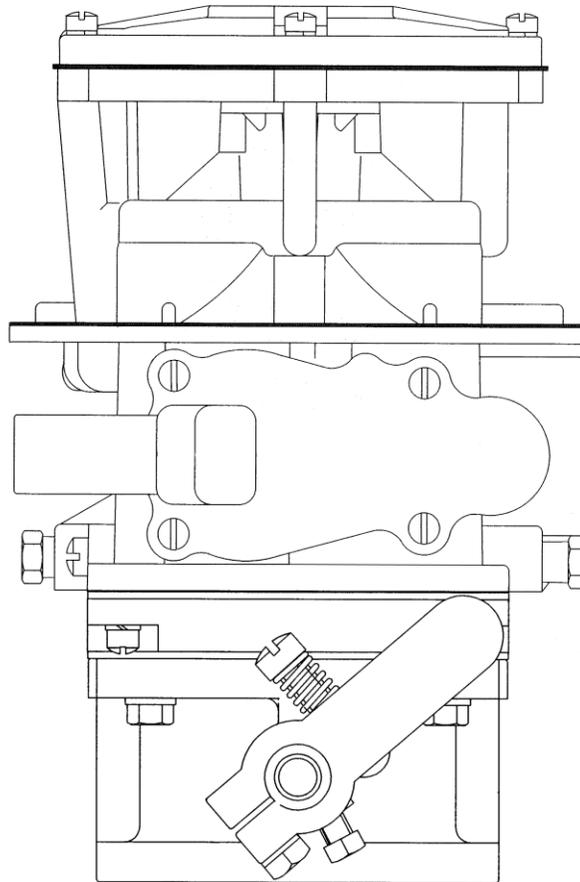
BUSHINGS

PART#	DESCRIPTION
B3-58	Bushing, Lower A/V 400VF

JET COVER ASSEMBLY

PART#	DESCRIPTION
BC1-29-3	Assembly, Jet Cover, VF3

Model 425

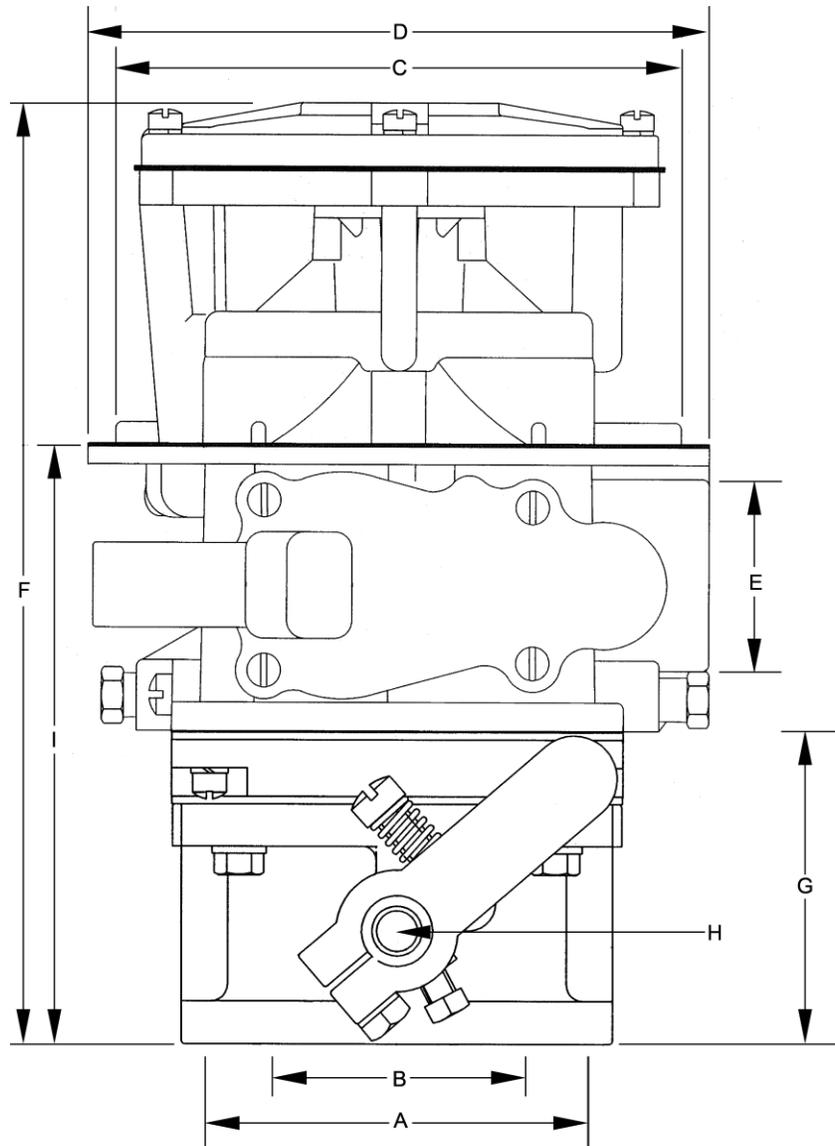


DESCRIPTION

The Model 425 carburetor is a single-diaphragm air valve carburetor/mixer. It offers a down draft air inlet that can be used for remote air filtration or open-element type air filters. This unit is available for LPG Vapor and Natural Gas for applications requiring up to 460 CFM (217.1 L/s). The Model 425 is also available for feedback applications with the 'FB' designation. These FB mixers are available in a tamper resistant configuration, indicated by the "-CT" in the part number.

SPECIFICATIONS

Fuel Type	LPG Vapor, Natural Gas
Inlet Pressure	+8.0" w.c. (1.99 kPa)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical
Diaphragm Material	Hydrin (Standard), Silicone (Optional)
HP/kW Rating	287 hp (214.0 kW) @ 460 CFM (217.1 L/s) and 1.5" Hg manifold depression 333 hp (248.0 kW) @ 533 CFM (252.0 L/s) and 2.0" Hg manifold depression

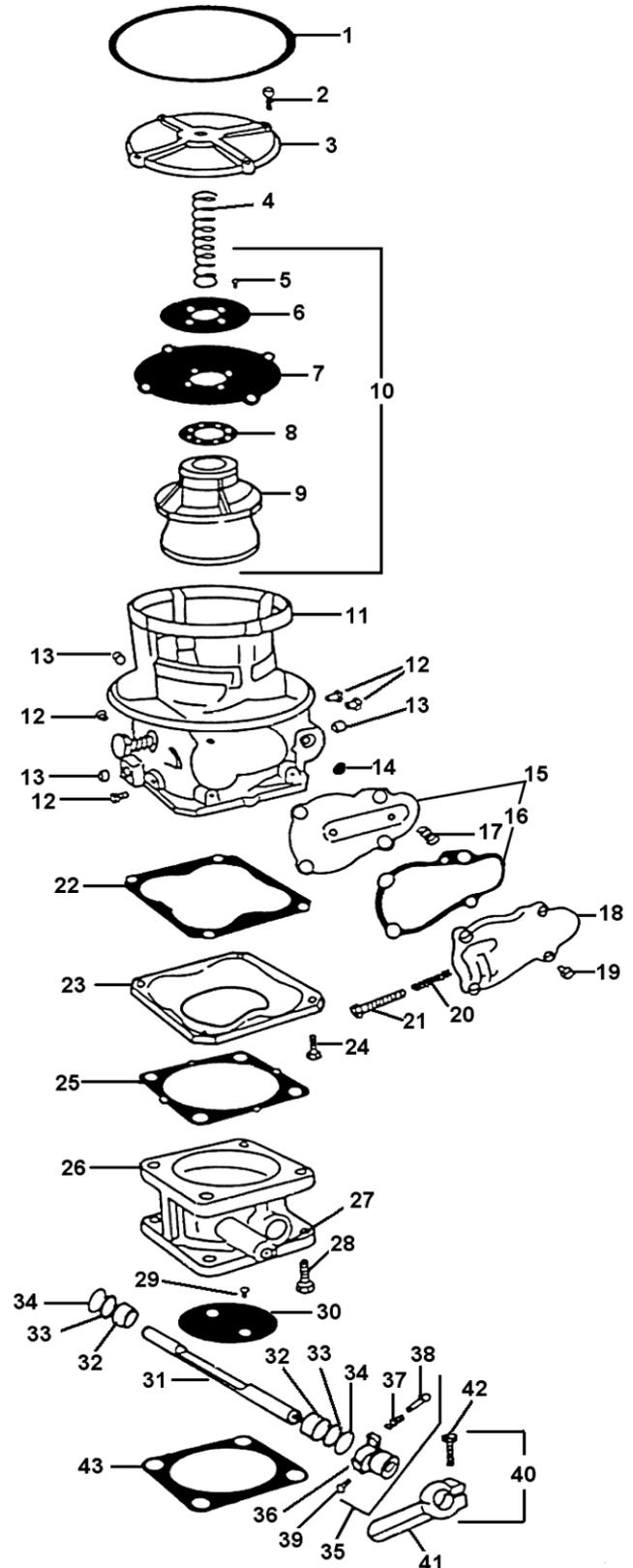
DIMENSIONS


				A	B	C	D	E	F	G	H	I
				CTR .TO CTR. BOLT SPACING	BORE	MIXER AIR HORN DIA.	OVERALL WIDTH	NPT FUEL INLET	OVERALL HEIGHT	THRTL. BODY HEIGHT	THRTL. SHAFT DIA.	FLANGE TO AIR HORN FLANGE
STD. CARB.	MIXER	THRTL. BODY	SAE FLANGE	73.03 mm (2.875")	67.95 mm (2.688")	130.18 mm (5.125")	139.7 mm (5.50")	1"	212.73 mm (8.375")	53.98MM (2.125")	11.11mm (0.438")	130.18 mm (5.125")
CT425-2	CT425M	BT2-7-4	2-1/2"									

COMPONENTS

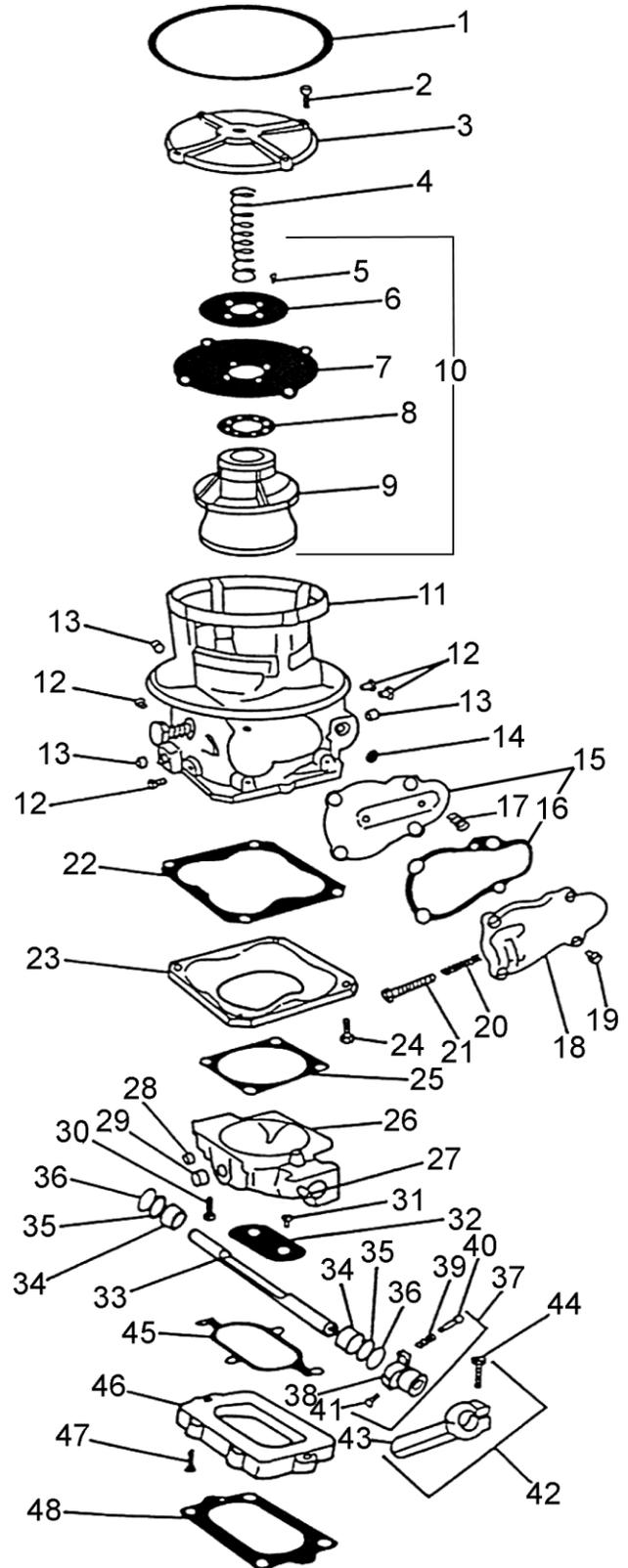
ITEM #	PART #	DESCRIPTION
1	G1-66	Gasket, Air Horn
2	S1-3	Screw, 10-24 x 5/8" SEMS (4)
3	C1-30	Cover, air valve diaphragm
4	S2-30	Spring, air valve
5	NSS	Screw, 6-32 x 1/4" SEMS (4)
6	NSS	Plate, backup
7	D1-18	Diaphragm, air valve
8	D1-25	Diaphragm, air valve, silicone
9	NSS	Gasket air valve
10	NSS	Air-gas valve
11	AV1-16	Air-gas valve assembly
12	NSS	Body Assembly
13	S1-69	Screw, 1/4" -28 x 5/16" (3)
14	NSS	Plug, 1/8" pipe
15	NSS	Seat, idle valve
16	AD1-28-1	Idle diaphragm assy (Includes #16)
17	NSS	Gasket, idle diaphragm (Incl w/#15)
18	S2-24	Spring, idle valve
19	C1-31	Cover, idle valve
20	S1-40	Screw, 10-24 x 3/8" SEMS (4)
21	S2-89	Spring, idle adjustment
22	NSS	idle adjust, 10-32 x 1-1/4"
23	G1-74	Gasket, mixer to adapter
24	NSS	Adapter, mixer to throttle body
25	S1-19	Screw, 12-24 x 5/8" SEMS (4)
26	G1-25	Gasket, adapter to throttle body
27	NSS	Throat, 2-1/2" SAE flange
28	NSS	Pin, throttle stop (2)
29	S1-30	Screw, 5/16"-18 x 7/8"
30	NSS	Stop screw, 10-32 x 5/16"
31	F2-7	Fly, 2-1/2"
32	NSS	Fly, 3.0"
33	F2-9	Fly, 3.5"
34	NSS	Throttle shaft, 7/16" diameter
35	B3-44	Permaglide bearing, 7/16" I.D.
36	S3-96	Seal, internal, 7/16" I.D. (2)
37	R1-52	Ring, seal retainer (2)
38	AL1-11-1	Throttle stop assembly: 7/16"
39	NSS	Throttle stop lever, 7/16" I.D.
40	S2-15	Spring, idle stop screw
41	S1-21	Stop screw, 10-32 x 3/4" SEMS (2)
42	S1-18	Pin, screw, throttle stop
43	AL1-12-3	Throttle lever, long, with screw
44	NSS	Throttle lever, long
45	S1-32	Screw, 1/4" -20 x 7/8"
46	G1-27	Gasket, 2-1/2" Flange
47	G1-28	Gasket, 3" Flange

NSS = Not Serviced Separately

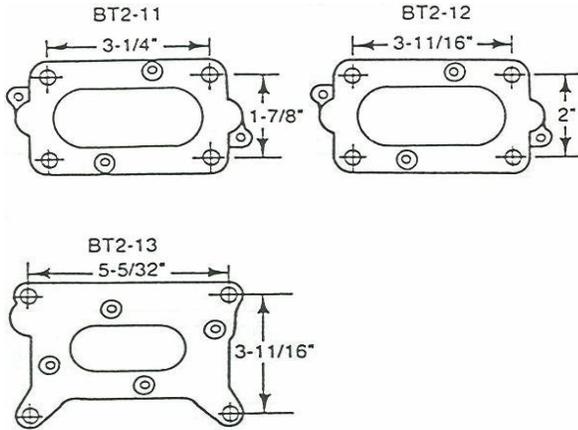


COMPONENTS (CONTINUED)

ITEM #	PART #	DESCRIPTION
1	G1-66	Gasket, Air Horn
2	S1-3	Screw, 10-24 x 5/8" SEMS (4)
3	C1-30	Cover, air valve diaphragm
4	S2-30	Spring, air valve
5	NSS	Screw, 6-32 x 1/4" SEMS (4)
6	NSS	Plate, backup
7	D1-18	Diaphragm, air valve
8	D1-25	Diaphragm, air valve, silicone
9	NSS	Gasket, air valve
10	NSS	Air-gas valve
11	AV1-16	Air-gas valve assembly
12	AB1-67	Gas Body Assy, (High BTU)
13	AB1-67-3	Gas Body Assy, (Low BTU)
14	S1-69	Screw, 1/4" -28 x 5/16" (3)
15	NSS	Plug, 1/8" pipe
16	S4-13	Seat, idle valve
17	AD1-28-1	Idle diaphragm assy (Includes #16)
18	NSS	Gasket, idle diaphragm (Incl w/#15)
19	S2-24	Spring, idle valve
20	C1-31	Cover, idle valve
21	S1-40	Screw, 10-24 x 3/8" SEMS (4)
22	S2-89	Spring, idle adjustment
23	S1-51	Screw, 10-32 x 1-1/4", idle adjust
24	G1-74	Gasket, mixer to adapter
25	A3-47	Adapter, mixer to throttle body
26	S1-19	Screw, 12-24 x 5/8" SEMS (4)
27	G1-21	Gasket, adapter to throttle body
28	NSS	Body, 2B throttle
29	NSS	Pin, throttle stop (2)
30	NSS	Plug, 1/8" pipe
31	NSS	Plug, 1/4" pipe
32	S1-19	Screw, 12-24 x 5/8" SEMS (4)
33	NSS	Stop screw, 10-32 x 5/16" SEMS (2)
34	NSS	Fly, 2B
35	NSS	Throttle shaft, 7/16" diameter
36	B2-9	Bearing, needle 7/16"
37	S3-12	Seal, 7/16" shaft
38	S3-19	Seal, internal (optional), 7/16"
39	R1-11	Ring, seal retainer (2)
40	AL1-11-1	Throttle stop assembly: 7/16"
41	NSS	Throttle stop lever, 7/16" I.D.
42	S2-16	Spring, idle stop screw
43	S1-21	Stop screw, 10-32 x 3/4"
44	S1-18	Pin, screw, throttle stop
45	AL1-12-3	Throttle lever, long, with screw
46	NSS	Throttle lever, long
47	S1-32	Screw, 1/4" -20 x 7/8" hex head
48	G1-44	Gasket, throttle body to flange
49	BT2-11	Flange, 1-1/4" 2B, with gasket
50	S1-19	Screw, 12-24 x 5/8" SEMS (4)
51	G1-45	Gasket, 1-1/4" 2B flange



ASSEMBLIES & ACCESSORIES



THROTTLE BODIES: ONE BARREL

PART #	DESCRIPTION
AT2-7	Throttle Body 2.5"
AT2-8	Throttle Body 3.0"

THROTTLE BODIES: TWO BARREL

PART #	DESCRIPTION
AT2-11-1	Throttle Body, 2V, 1-1/4" Flng.
AT2-12	Throttle Body, 2V, 1-1/2" Flng.
AT2-13-1	T/B Holley, 7/16" Shaft

THROTTLE SHAFTS

PART #	DESCRIPTION
S5-4	Shaft, 7/16" Diameter Long

RETURN SPRINGS

PART #	DESCRIPTION
AS2-50-4	7/16" Return Spring Ass'y

BRACKETS

PART #	DESCRIPTION
AB4-4	Bracket, Boden Wire
AB4-6	Bracket, Rear Fly Booster, Spring

TAMPER RESISTANT PLUG

PART #	DESCRIPTION
P3-51519-001	Plug, Tamperproof, 425

THROTTLE BODIES

PART #	DESCRIPTION
BT2-11	Body Flange w/ Gasket
AT2-12	Body Flange w/ Gasket
BT2-13	Body Flange w/ Gasket

CARBURETORS

PART #	DESCRIPTION
CT425-2	Carb. Ass'y, 2-1/2 SAE 5" C/S A/H Tamper Rest.

MIXERS

PART #	DESCRIPTION
CT425M	Mixer Ass'y, Tamper Resistant
CT425M-2	Mixer Ass'y, Tamper Resistant, Silicone
CT425M-510	Mixer Ass'y, 425
FT425M-2	Mixer Ass'y, Feedback, Tamper Resistant
FB425M	Mixer Ass'y, Model 425

LEVERS

PART #	DESCRIPTION
AL1-11-1	Stop Ass'y, 7/16" Long
AL1-12-1	Stop Ass'y, 3-1/16" Long
AL1-12-3	Stop Ass'y, 2-5/16" Long

NOTES:

Note: AL1-12 levers used with AL1-11 lever stop. See lever section of catalog for other optional levers.

AIR GAS VALVE ASSEMBLIES

PART #	DESCRIPTION
AV1-16	Air Gas Valve, Standard, Hydrin
AV1-16-2	Air Gas Valve, Standard, Silicone
AV1-1637-2	Air Gas Valve, w/V2-37, Silicone, for EC1, Rich
AV1-1644-2	Air Gas Valve, w/V2-44 Silicone, for >370 ci engines with lean cruise
AV1-16-510	Air Gas Valve, for 425-10
AV1-1651	Air Gas Valve, w/ V2-51, Hydrin, feedback
AV1-1651-2	Air Gas Valve, w/ V2-51, Silicone, feedback
AV1-20875	Air Gas Valve, V2-51, Silicone

ADAPTERS

PART #	DESCRIPTION
A3-129	Adapter, 400VF Machined
A2-73	Adapter 1/2" Spacer Adapter 5" ID

ASSEMBLIES & ACCESSORIES (CONTINUED)

ADAPTERS

PART #	DESCRIPTION
AA1-50-5	Adapter Assy
AA2-14	Adapter Air Horn 90° X 3-1/2"
AA2-15	Adapter Air Horn 90° X 4"
AA2-40	Adapter Air Horn 90° X 5"
AA2-46	Adapter, Air Horn 90° X 5"
AA2-49	Adapter, A/H Ford & Chevy 1.5" spacer
AA3-19	Adapter, 225M to Holley 2B
AA3-35	Adapter, 425 to 2.5" & 3" T/B
AA3-47	Adapter, 225 to CA425 T/B
AA3-48	Adapter, CA425M to AA3-19
AA3-75	Adapter, CA425 to CA300A
AA3-80	Adapter, Dual 425 Mixer to Holley
AA3-86	Adapter, 425 Mixer to Rochester. Q-Jet
AA3-129	Adapter Assy, 3" Hose
A2-47	Adapter, Air Cleaner Base 125 - 425M
A2-54	Adapter, Air Cleaner Base 425M
A2-55	Adapter, Air Cleaner Base 425M
A1-79	Adapter, 425 Carb., Small
A1-80	Adapter, 425 Carb., Large
A2-73	Adapter, 1/2" Spacer, 5" ID

AIR CLEANER ASSEMBLIES

PART #	DESCRIPTION
AF1-14	Filter Ass'y, 500CFM
AF1-15	Filter Ass'y, 400CFM
AF1-16-2	Filter Ass'y, 550CFM
AF1-16-3	Filter Ass'y, 550CFM

FILTER

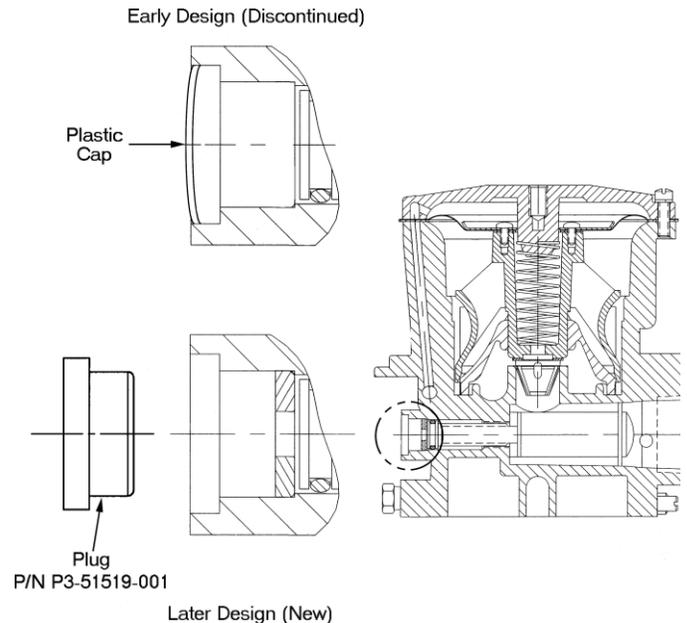
PART #	DESCRIPTION
F1-14	Filter, Element 500CFM
F1-7	Filter, Element UL Approved
F1-9	Filter, Element 500CFM
C1-48	Cover, Filter, AF1-14 & AF1-8
C1-60	Cover, Filter, AF1-7

GASKET AND SEALS

PART #	DESCRIPTION
G1-30	Gasket, Flange 425
G1-46	Gasket, Flange 1-1/2" 2B T2-12
G1-65	Gasket, plate Venturi P2-24
G1-75-3	Gasket, Adapter A3-37 Mod 425
G1-96	Gasket, Mixer Adapter 425M
G1-126	Gasket, Throttle Adapter, A3-67

TAMPER RESISTANT CAPS

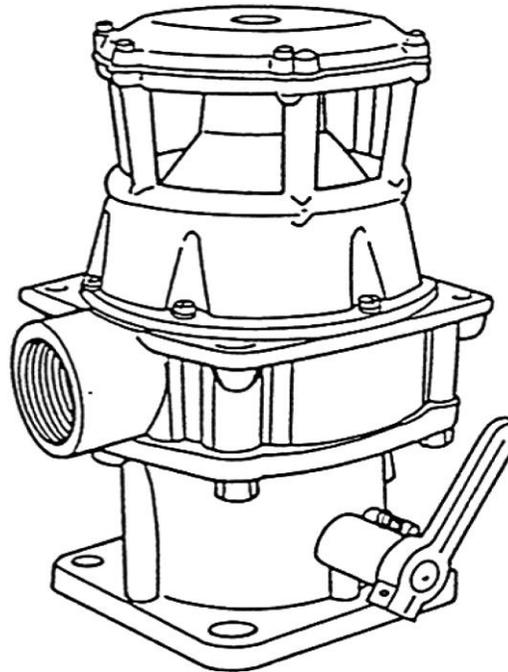
The optional plastic cap used to cover the idle adjustment screw, has been discontinued. A new plug (part number P3-51519-001) is available separately to comply with tamper resistance requirements.



TAMPER RESISTANT CAPS

PART #	DESCRIPTION
P3-51519-001	Plug, Tamperproof 425

Model 600



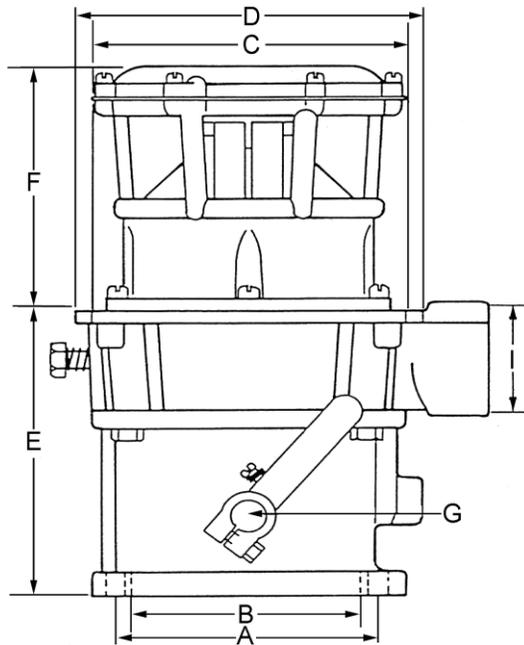
DESCRIPTION

The 600 is a gaseous fuel carburetor of the concentric flow air valve type. This mixer is suitable for LPG Vapor, Natural Gas, Landfill and Digester gases for applications requiring up to 960 CFM (453.1 L/s). A precision gas metering valve is attached to the air valve. Both the air and gas valve motions are linear in relation to volumetric flow. The air/fuel ratio is controlled by the adjustable power valve, shape of the gas metering valve, and the pressure from the gas regulator. Gas valves are shaped to provide A/F ratio versus flow characteristics defined by the fuel composition.

SPECIFICATIONS

Fuel Type	
LPG Vapor.....	90% + Propane
Natural Gas	85% + Methane
Digester Gas.....	56-72% Methane
Landfill Gas.....	45-56% Methane
Inlet Pressure	+5.0" w.c. (1.24 kPa) over Air Inlet (Idle Setting)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position.....	Vertical
HP/kW Rating.....	600hp (447.0 kW) @ 960 CFM (453.1 L/s) and 2.0" Hg manifold depression

DIMENSIONS

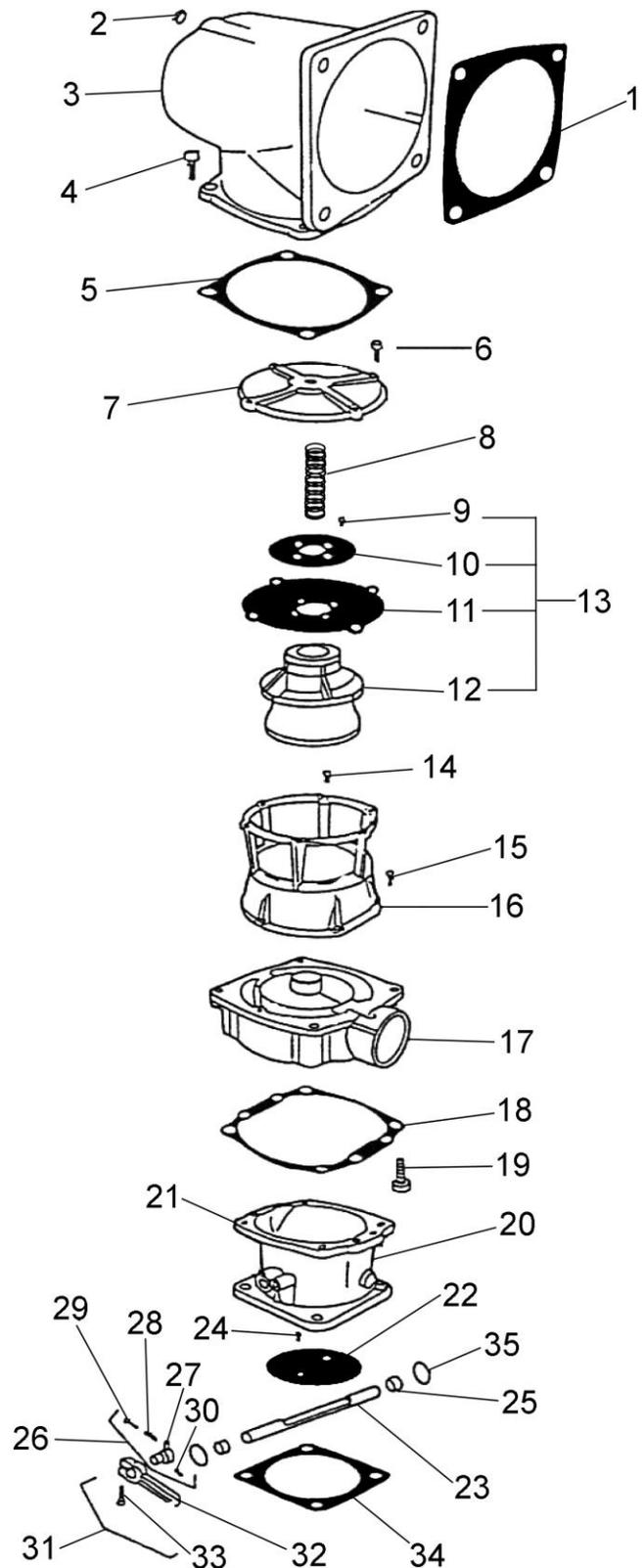


STD. CARB.	MIXER	THRTL BODY	SAE FLANGE	CTR TO CTR BOLT SPACING	BORE	AIR HORN BOLT CTR TO CTR	OVERALL AIR HORN WIDTH	THRLE BODY TO AIR HORN	AIR HORN TO TOP OF MIXER	THROTTLE SHAFT DIAMETER	THROTTLE SHAFT LENGTH	NPT FUEL INLET
600-1	600-51218-001	AT2-17	4"	106.3mm (4.19")	107.9mm (4.25")	5" Sq.	174.6mm (6.87")	146.0mm (5.75")	123.8mm (4.89")	12.7mm (.50")	212.7mm (8.38")	38.1mm (1.50")
600-1-2	600-51218-004	AT2-17	4"	106.3mm (4.19")	107.9mm (4.25")	5" Sq.	174.6mm (6.87")	146.0mm (5.75")	123.8mm (4.89")	12.7mm (.50")	212.7mm (8.38")	38.1mm (1.50")
600-77	600-51218-007	AT2-17	4"	106.3mm (4.19")	107.9mm (4.25")	5" Sq.	174.6mm (6.87")	146.0mm (5.75")	123.8mm (4.89")	12.7mm (.50")	212.7mm (8.38")	38.1mm (1.50")

COMPONENTS

ITEM#	PART #	DESCRIPTION
1	G1-77*	Gasket, Air Horn
2	NSS	Plug, 3/8" pipe
3	NSS	Air Horn, 5-5/8" bolt centers
4	S1-34	Screw, 3/8-16 x 1" SEMS (4)
5	G1-76-1*	Gasket, body to Air Horn
6	S1-3	Screw, 10-24 x 5/8" SEMS (6)
7	C1-32	Cover, air valve diaphragm
8	S2-32-1	Spring, air valve, updraft
	S2-32-2	Spring, air valve, downdraft (yellow)
9	S1-12	Screw, 8-32 x 5/16" SEMS (4)
10	NSS	Plate, backup
11	D1-20-1	Diaphragm
	D1-20-2*	Diaphragm, Silicone
12	BV1-17	Air valve assembly, Propane
	AV1-17	Air-gas valve assembly, complete
13	AV1-17-26-4	Air-gas valve, natural gas 900 BTU
	LHAV1-17-2	Valve Assy, Silicone
14	S1-3	Screw, 10-24 x 5/8" SEMS (2)
15	S1-19	Screw, 12-24 x 5/8" SEMS (6)
	B1-30	Body, air valve
16	NSS	Body, air valve, digester gas
	NSS	Body Horizontal Mount
17	AB1-31	Gas inlet body assembly
18	G1-78-1*	Gasket, throttle body to mixer
19	S1-34	Screw, 3/8"-16 x 1" SEMS (4)
20	NSS	Throat, 4" SAE flange
21	NSS	Pin, throttle stop (2)
22	F2-11	Fly, 4-13/16" diameter
	F2-9	Fly, 3-11/16" diameter
23	S5-10	Throttle shaft, 1/2" dia.
	S5-14	Throttle shaft, 9/16" dia., 4" fly
24	S1-35	Screw, 10-32 x 3/8" SEMS
25	B2-16	Bearing, needle, 5/16" I.D.
	B3-43	Bearing, needle, 1/2" shaft (2)
26	AL1-11-2	Throttle stop assembly: 1/2" I.D.
27	L1-11-2	Throttle stop lever, 1/2" I.D.
28	S2-15	Spring, idle stop screw
29	S1-21	Stop screw, 10-32 x 3/4"
30	S1-18	Pin, screw, throttle stop
31	AL1-12-1	Throttle lever, with screw
32	NSS	Throttle lever
33	S1-32	Screw, 1/4"-20 x 7/8" hex
34	G1-38*	Gasket, 4" flange
	G1-29	Gasket, 3-1/2" flange
35	S3-93	Throttle shaft seal, 1/2"

*Included in Repair Kit RK-600-1



ASSEMBLIES & ACCESSORIES

MIXER: UPDRAFT - STANDARD

PART #	DESCRIPTION
600M-2	Updraft Mixer w/Silicone
600M-3	Mixer Assy, Turbo w/Silicone

MIXER: DOWNDRAFT - STANDARD

PART #	DESCRIPTION
600XM-2	Downdraft Mixer w/Silicone

THROTTLE BODIES

PART #	DESCRIPTION
AT2-9	3-1/2" SAE Flange
AT2-17	Throttle Body, SAE 4", Permaglide Bearings
AT2-17-2	4" SAE 9/16" N/B, Shaft Offset
BT2-18-356	Throttle Assy 1-1/4 Permaglid

ADAPTERS

PART #	DESCRIPTION
AA2-16	Adapter, Air Horn 6" Dia. x 90°
AA2-19	Adapter, Air Horn 6" Dia. to 4-5/8" Dia.

REPAIR KITS

PART #	DESCRIPTION
RK-B3-43	Repair Kit, T2-9, 10 & 17 Permaglide
RK-B3-43-1	Retro Kit, to Upgrade T2-9, 10 & 17
RK-600-1	Repair Kit, 600 (Includes RK-B3-43-1)
RK-B3-479	Repair Kit (Includes bearing, seal & sleeve)

THROTTLE SHAFTS

PART #	DESCRIPTION
S5-10	1/2" Dia. 8-3/8" Long
S5-14	9/16" Dia. 9" Long, 4" Fly

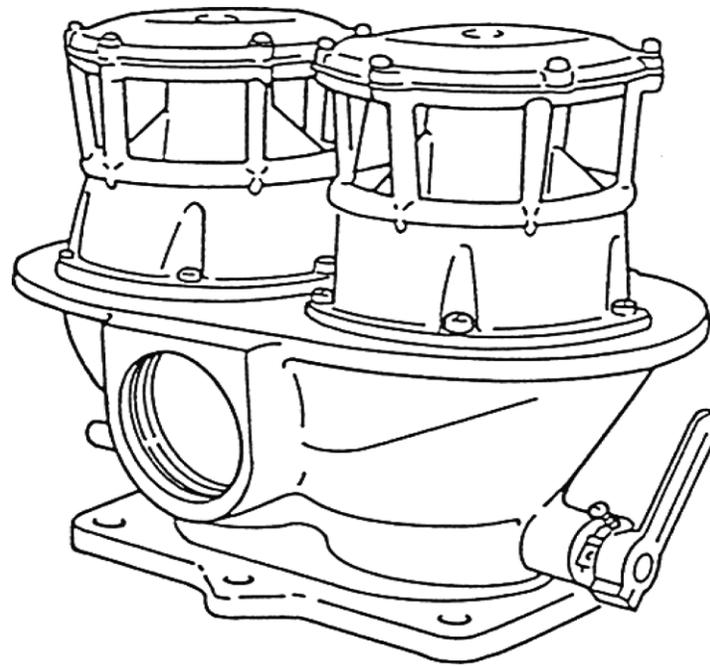
AIR GAS VALVES ASSEMBLIES

PART #	DESCRIPTION
AV1-17	Air Gas Valve Assembly
AV1-17-2	Air Gas Valve Assembly, Silicone
AV1-17-3	Air Gas Vlv. Ass'y, Silic. Waukesha Tbo.
AV1-17-4	Air Gas Valve Ass'y, w/ Diaph. 600
AV1-17-6	Air Gas Valve Ass'y, Waukesha
AV1-17-7	Air Gas Valve Ass'y, w/ V2-71
DG-AV1-17-2	Air Gas Valve, Digester, Silicone

GAS MIXER VALVES

PART #	DESCRIPTION
V2-21	Valve, Gas Mixer, 600 Series
V2-26-4	Valve, Natural Gas 900 BTU
V2-31	Valve, Gas Mixer Low Heat
V2-41	Valve, Gas Mixer Turbo
V2-55	Valve, Gas Mixer Wauk
V2-71	Valve Gas Mixer Cat 35-16
V2-75	Valve Gas Mixer 600 (493662)

Model 600D



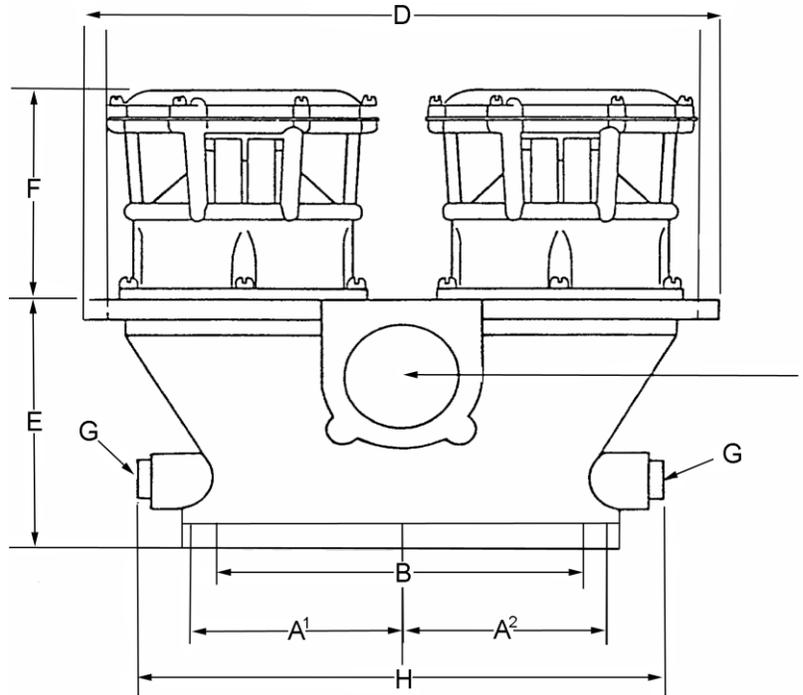
DESCRIPTION

The Model 600D mixer is a concentric flow type air valve carburetor. This mixer is suitable for LPG Vapor, Natural Gas, Landfill and Digester gases for applications requiring up to 1600 CFM (7551 L/s). A precision gas metering valve is attached to the air valve. The air valve and gas valve motion is linear in relation to the volumetric flow. The air/fuel ratio is controlled by the adjustable power valve, jet, shape of the gas metering valve and the pressure from the gas regulator. Gas valves are shaped to provide A/F versus flow characteristics defined by the fuel composition.

SPECIFICATIONS

Fuel Type	
LPG Vapor.....	90% + Propane
Natural Gas	85% + Methane
Digester Gas.....	56-72% Methane
Landfill Gas.....	45-56% Methane
Inlet Pressure	+5.0" w.c. (1.24 kPa) over Air Inlet (Idle Setting)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position.....	Vertical
HP/kW Rating.....	1,000 hp (745.7 kW) @ 1600 CFM (755 L/s) and 2.0" Hg manifold depression

DIMENSIONS

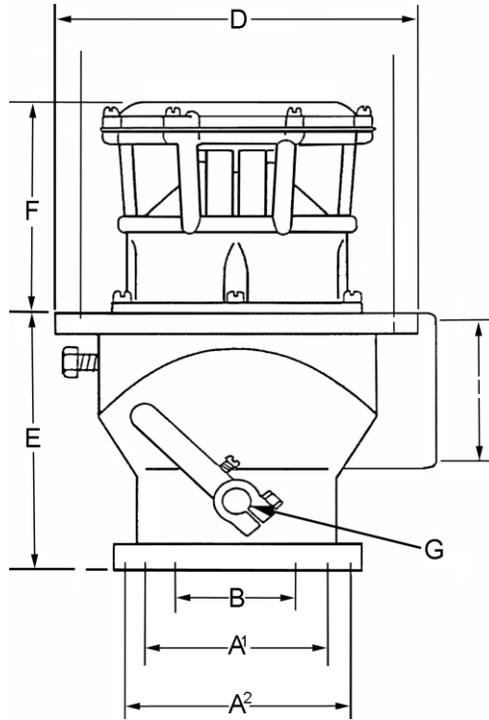


"A" VIEW

STANDARD CARB	MIXER	THROTTLE BODY	SAE FLANGE	A1	A2	B	C	D	E	F	G	H	I
				TO CENTER BOLT SPACING	CENTER TO CENTER BOLT SPACING								
600D-1-2	600DXM-2	NSS	4" Duplex	104.7 mm (4.125")	4"	204.7 mm (8.0625")	NSS	339.7 mm (13.375")	146.05 mm (5.75")	123.8 mm (4.875")	12.7 mm (.50")	315.91 mm (12.4375")	63.50 mm (2.5")
600D-22H		NSS	4" Duplex	104.7 mm (4.125")	4"	204.7 mm (8.0625")		339.7 mm (13.375")	146.05 mm (5.75")	123.8 mm (4.875")	12.7 mm (.50")	315.91 mm (12.4375")	63.50 mm (2.5")

Note: DG (Digester gas) carburetors reduce airflow 30% -X (or DX) indicates downdraft carburetor. Refer to A2 Air Horn adapter section for additional adapter not shown in picture

DIMENSIONS (CONTINUED)



"B" VIEW

		A1	A2	B	C	D	E	F	G	H	I		
STANDARD CARB	MIXER	THROTTLE BODY	SAE FLANGE	CENTER TO CENTER BOLT SPACING	CENTER TO CENTER BOLT SPACING	BORE	AIR HORN ADAPTER	OVERALL AIR HORN WIDTH	THROTTLE BODY TO AIRHORN HEIGHT	AIRHORN TO TOP OF MIXER	THROTTLE SHAFT DIAMETER	THROTTLE SHAFT LENGTH	NPT FUEL INLET
600D-1-2	600DXM-2	NSS	4" Duplex	98.4 mm (3.875")	136.5 mm (5.375")	96.8 mm (3.8125")	AT2-18	339.7 mm (13.375")	146.05 mm (5.75")	123.8 mm (4.875")	12.7 mm (.50")	315.91 mm (12.4375")	63.50 mm (2.5")
600D-22H	600DXM-2	NSS	4" Duplex	98.4 mm (3.875")	136.5 mm (5.375")	96.8 mm (3.8125")	AT2-18	339.7 mm (13.375")	146.05 mm (5.75")	123.8 mm (4.875")	12.7 mm (.50")	315.91 mm (12.4375")	63.50 mm (2.5")

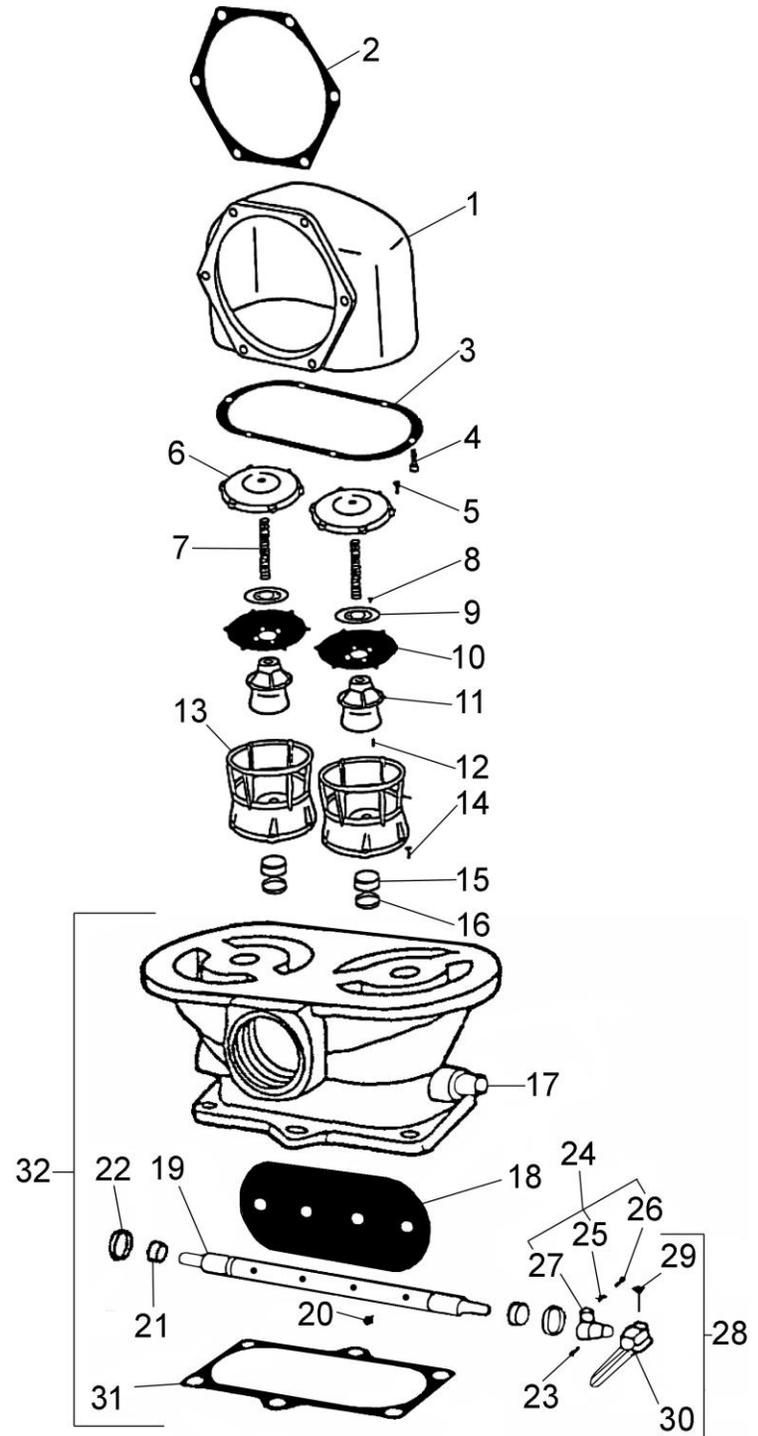
COMPONENTS

ITEM #	PART #	DESCRIPTION
1	A2-18	Air Horn, 8" 90°
2	G1-82*	Gasket, Air Horn Inlet
3	G1-151	Gasket, Air Horn to Throttle Body
	NSS*	Gasket, Air Horn to Throttle Body
4	S1-34	Screw, 3/8" - 16 x 1" SEMS
5	S1-3	Screw, 10-24 x 5/8" SEMS
6	C1-32	Cover
7	S2-32-1	Spring, Air Valve Updraft
	S2-32-2	Spring, Air Valve Downdraft
8	S1-12	Screw, 8-32 x 5/16" SEMS
9	P2-21	Plate, Backup
10	D1-20-2*	Diaphragm Silicone
	D1-20-3	Diaphragm, Mixer FVMQ
11	BV1-17	Air Valve, Ass'y Propane
12	S1-3	Screw, 10-24 x 5/8" SEMS
13	B1-30	Body
14	S1-19	Screw, 12-24 x 5/8 SEMS
15	J1-6	Jet
16	S3-39*	Seal
17	P1-6	Pin, Throttle Stop
18	F2-12	Fly, 8"
	F2-20	Fly, 7.75 X 2.75 Oval
19	AS5-9	Throttle Shaft, Slotted 1/2" Dia.
	AS59-2	Throttle Shaft, Slotted 1/2" Dia.
20	NSS	Screw, 10-32 x .62
21	B3-42	Permaglide Bearing
22	S3-92	Seal
23	S1-18	Pin, Screw Throttle Stop
24	AL1-11-2	Throttle Stop Assembly
25	S2-15	Spring, Idle Stop Screw
26	S1-21	Stop, Screw
27	NSS	Throttle Stop Lever
28	NSS	Throttle Lever, w/ Screw
29	S1-32	Screw, 1/4 - 20 x 7/8"
30	AL1-12-1	Throttle Lever
31	G1-80*	Gasket, Manifold
32	NSS	Throttle Body Complete

Not
Shown

W1-60 Washer, .500x1.25x.029 SS
W1-68 Washer, .500x.936x.059 Steel
P3-12 Plug, 3/8 NPT 5/16 Hex Sch Brass

*Included in Repair Kit RK-600DX-1





ASSEMBLIES & ACCESSORIES

MIXERS: UPDRAFT - STANDARD

PART #	DESCRIPTION
600DM-791	Mixer, Updraft, 4" SAE 2B flange, no Air Horn, special
600DXM-2	Carb., 4" 2B Downdraft, Less Air Horn, w/ Sil.

THROTTLE BODIES

PART #	DESCRIPTION
AT2-18-1	4"SAE flange, 3/4" shaft diameter, w/Permaglide bearings, (standard)

THROTTLE SHAFTS

PART #	DESCRIPTION
AS5-9	1/2" diameter, 2-7/16" long, with inner bearings, 3/4" O.D. (standard)

GASKETS

PART #	DESCRIPTION
G1-151	Gasket, Air-Horn-Throttle 600D
G1-86	Gasket, Flange 8" A3-44 Adapter

LEVERS

PART #	DESCRIPTION
AL1-11-2	Stop Assy 1/2" Mounting ID, 1" Long (Standard)
AL1-12-1	Stop Assy, 3-1/16" Long (Standard)
AL1-12-18E	Lever Throttle (59018E)

Notes:

AL1-1 Levers Used with AL1-11 Lever Stops.

See Lever Section of Catalog for Others

AIR GAS VALVES ASSEMBLIES

PART #	DESCRIPTION
AV1-17	Air Gas Valve Assembly
AV1-17-2	Air Gas Valve Assembly, Silicone
AV1-17-3	Air Gas Valve, Ass'y, Silic. Waukesha, Turbo
AV1-17-4	Air Gas Valve Ass'y, w/Diaph 600, w/V2-41
AV1-17-6	Air Gas Valve Ass'y, Waukesha w/ V2-55
AV1-17-7	Air Gas Valve Ass'y, w/ V2-71
DG-AV1-17-2	Air Gas Valve, Di/Gas (550 - 750BTU), w/ Sil.
LHAV1-17-2	Air Gas Valve Lo/Heat (750 - 950BTU), w/ Sil.
P2-53	Plate, Air Valve Piston

ADAPTERS

PART #	DESCRIPTION
AA2-16	Air Horn, 90° by 6" to 600
AA2-17	Air Horn, Ingersoll Rand 8SVG
AA2-18	Air Horn, 8" diameter x 90 degrees (side)
AA2-18-2	Air Horn, 8" 90° w/ Baffle
AA2-62	Air Horn, 90° 7" End
AA3-38	Adapter assembly, Ingersoll Rand 8SVG
AA3-44	Adapter, 600D Base 7.75" Bolt

GASKETS

PART #	DESCRIPTION
G1-79	Gasket for Adapter A3-38

DIAPHRAGMS

PART #	DESCRIPTION
AD1-20-3	Diaphragm, Mixer Assy

REPAIR KITS

PART #	DESCRIPTION
RK-B3-42-1	Retrofit kit to upgrade, T2-18, throttle bodies
RK-600DX-1	Repair Kit, 600DX (Includes RK-B3-42-1)

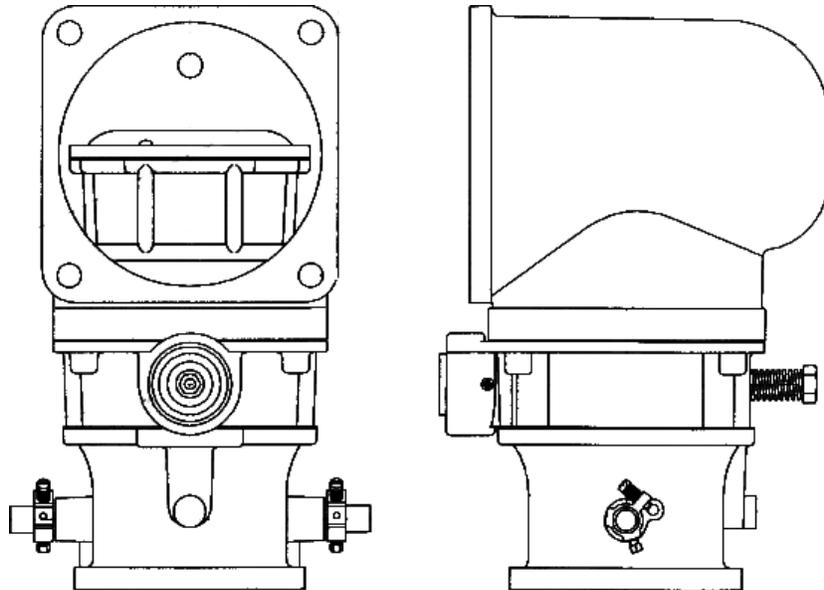
SPRINGS

PART #	DESCRIPTION
S2-33	Spring/600 Load Adj

AIR HORNS

PART #	DESCRIPTION
A2-22	Air Horn 600
A2-23	For 600DX-5

Model 600 Varifuel



DESCRIPTION

The Model 600VF mixer is a concentric flow type air valve carburetor with a precision gas metering valve attached to the air valve for applications requiring up to 960 CFM (453.1 L/s). The air valve and gas valve motion is linear in relation to the volumetric flow. The air/fuel ratio is controlled by the adjustable power valve and the shape of the gas metering valve and the pressure from the gas regulator.

Gas valve and jet combinations may be selected to meet various fuel and burn strategies. The gas valves and jets are easily replaced to provide performance as defined by each customer or meet specific emission levels. Gas valves and jets can be ordered in matching sets (see page 122). These units are designed for 14,000 MTBF (mean time between failures). Advanced guide bushing material provides a more durable solution over the standard 600 carburetor.

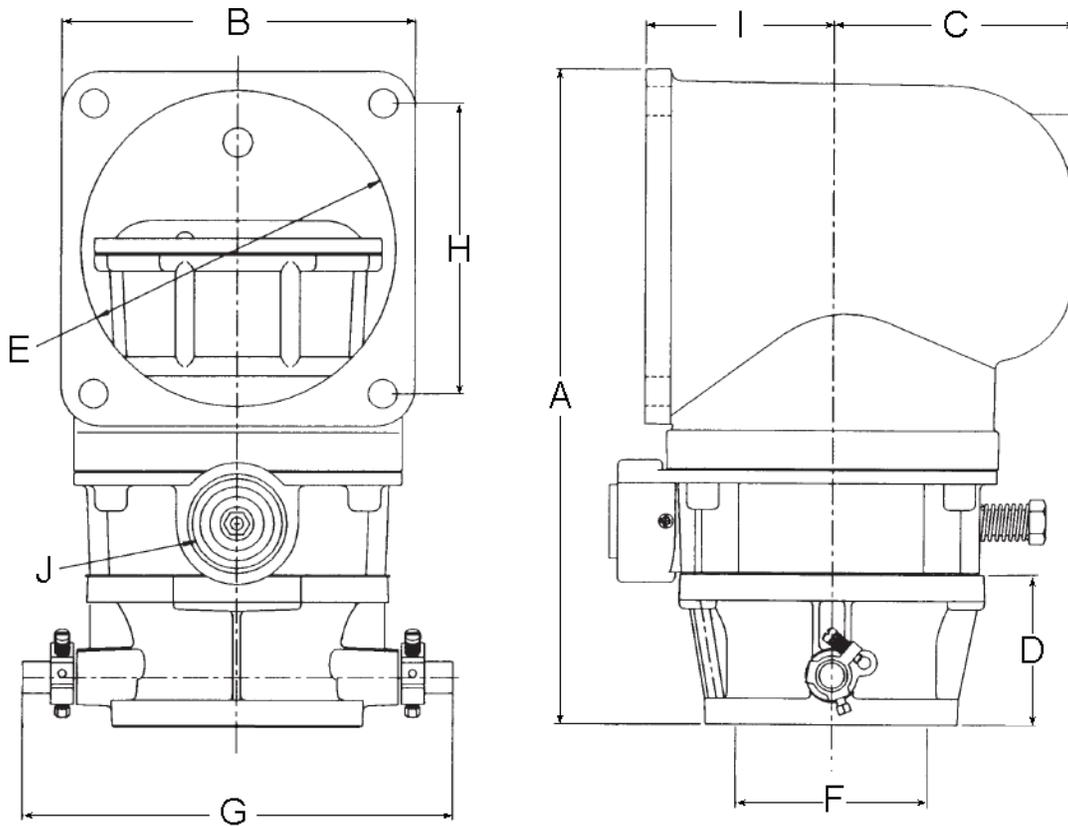
The 600 Varifuel Mixer is not available as an assembly, but it is ordered in modular components to be assembled to the desired configuration.

SPECIFICATIONS

Fuel Type

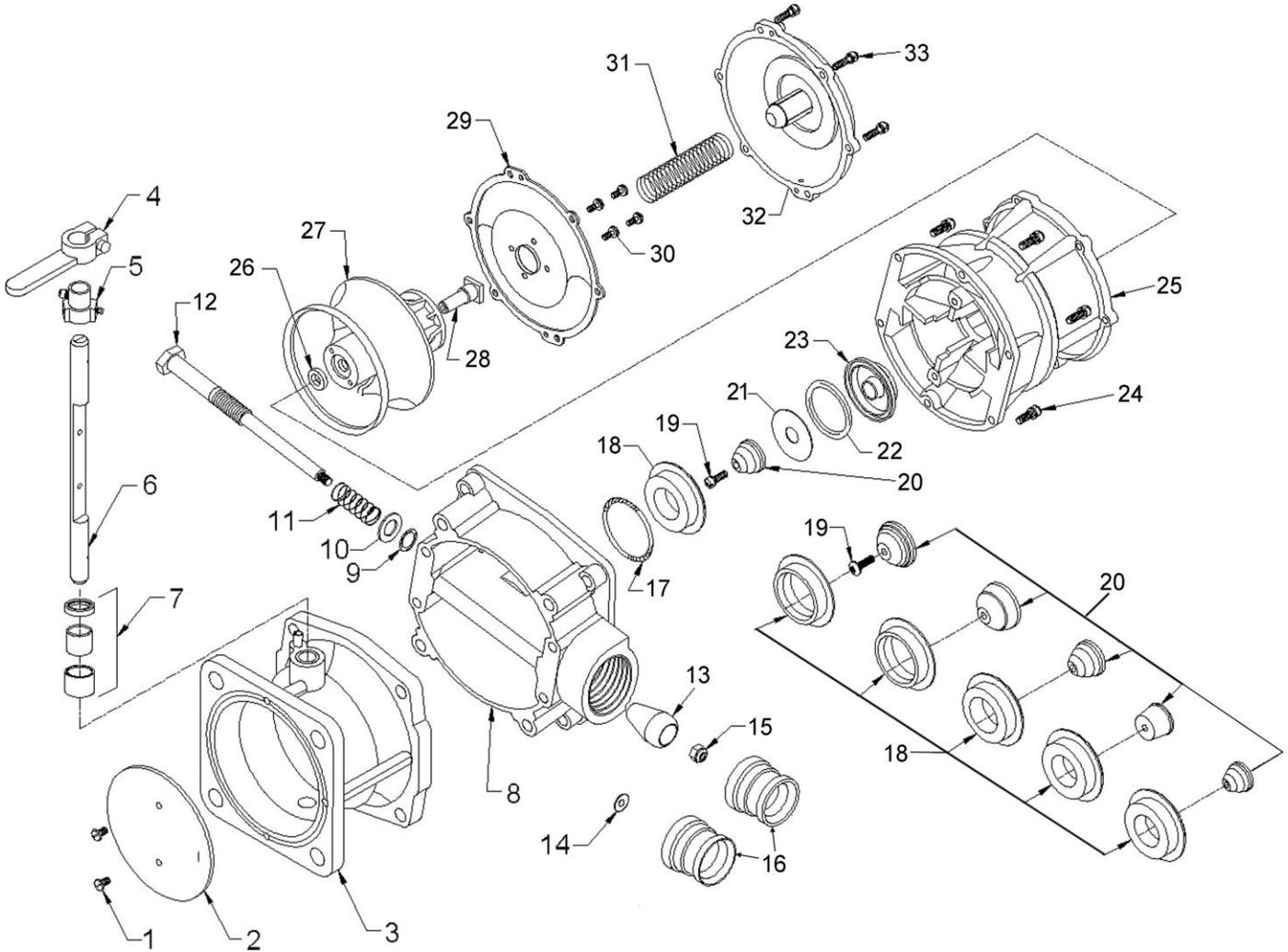
LPG Vapor	90% + Propane
Natural Gas	85% + Methane
Digester Gas	56-72% Methane
Landfill Gas	45-56% Methane
Inlet Pressure	+5.0" w.c. (1.24 kPa) over Air Inlet (Idle Setting)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Various (updraft, downdraft, side draft)
Diaphragm Material	Fluorosilicone
HP/kW Rating	600 HP (447.4 kW) @ 960 CFM (453.1 L/s) and 2.0" Hg manifold Depression

DIMENSIONS



A	B	C	D	E	F	G	H	I	J
OVERALL HEIGHT	FLANGE WIDTH	CTR TO INLET	THROTTLE BODY HEIGHT	INLET DIA.	BORE	MAX WIDTH	HOLE SPACING	FUEL INLET NPT	FRONT TO CENTER
13.56"	6.88"	4.66"	3.75"	6.13"	3.69"	8.38"	5.63"	1.5"	3.63"
344.4mm	(174.8mm)	(118.4mm)	(95.25mm)	(155.7mm)	(93.7mm)	(212.8mm)	(143.0mm)	(39.4mm)	(92.2mm)

COMPONENTS



COMPONENTS

ITEM#	PART #	DESCRIPTION
1	S1-12	Screw, Pan Hd, 8-32 X 5/16 L
2	F2-11	Fly, 4.00" (For T2-17)
	F2-9	Fly, 3.50" (For T2-67 & T2-80)
3	NSS	Throttle, Model 600, 4.19" Bore
	NSS	Throttle, Model 600, 3.69" Bore
	NSS	Throttle, Model 600, 3.69" Bore
4	AL1-12-1	Lever, 200D Throttle
5	AL1-11-2	Lever, Thr Stop 1/2"
6	S5-10	Shaft/600-1/2In, 4.19" Bore
	S5-39	Shaft, Throttle 600VF
	S5-5	Shaft, Throttle 1/2" 3.69" Bore
7	RK-B3-43-1	Repair Kit, Bearing Seal Housing
8	B1-31-2	Gas Body, 600VF (High Btu)
9	S3-35	O-Ring, .479" Id .101" Cs Viton
10	W1-38	Washer, .515X.872X.056, Steel
11	S2-33	Spring/600 Load Adj
12	NSS	Screw, Power Valve
13	V2-60	Valve, Load Adj 600VF 1000Btu
14	W1-63	Washer, .263X.744X.051, Steel
15	N1-22	Nut, Lock W/Nylon Insert, 1/4-28
16	J1-33	Power Jet, 600VF Lo Btu
	NSS	Jet, Load Adj 600VF
17	S3-78	O-Ring, 1.734" Id .139" Cs Nbr
18	J1-23	Jet, Gas 600VF 1.125" Id
19	S1-3	Screw 10-24X5/8 Sltdfil Sltdzn
20	V2-21-3	Valve, Gas Mixer 600 Series Ng
	NSS	Valve, Gas Mixer Land Fill
	V2-64	Valve, Gas Mixer 600VF1 Dg
	V2-63	Valve, Gas Mixer 600 Ulb Mflow
	NSS	Valve, Gas Mixer Lean FB
21	W1-99	Washer, .379X1.500X.032, 18-8Ss
22	S3-76	O-Ring, 1.460" Id .139" Cs Viton
23	P4-3	Piston, Air Valve 600VF
	P4-9	Piston, Air Valve 600VF
24	S1-19	Screw 12-24X5/8 Sltdfil Sltdzn
25	NSS	Body Assy, 600
26	S3-82	O-Ring, .359" Id .139" Cs Nbr
27	NSS	Air Valve Assy, 600
28	S5-29	Shaft, Gas Valve 600
29	AD1-20-3	Diaphragm, Assy Mixer Fvmq 600
30	S1-12	Screw, Pan Hd, 8-32 X 5/16 L
31	S2-32-1	Spring, Air Valve, Updraft Zinc
	S2-32-2	Spring, Air Valve, Downdraft, Yellow
	S2-32-3	Spring, Air Valve, Sidedraft, Green
	S2-123	Spring, Air Valve, Updraft, H.Flow, Blue
	S2-41	Spring, Air Valve, Updraft, Waukesha, VHP RED
32	C1-32	Cover, Air Valve 600 / 600VF
33	S1-3	Screw 10-24X5/8 Sltdfil Sltdzn

MODULE COMPONENTS & ACCESSORIES

MIXERS

PART#	DESCRIPTION
AB1-30-23L	Mixer 600VF3 Updraft 59023L
AB1-30-3	Mixer Assembly 600VF1
AB1-30-3X	Mixer Assembly 600VF1
AB1-30-6	Mixer 600VF3 Updraft
AB1-30-6S	Mixer 600VF3 Sidedraft
AB1-30-6SL	Mixer 600VF3 Sidedraft .435 Ht
AB1-30-6X	Mixer 600VF3 Downdraft

THROTTLE BODIES

PART#	DESCRIPTION
AS5-38	Shaft Throttle 600Vfd Assy
AT2-18-3	Throttle Body Assy 600Vfd
AT2-18-573	Throttle Body 600Vfd
AT2-67	T'Body, 600VF,3.5", W/Lever

AIR HORN/INLET

PART#	DESCRIPTION
AA2-16	Air Horn 90Deg By 6" To 600
AA2-22	In-line, Sand Cast 6.625"

GAS INLET

(BODY, PWR SCREW, JET, GASKETS & BOLTS)

PART#	DESCRIPTION
AB1-31	Gas Body
AB1-31-2	Gas Body, High BTU
AB1-31-3	Gas Body, Low BTU

MIXTURE OUTLET

(BODY, FLY, BEARINGS, SHAFT, LVR & GASKETS)

PART#	DESCRIPTION
AT2-17	Throat Assy, Sae 4" Flange: 4"
AT2-67	T'Body, 600VF,3.5", W/Lever

REPAIR KIT

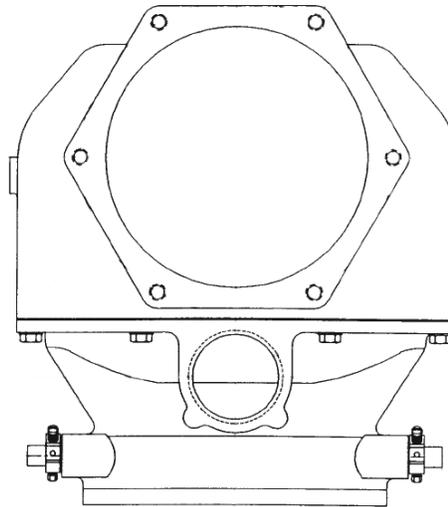
PART#	DESCRIPTION
RKD1-20-3	Rep.Kit600VF Diaph/Plate/Bush
RK-B3-43-1	Repair Kit, Bearing Seal Housing
RK-B3-479	Repair Kit (Inc. bearing, seal & sleeve)

GAS VALVE/JET KIT

(GAS VALVE, JET, SCREW, O-RING & LABEL)

PART#	DESCRIPTION
CKV2-21-3	600VF N/G
CKV2-21-4	Kit, VF 600 NG F/Back
CKV2-50679-001	Kit, VF 600 Low BTU
CKV2-62	600VF Feedback Lean (Catalytic)
CKV2-63	600VF ULB Med. Flow
CKV2-64	600VF DG
CKV2-64-3	Kit, VF 600 DG 500-650
CKV2-65	600VF LF 450-540 Stoich
CKV2-69	600VF LFG (400Btu/Ft3)
CKV2-84	Kit, 600 VF Cat (336-6861)
CKV2-87	Waukesha OEM SRS
CKV2-94	Conversion Kit, Feedback Rich
CKV2-95	Kit, VF 600 NG 850-900
CKV2-95-2	Kit, VF 600 NG 850-900
CKV2-96	600VF Propane (Pos. Pressure)
CKV2-101	Kit, VF 600 DG
CKV2-113	Kit, VF 600 NG 700-800
CKV2-116	Kit, 600 VF Conversion
CKV2-118	Kit, 600 VF
CKV2-125	Kit, VF 600 NG

Model 600D Varifuel



DESCRIPTION

The Model 600DVF is a duplex carburetor comprised of two Varifuel 600VF mixers mounted to a common throttle/gas inlet body for applications with airflow requirements up to 1600 CFM (7551 L/s). The Model 600VF Mixer is a concentric flow type air valve carburetor with a precision gas metering valve attached to the air valve. The air valve and gas valve motion is linear in relation to the volumetric flow. The air/fuel ratio is controlled by the adjustable power valve and the shape of the gas metering valve and the pressure from the gas regulator.

The gas valve and jet combinations are easily replaced to provide performance and emission levels as defined by each customer to meet various fuel and burn strategies. Gas valves and jets can be ordered in matching sets. These units are designed for 14,000 MTBF (mean time between failures). Advanced guide bushing material provides a more durable solution over the standard 600D carburetor.

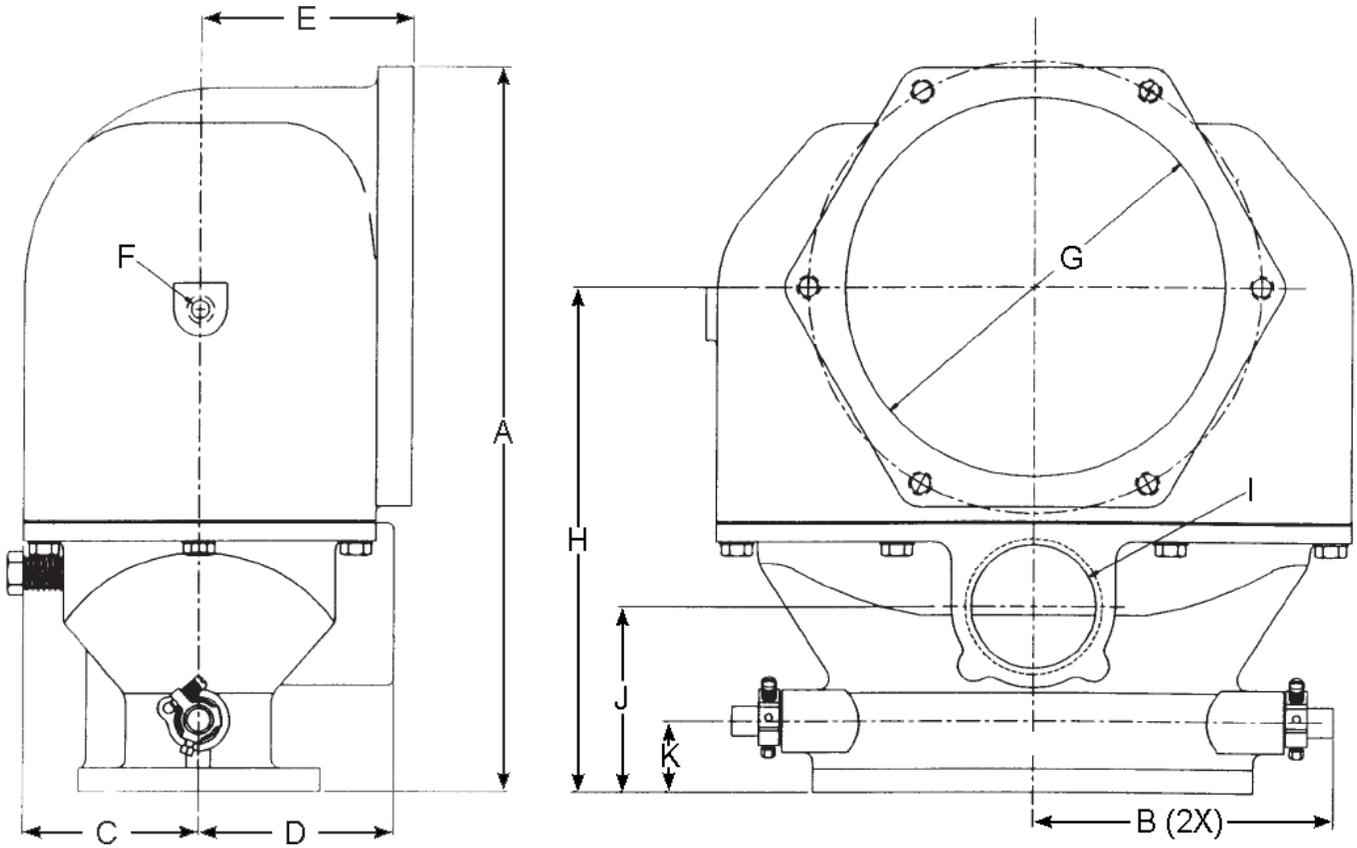
The 600D Varifuel Mixer is not available as an assembly, but it is ordered in modular components to be assembled to the desired configuration.

SPECIFICATIONS

Fuel Type

LPG Vapor.....	90% + Propane
Natural Gas	85% + Methane
Digester Gas.....	56-72% Methane
Landfill Gas.....	45-56% Methane
Inlet Pressure	+5.0" w.c. (1.24 kPa) over Air Inlet (Idle Setting)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Various: Updraft, downdraft, sidedraft
Diaphragm Material	Fluorosilicone
HP/kW	1,000 HP (745.7 kW) @ 1600 CFM (7551 L/s) and 2.0" Hg manifold depression

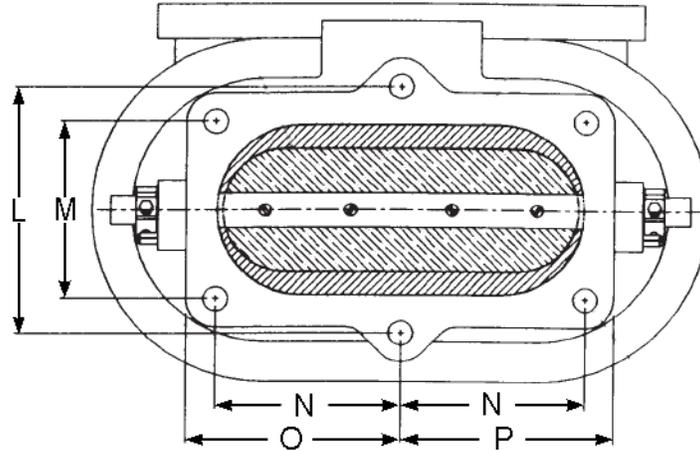
DIMENSIONS



600D VARIFUEL CARBURETOR (SIDE DRAFT, T2-62 OR T2-18 SHOWN)

A	B	C	D	E	F	G	H	I	J
OVERALL HEIGHT	FLANGE WIDTH	CTR TO INLET	CENTER TO INLET	CENTER TO FLANGE	BALANCE INPUT	INLET DIA.	HEIGHT TO CTR AIR INLET	FUEL INLET NPT	HEIGHT TO CTR GAS INLET
15.31"	6.3"	3.75"	4.12"	6.13"	.375	8.0"	10.58"	2.5"	3.94"
(388.9mm)	(160.0mm)	(95.25mm)	(104.6mm)	(155.7mm)	(9.53mm)	(203.0mm)	(268.7mm)	(63.5mm)	(100.0mm)

DIMENSIONS (CONTINUED)



L	M	N	O	P
CENTER BOLT SPACING	END BOLT SPACING	END TO CENTER BOLT SPACING	END TO CENTER BOLT SPACING	END TO CENTER BOLT SPACING
5.38" (136.6MM)	3.88" (98.5mm)	4.0" (101.6mm)	4.63" (117.6mm)	4.62" (117.3mm)

MODULE COMPONENTS & ACCESSORIES

MIXERS

REPAIR KIT

PART#	DESCRIPTION	PART#	DESCRIPTION
AB1-30-23L	Mixer 600VF3 Updraft 59023L	RKD1-20-3	Rep.Kit600VF Diaph/Plate/Bush
AB1-30-3	Mixer Assembly 600VF1	RK-B3-43-1	Repair Kit, Bearing Seal Housing
AB1-30-3X	Mixer Assembly 600VF1		
AB1-30-6	Mixer 600VF3 Updraft		
AB1-30-6S	Mixer 600VF3 Sidedraft		
AB1-30-6SL	Mixer 600VF3 Sidedraft .435 Ht		
AB1-30-6X	Mixer 600VF3 Downdraft		

(BODY, POWER SCREW, JET, GASKETS & BOLTS)

PART#	DESCRIPTION
AB1-31	Gas Body
AB1-31-2	Gas Body, High BTU
AB1-31-3	Gas Body, Low BTU

THROTTLE BODIES

REPAIR KIT

PART#	DESCRIPTION	PART#	DESCRIPTION
AS5-38	Assembly Shaft Throttle 600VFD		
AT2-18-3	Throttle Body Assy 600VFD	RKD1-20-3	Rep.Kit600VF Diaph/Plate/Bush
AT2-18-573	Throttle Body 600VFD	RK-B-43-1	Repair Kit, Bearing Seal Housing
AT2-67	T'Body, 600VF, 3.5", W/Lever	RK-B3-479	Repair Kit (Inc. bearing, seal & sleeve)

AIR HORN/INLET

PART#	DESCRIPTION
AA2-17	Air Horn, Ingersoll-Rand 8SVG
AA2-18	Air Horn, 8" dia. 90 degree (side)
AA2-62	Air Horn, 8" dia. 90 degree (end)

GAS VALVE/JET KIT

(GAS VALVE, JET, SCREW, O-RING & LABEL)

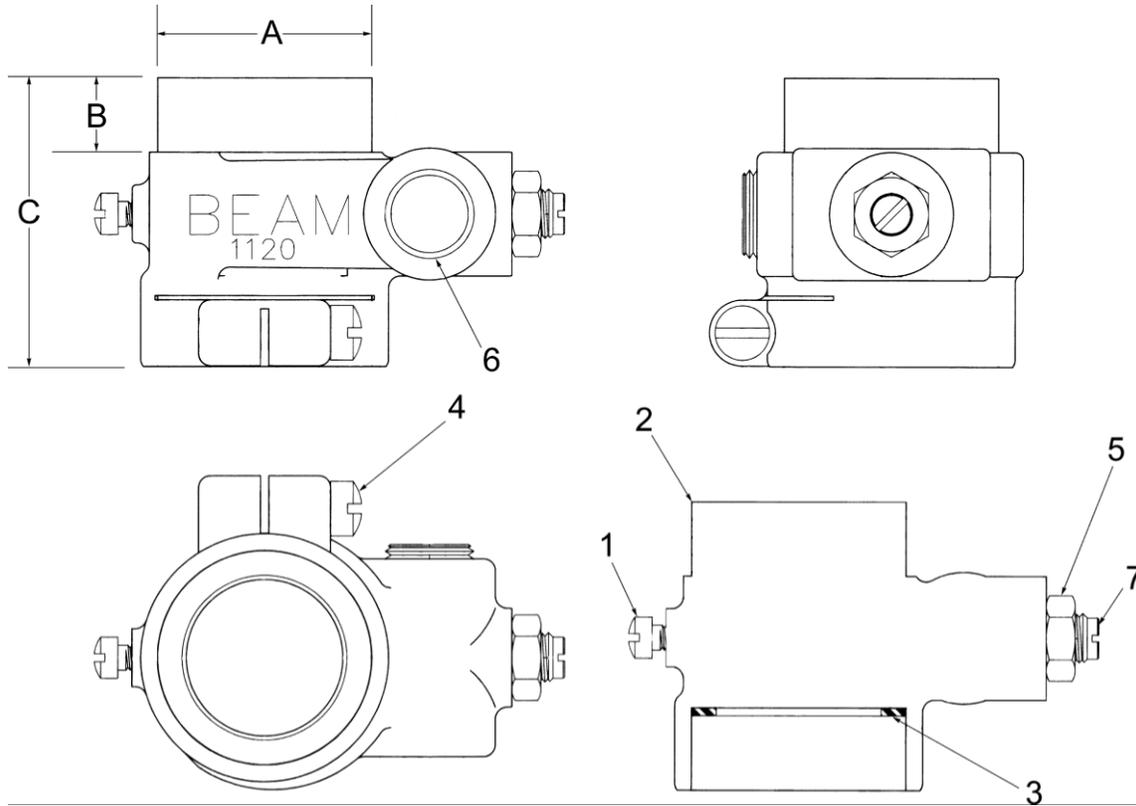
PART#	DESCRIPTION
CKV2-21-3	600VF N/G
CKV2-62	600VF Feedback Lean (Catalytic)
CKV2-63	600VF UIb Med. Flow
CKV2-64	600VF DG
CKV2-65	600VF LFG
CKV2-69	600VF LFG (400BTU/FT3)
CKV2-94	Conversion Kit, Feedback Rich
CKV2-96	600VF Propane (Pos. Pressure)

Fuel Metering

Carburetor Adapters	112
Venturis	118
Choice Fuel® Custom Outlet Fittings	123
130 Series Load Blocks	124
Power Adjustment Elbow	125
100 Series Fuel Tubes	126
2F Series Spud in Tubes	127
Vacuum Switches	128
Commander OZ Air/Fuel Control Unit.....	129
Fuel Control Parts.....	131
In Line Power Valves AB1-16 / AB1-32	132
FCV Solenoid Kit	133
Fuel Control Valves	134
Regulator Control Valves.....	135

Carburetor Adapters

1120 / 1770



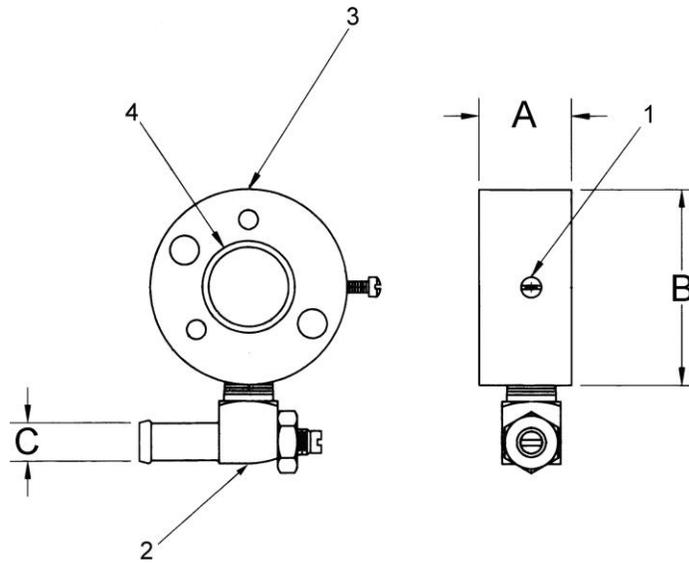
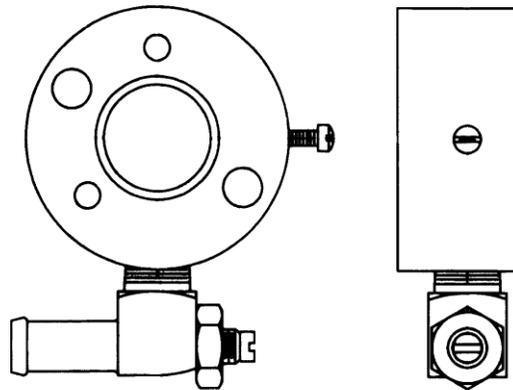
PART#	DESCRIPTION	A DIAMETER	B HEIGHT (NECK)	C OVERALL HEIGHT
1120-A	Carb Adapter Less Venturi	1.625" 41.3mm	14.3mm (.562")	55.5mm (2.187")
1770-S	Carb Adapter w/O Venturi	1.82" (46.2mm)	14.3mm (.562")	55.5mm (2.187")

COMPONENT LIST

ITEM #	PART #	DESCRIPTION
1	NSS	Slotted 10-32UNF-2A
2	NSS	Carburetor Adapter
3	NSS	Gasket, Carburetor Airhorn
4	NSS	Screw, machine, Filister Head
5	NSS	Nut, Jam (3/8-24UNF-2B)
6	NSS	Plug, Set Screw 3/8 NPT
7	NSS	Screw, Power Adjustment

NSS = Not Serviced Separately

1450A



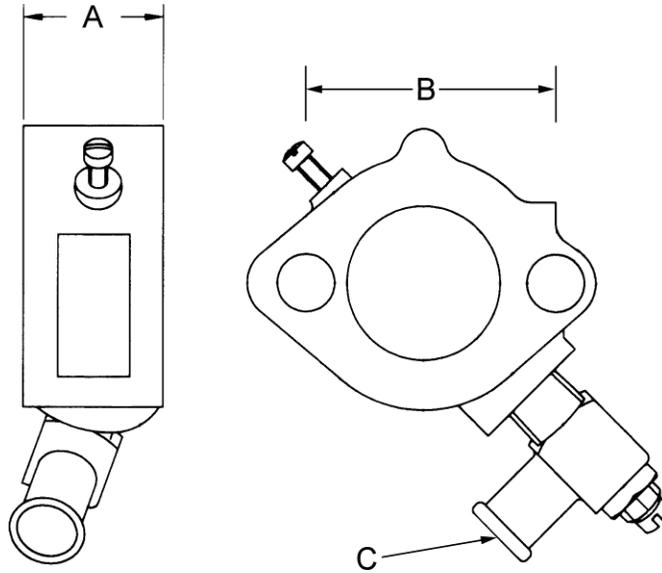
DIMENSIONS

PART#	DESCRIPTION	A HEIGHT (NECK)	B DIAMETER	C OD
1450A	Carb Adapter	.94" (23.8mm)	2.0" (51mm)	0.5" (12.7mm)

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	NSS	Screw, Venturi Set
2	NSS	Elbow-Power Adjustment
3	NSS	Body, Carburetor Adapter
4	NSS	Venturi

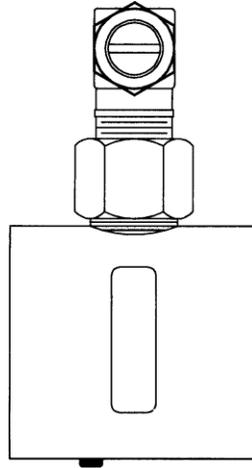
1451 / 1455



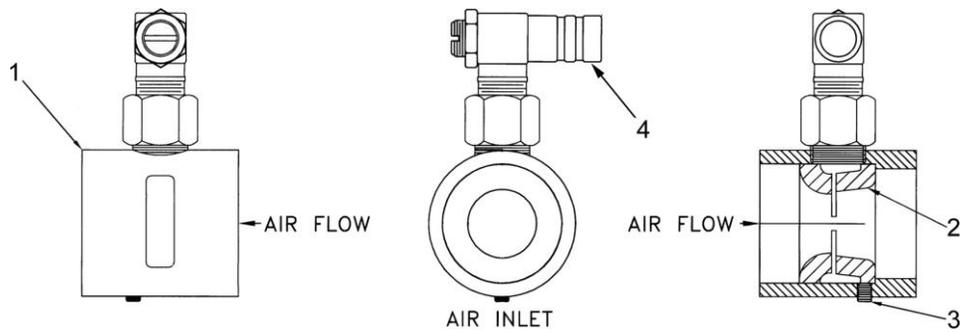
DIMENSIONS

PART#	DESCRIPTION	A	B	C
		HEIGHT	HOLE SPACING	OD
1451	Carb Adapter Less Venturi	1.14" (29.0mm)	2.0" (50.8mm)	0.5" (12.7mm)
1455	Carb Adapter Less Venturi	1.13" (28.6mm)	N/A	0.5" (12.7mm)

200-1330-1

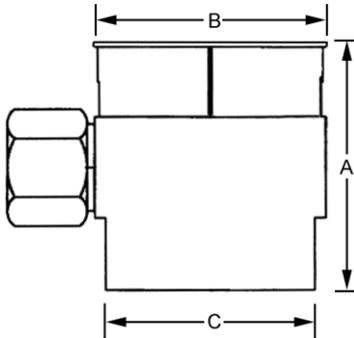


DIMENSIONS

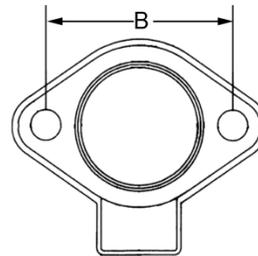
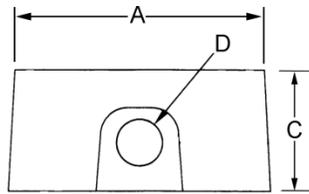


ITEM#	PART#	DESCRIPTION
1	NSS	2" Dia. Hose Adapter
2	NSS	Venturi, #30
3	NSS	Screw, 10-32 x 1/4 Torx Zinc
4	NSS	Power Adjustment Elbow, 5/8 Hose x 3/8 NPT

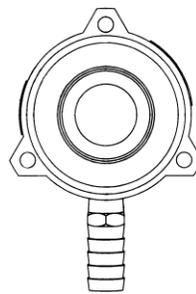
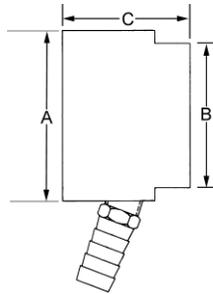
201 / 204



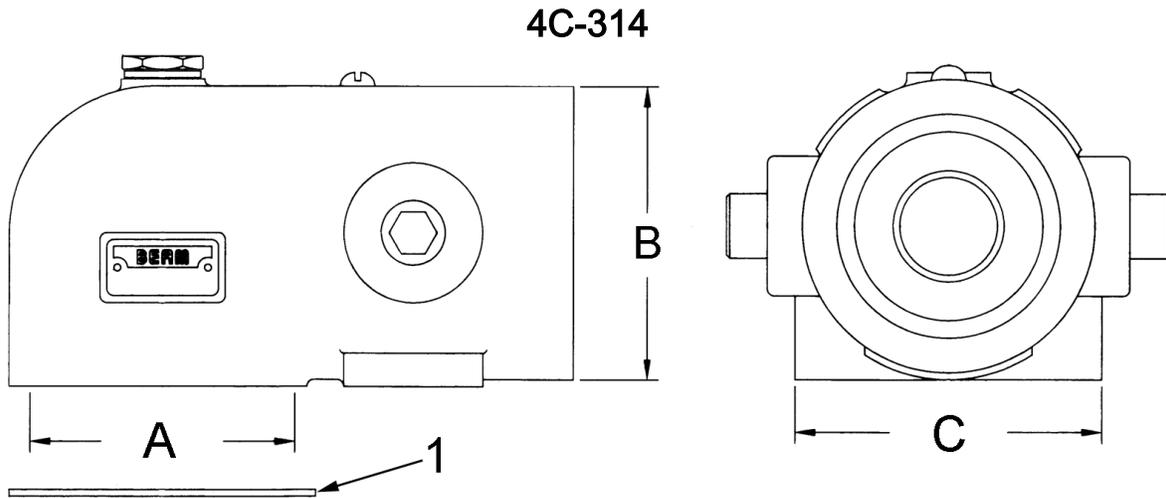
ITEM	DESCRIPTION	HEIGHT	INLET OD	OUTLET		INLET NPT	VENTURI
				OD	OD		
200-1330	Carb Adapter, Hose 2" OD x .375"	2.13" (54.1mm)	2.0" (50.8mm)	2.0" (50.8mm)		3/8"	#30
201-1130	Carburetor Adapter, Air Horn	2.13" (54.1mm)	1.81 (46.0mm)	2.0" (50.8mm)		3/8"	#30
204-44	Carburetor Adapter	2.725" (69.9mm)	1.57" (40.0")	2.0" (50.8mm)		1/4"	#24
204-67	Adapter, Air cleaner mounting, 1.375" x 1.737", 1/4 NPT, 1.58	2.725" (69.9mm)	1.57" (40.0")	2.0" (50.8mm)		1/4"	#26



PART#	DESCRIPTION	INLET OD	HOLE SPACING	HEIGHT	INLET NPT	VENTURI
204-27	Adapter, Flange mounting (2), 1.375" X 1.12" 1/4 NPT	1.72" (43.7mm)	2.0" (50.8mm)	1.25" (31.8mm)	1/4"	#22



PART#	DESCRIPTION	INLET OD	OUTLET		HEIGHT	INLET	VENTURI
			OD	OD			
204-36	Adapter, Air cleaner mounting, 2.562" X 1.812", 1/4 NPT	2.05"	2.6"	1.81	1.81	1/4" NPT 1/2" HOSE BARB	#26



DIMENSIONS

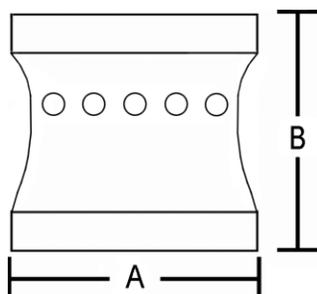
PART#	DESCRIPTION	A	B	C
		OUTLET ID	INLET OD	WIDTH
4C-314	CARBURETOR ADAPTER	2.62" 966.5mm	2.0" (50.8mm)	2.75" (69.9mm)

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	2G-113B	Gasket, Carburetor Airhorn

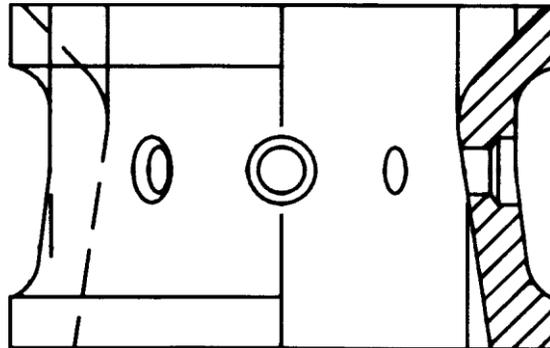
Venturis

111 / 113 Series

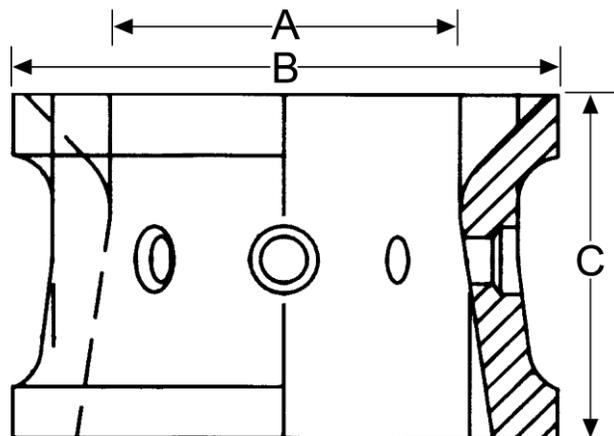


	A	B	C
PART #	DIAMETER O.D.	OVERALL HEIGHT	VENTURI
111-20	23.8 mm (.9375")	19 mm (.75")	20
113-18	31.7 mm (1.25")	31.7 mm (1.25")	18
113-20	31.7 mm (1.25")	31.7 mm (1.25")	20
113-22	31.7 mm (1.25")	31.7 mm (1.25")	22
113-26	31.7 mm (1.25")	31.7 mm (1.25")	26

134 Series

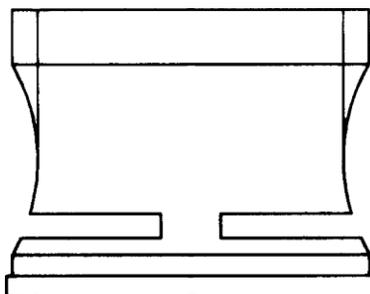


DIMENSIONS

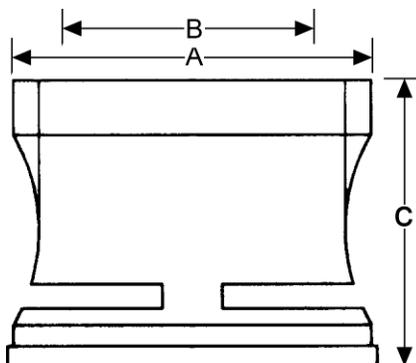


	A	B	C
	INSIDE	OUTSIDE	
PART #	DIA.	DIA.	HEIGHT
134-28	0.875 (22.2mm)	1.5" (38.1mm)	0.95 (24.1mm)

220-00-08

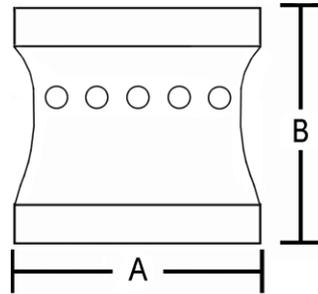


DIMENSIONS



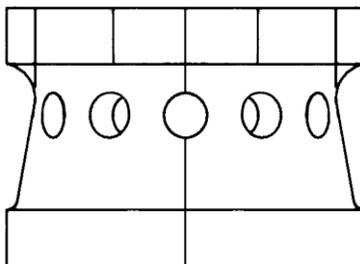
	A	B	C
	OUTSIDE		
PART#	DIA.	INSIDE DIA.	HEIGHT
225A-34	.935" (23.75mm)	.625" (15.88mm)	.75" (19.05mm)

222 Series

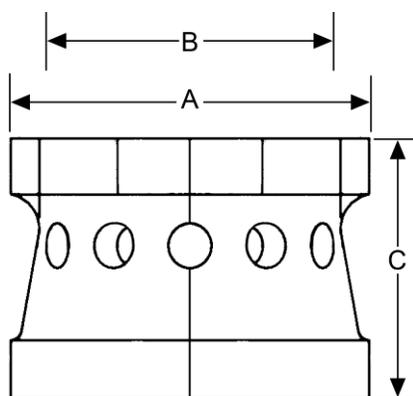


	A	B	C	D
	OUTSIDE	OVERALL		
PART #	DIA.	HEIGHT	VENTURI	MATERIAL
222-00-10	34.9 mm (1.375")	25.4 mm (1.00")	10	Aluminum
222-00-14	34.9 mm (1.375")	25.4 mm (1.00")	14	Aluminum

225A-34



DIMENSIONS

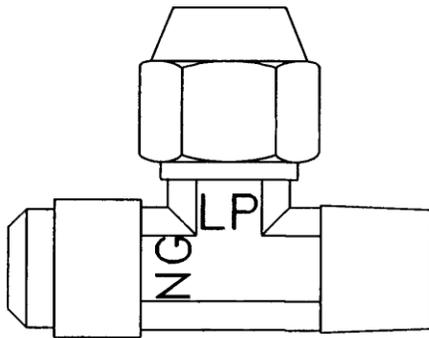


	A	B	C
	OUTSIDE		
	DIA.	INSIDE DIA.	HEIGHT
225A-34	1.99" (50.78mm)	1.062" (26.98mm)	1.44" (36.6mm)

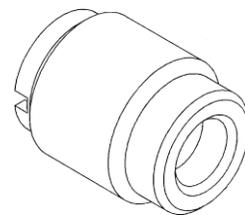
Choice Fuel® Custom Outlet Fittings

DESCRIPTION

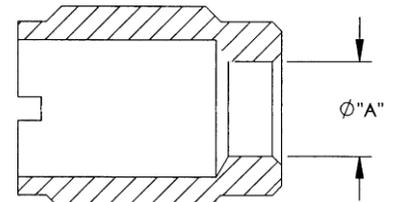
The Choice Fuel® Custom Outlet Fitting was designed with the installer in mind. By easily moving the vapor hose coming from the regulator from one leg of the tee to the other, the fuel system can be run on either LPG or Natural Gas. Any combination of jet sizes can be used for a wide range of engine displacement for proper fuel metering to desired air/fuel ratios for either fuel.



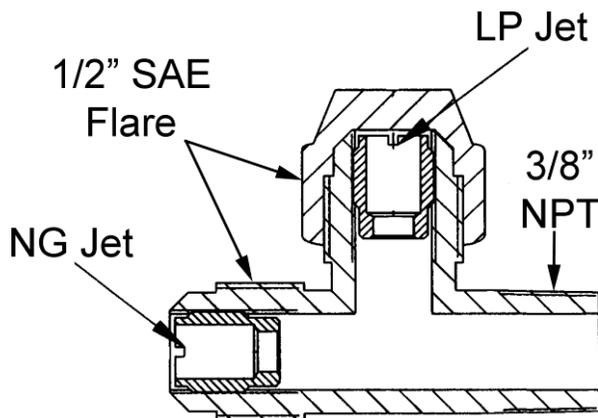
Custom Fuel DUAL Outlet Tee,
P/N AF4-31175-XXX. View from the outside.
Note the fuel labels: LP=LPG; NG=Natural Gas



Jet, Isometric View



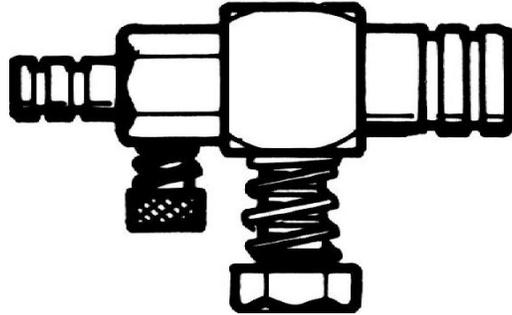
Cutaway of Jet, depicting the orifice diameter Ø "A" (in millimeters).



Cutaway view showing the jets installed.

PART NO.	Ø "A" mm	PART NO.	Ø "A" mm
J1-30655-025	4.2	J1-30655-021	5.9
J1-30655-026	4.3	J1-30655-022	6.0
J1-30655-027	4.4	J1-30655-023	6.1
J1-30655-028	4.5	J1-30655-024	6.2
J1-30655-029	4.6	J1-30655-019	6.3
J1-30655-030	4.7	J1-30655-010	6.4
J1-30655-031	4.8	J1-30655-011	6.5
J1-30655-032	4.9	J1-30655-012	6.6
J1-30655-033	5.0	J1-30655-003	6.7
J1-30655-004	5.1	J1-30655-001	6.8
J1-30655-005	5.2	J1-30655-013	6.9
J1-30655-006	5.3	J1-30655-014	7.0
J1-30655-002	5.4	J1-30655-015	7.1
J1-30655-007	5.5	J1-30655-016	7.2
J1-30655-008	5.6	J1-30655-017	7.3
J1-30655-009	5.7	J1-30655-018	7.4
J1-30655-020	5.8	J1-30655-034	8.0

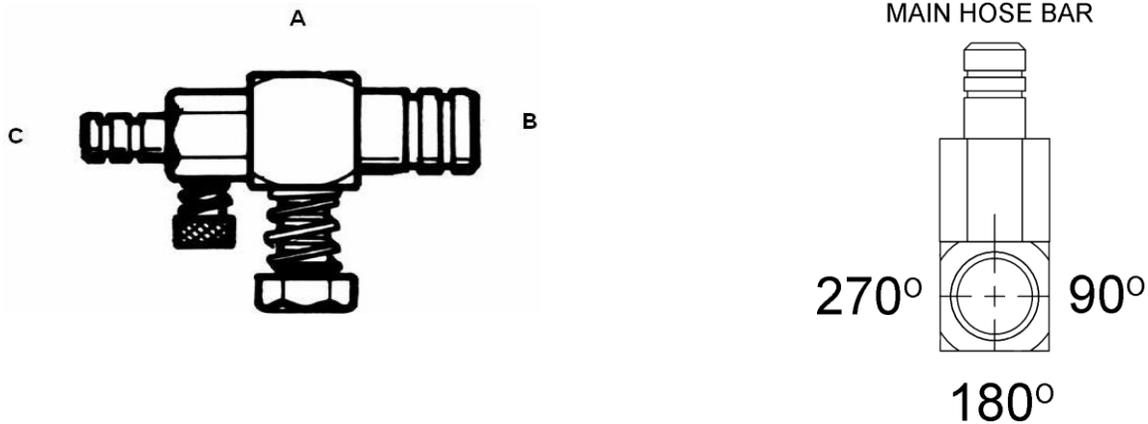
130 Series Load Blocks



DESCRIPTION

There are different styles of load blocks (with and without idle systems), to match your needs, when using fuel tubes or carburetor adapters that require a separate load block. These load blocks offer you great versatility, as they can be mounted in any direction either at the carburetor or on the fuel regulator.

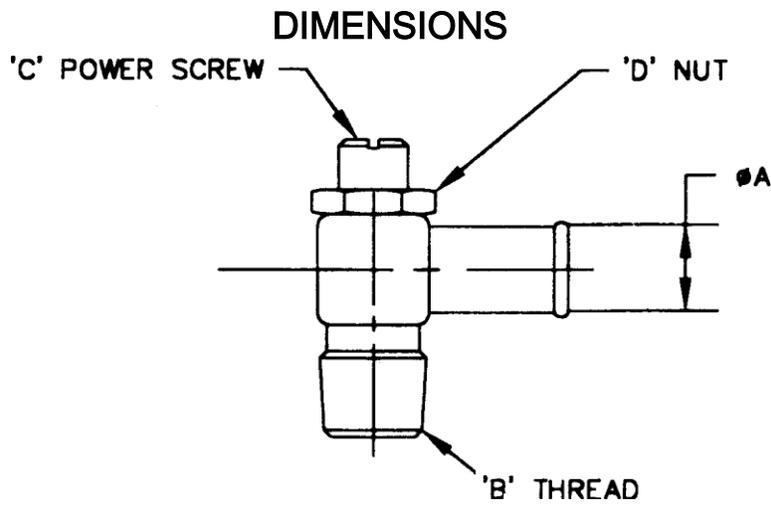
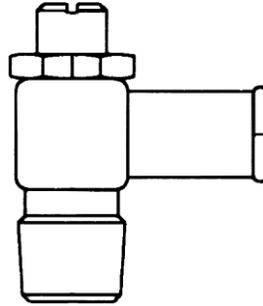
DIMENSIONS



LOAD BLOCKS

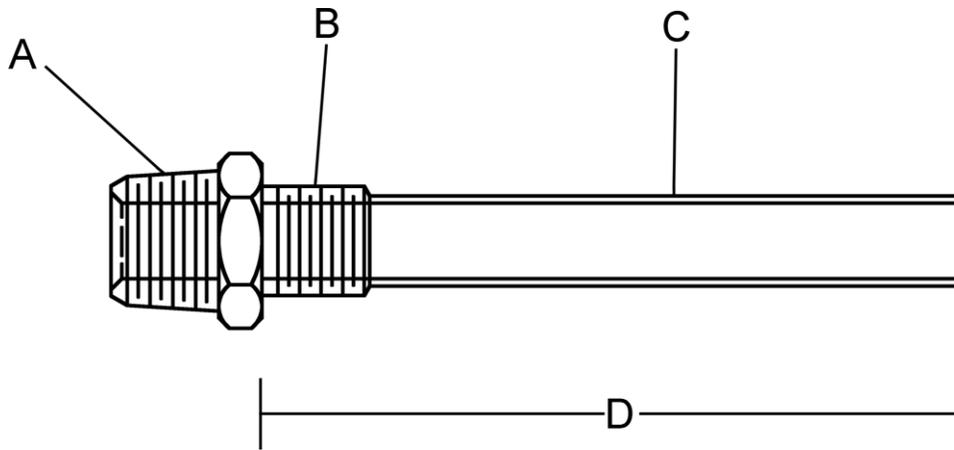
	A	B	C	
	THREAD SIZE	TUBE SIZE	TUBE SIZE	POSITION
133-03	1/4 NPT	3/8"	1/4"	180°
133-08	1/4 NPT	1/2"	1/4"	90°
133-17	1/4 NPT	3/8"	1/4"	90°

Power Adjustment Elbow



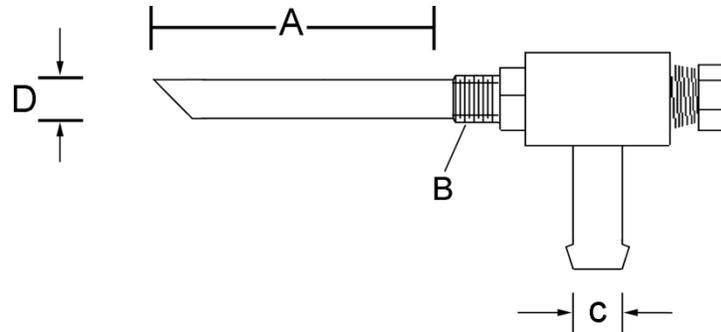
	A	B	C	D	E
			POWER		
ITEM #	DIA.	THREAD SIZE	SCREW	NUT	MATERIAL
4H-204B-1	0.5"	1/4" NPT	NSS	NSS	BRASS
4H-305Z	0.63"	1/2" NPT	NSS	NSS	ZINC

100 Series Fuel Tubes



	A	B	C	D
	CONNECTOR	ATTACHING	TUBE DIAMETER	TUBE
PART #	THREAD (NPT)	THREAD	(O.D.)	LENGTH
100-29	1/8"	8mm	0.26"	2.03"
100-30	1/8"	8mm	0.26"	2.12"

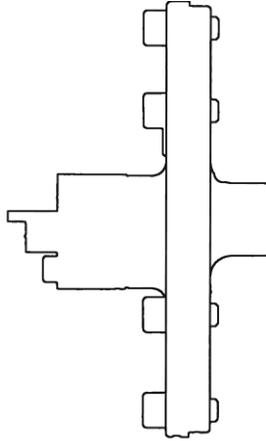
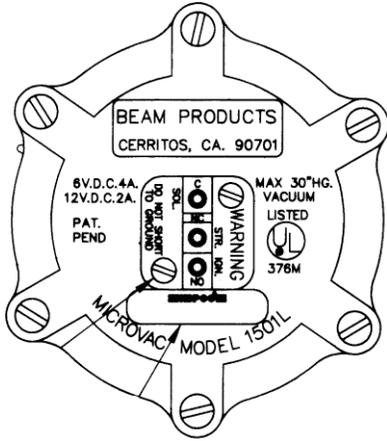
2F Series Spud in Tubes



	A	B	C	D
		THREAD	INLET TUBE	
PART #	TUBE LENGTH	SIZE	DIA.	TUBE DIA.
2F-125	50.8 mm (2.0")	3/8"-24	9.5 mm (.375")	7.9 mm (.312")
2F-247	63.5 mm (1.25")	5/16"-25	9.5 mm (.375")	5.7 mm (.228")
2F-256	63.5 mm (1.25")	5/16"-26	9.5 mm (.375")	5.7 mm (.228")
2F-275	53.9 mm (2.125")	5/16"-27	9.5 mm (.375")	5.7 mm (.228")
2F-275A	53.9 mm (2.125")	5/16"-28	9.5 mm (.375")	5.7 mm (.228")

PART #	DESCRIPTION
2F-249	GLAND NUT

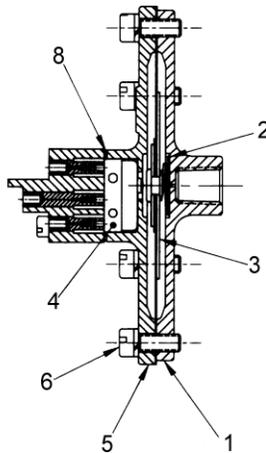
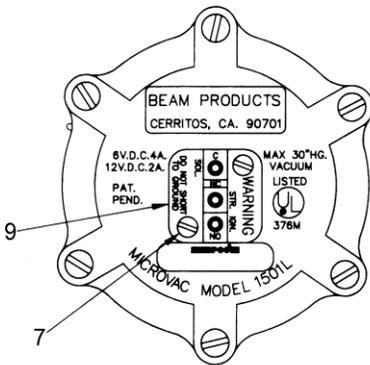
Vacuum Switches



PART#	DESCRIPTION
1501-28A	Microswitch, W/Match Spring
1501-PA	Vac Switch Kit W/Wires & Term
1501-RK	Repair Kit For 1501-L

P/N: 1501-L

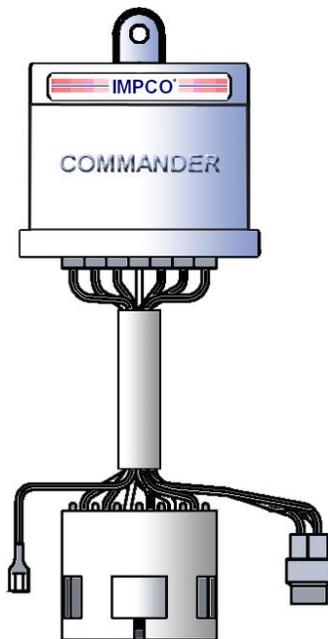
Certification: UL (AU1682)



ITEM#	PART#	DESCRIPTION
1	1501-21	Cover, Back
2	1501-5A*	Spring, compression
3	1501-6*	Diaphragm-Microvac
4	1501-28*	Casting, Front Cover
5	1501-23	Screw, 10-32 UNF 2A .50"L
6	103208-FS*	Screw, 10-32 UNF 2A .62"L
7	063207-B*	Screw 6-32 UNF .44L
8	1501-24*	Shim, Microswitch
9	NSS*	Adapter, Switch Terminal

*Included in repair kit 1501-RK

Commander OZ Air/Fuel Control Unit



IMPCO ECM Commander

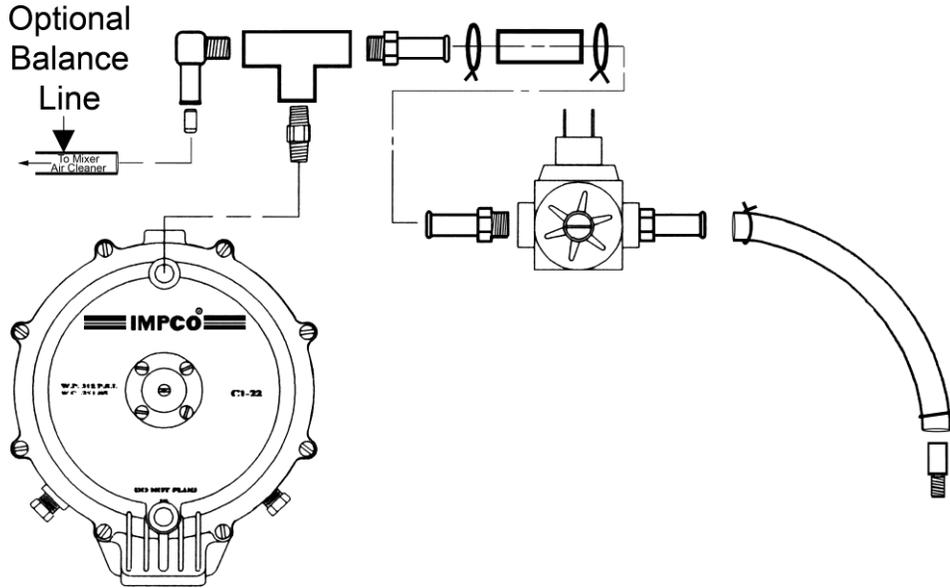
DESCRIPTION

The Commander is an advanced digital closed-loop fuel control processor for alternative fuels. The EK-CDP-1 Kit contains all of the electrical components required to convert your IMPCO open-loop fuel system to a state-of-the-art closed loop fuel control technology and supplies the required electrical parts to convert IMPCO open-loop fuel systems to closed-loop feedback control. The Commander controller is designed to reduce overall exhaust emissions without the use of catalytic converters. The compact construction provides a sealed enclosure for operation in harsh industrial engine environments. The small electronic module controls fuel pressure based on engine speed and rich/lean status from the oxygen sensor. The Commander’s microprocessor reads and calculates this data to provide a precise stoichiometric air/fuel ratio. The IMPCO Commander delivers consistent exhaust emissions, drivability and fuel economy at a reasonable cost. The controller is compatible with all IMPCO feedback mixers.

MODEL/SERIES CARBURETOR	RECOMMENDED AIR GAS VALVE
55 Series	AV1-14925 with “O” Series type converter.
100/125 Series	AV1-1447-2
125M-10 Series, Dual Fuel	AV1-1447-4
200/225 Series	AV1-1245 & AV1-1245-2
300A 20 Series	V2-49
300A 50/70 Series	AV2-50
425 Series	AV1-1651-2

COMPONENTS

PART#	DESCRIPTION	QTY
EK-CDP-1	OZ Commander Kit	1
CDP-1DX-4	Microprocessor 4Cyl	1



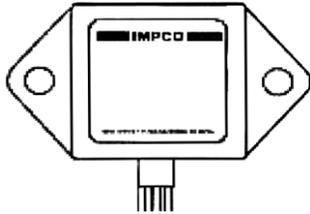
Typical Setup for a Commander

EK-CDP-1 COMPONENT PART LIST

TEM#	PART#	DESCRIPTION	QTY
1	AE3-31273-001	Controller, CDPOZ Electronic	1
2	NSS	Wire Harness Assay, Commander	1
3	NSS	Oxygen Sensor Boss 1018	1
4	NSS	Oxygen Sensor With Connector	1
5	J1-21*	Jet, Feed Back Bleed	1
6	F4-12*	Fitting, 1/8" NPT 3/8" Hose 90EI Nyl	1
7	NSS*	Fitting, 1/8" NPT Female Tee Brass	1
8	NSS*	Hose, 3/8" ID 2"L Fuel/Oil	1
9	NSS*	Clamp, Hose, .69" OD	2
10	NSS*	FCV Solenoid Assay, IMPCO	1
11	NSS*	Fitting, 1/8" NPT 3/8" Hose Brass	2
12	NSS*	Hose, Vacuum 1/4" ID 4' Length	1
13	F4-2*	Fitting, 1/4" Unf 1/4" Hose Vac Nip	1
14	NSS*	Fitting, 1/8" NPT 1/4" Hose Nip Brass	1
15	NSS*	Fitting, 1/8" NPT Hex Nip Brass	1

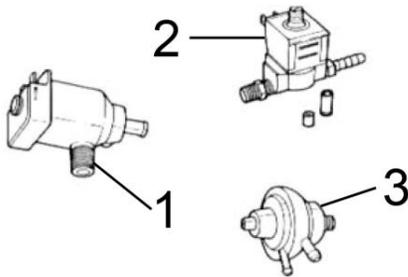
Fuel Control Parts

FUEL CONTROL PROCESSORS



ITEM #	DESCRIPTION
EK-CDP-1	Commander Kit
CDP-1DX-4	Microprocessor 4 Cyl.

SOLENOIDS, SENSORS & FUEL CONTROL PARTS



ITEM#	PART#	DESCRIPTION
1	SV	Valve, Electric Solenoid Start
2	FCV	Fuel Ctrl Valve, Comp. Feedback (Also see page on FCV Solenoid Kit)
3	VPV	Vacuum Power Valve

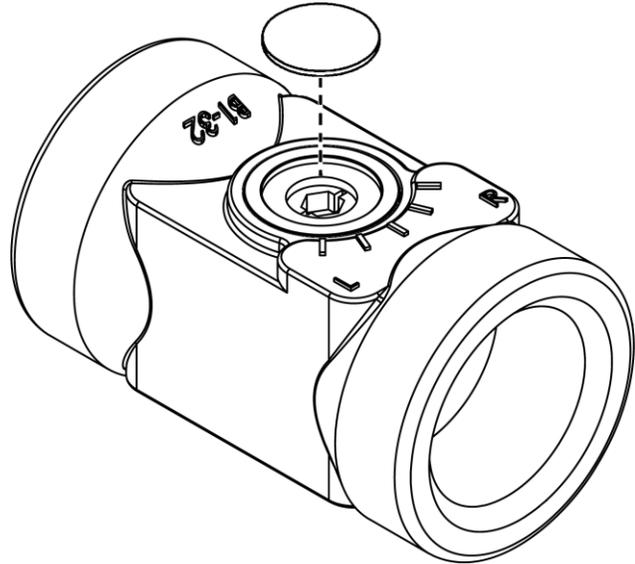
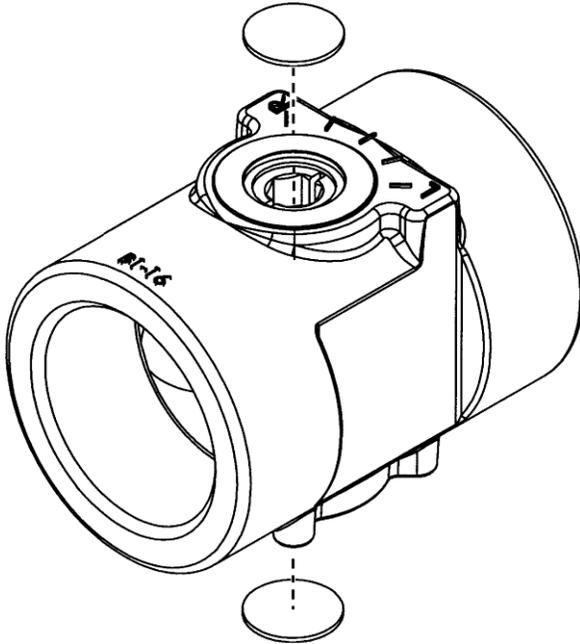
MIXTURE CONTROL OPTIONS

ITEM #	DESCRIPTION
AB1-16	Line Load Adjuster-Cat
AB1-32	Auxiliary line power adjuster, 1 NPT
AB1-54	Gas metering valve Todd meter, 1 NPT
AC1-74	Tower ass'y, adjusting, for PEV, PJ & PK regulators
J1-21	Jet, 2.5 mm (0.100"), feedback bleed
R1-29	Ring, shim, 100 series mixers, to lean fuel mixtures
R1-30	Ring, shim, 200 series mixers, to lean fuel mixtures
S2-35	Spring, JB/JK/Cobra series, Neg. 0.37 kPa (Neg. 1.50" H2O)
S2-37	Spring, secondary, PE, 0.92-1.6 kPa (3.7-6.5" H2O), brown
S2-38	Spring, JO/KO/Cobra series, Neg. 0.12 kPa (Neg. 0.50" H2O), orange
S2-106	Spring, regulator, 0.50-0.70 kPa (2.0-2.8" H2O), zinc
S2-109	Spring, regulator, PEV, 0.67-0.96 kPa (2.7-3.85" H2O), white
V3-30958	Valve, Check Diaphragm
AW-25412	Fuel Switch Assy (Ford QVM)

*Kit HK-54702-001 is available which includes the FCV valve and the components necessary to replace P/N VCS. Refer to TSB-196.

In Line Power Valves AB1-16 / AB1-32

Both AB1-16 and AB1-32 include internal O-ring seals for pressure ratings up to 30 psig and are available with tamper proof plugs for compliance with tamper resistant applications.



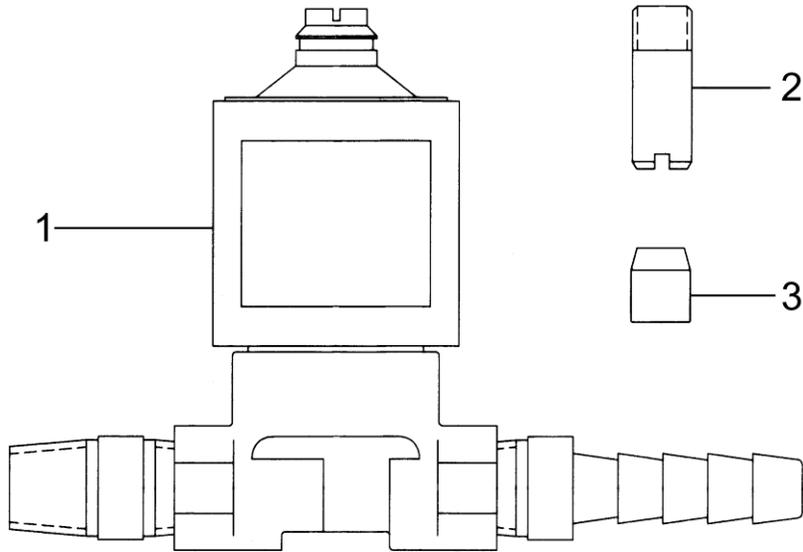
AB1-16 Shown with Tamper Resistant Plugs

AB1-32 Shown with Tamper Resistant Plug

The AB1-16 valve can be adjusted using a 5/16" or 8mm hex key from either the top or bottom of the valve. The AB1-32 valve is adjusted using a 6mm hex key from the top. Both valves are available with or without the tamper resistant plug. Refer to the following table for features, plugs and part number ordering information:

Description	Part Number	Inlet & Outlet Ports	Replacement Tamper Resistant Plugs	Qty of Plugs Included
In Line Power Valve	AB1-16	1 1/4" Female NPT	P3-17956-20	0
In Line Power Valve, Tamper Resistant	AB1-16-2			2
In Line Power Valve	AB1-32	1" Female NPT		0
In Line Power Valve, Tamper Resistant	AB1-32-2			1

FCV Solenoid Kit



DESCRIPTION

The FCV Solenoid Kit is a 12 VDC valve used to control vacuum supplied between the regulator vent and the air valve vacuum port. It is typically used with an IMPCO Commander Control unit in a closed loop system.

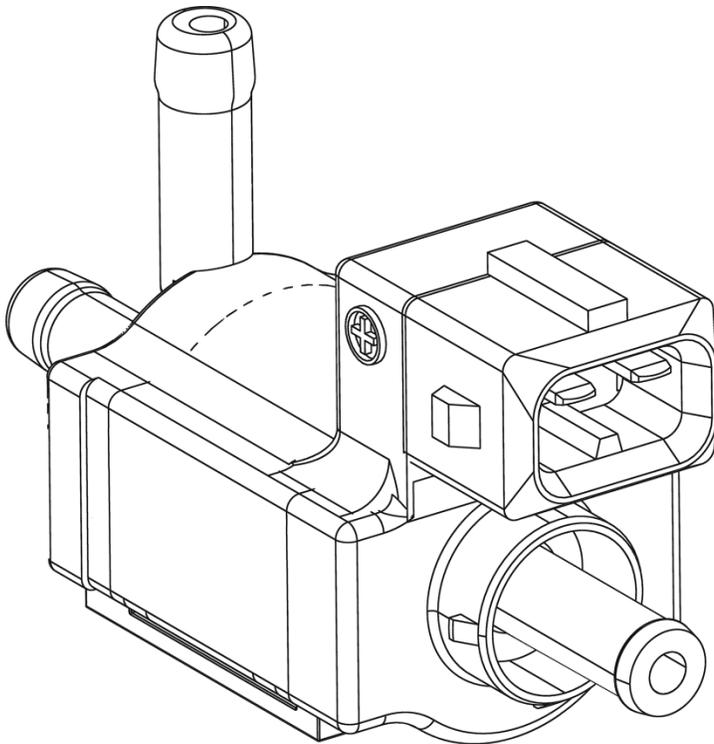
ITEM#	PART#	DESCRIPTION
1	FCV-7	Fuel Control Valve Solenoid

ACCESSORIES

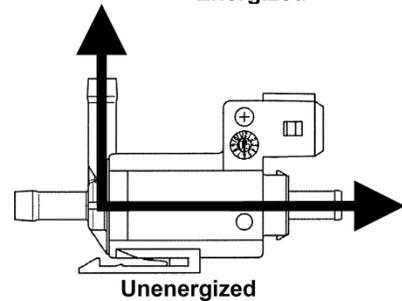
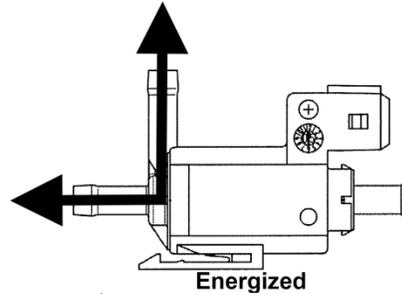
ITEM#	PART#	DESCRIPTION
2	F4-2	Fitting 1/4" 28 to 1/4" hose
3	J1-21	Feed Back Bleed

Fuel Control Valves

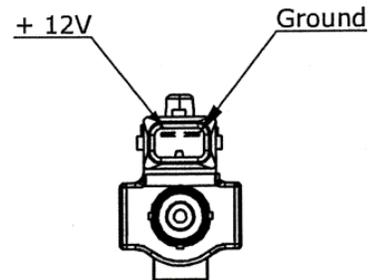
A kit, P/N HK-54702-001 includes a new valve, P/N FCV-54700-001 and the hardware necessary to replace the Vacuum Control Solenoid Valve, IMPCO P/N VCS (no longer available). The specifications for the new valve are shown below:



Fuel Control Valve
P/N: FCV-54700-001



Flow when energized and de-energized

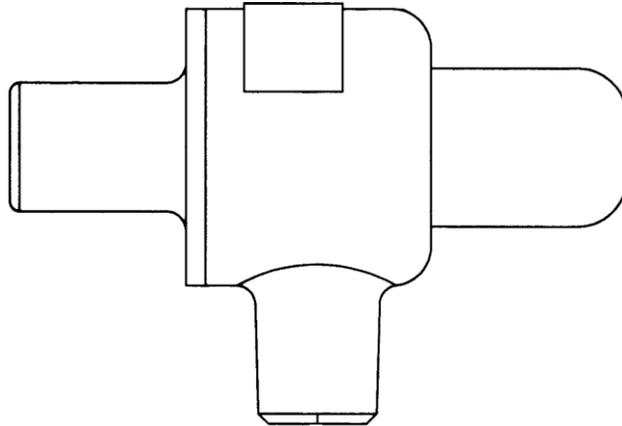


End view, showing the polarity of the connector pins

SPECIFICATIONS

- Voltage 12V Nominal; Range: 10.8-16V
- Resistance 23.0 +/-1. 2Ω
- Current ≤0.72A @ 12V, -40°C/F 100% duty cycle
- Operating Temperature Range -22° to 266°F (-30° to 130°C)
- Vibration Resistance Max 6g @ 20-350Hz
- Pressure Maximum 4.3 psi (30 kPa)(Rated on vertical Hose Nipple only)
- Hose Nipple Diameter 6.0mm (all three)

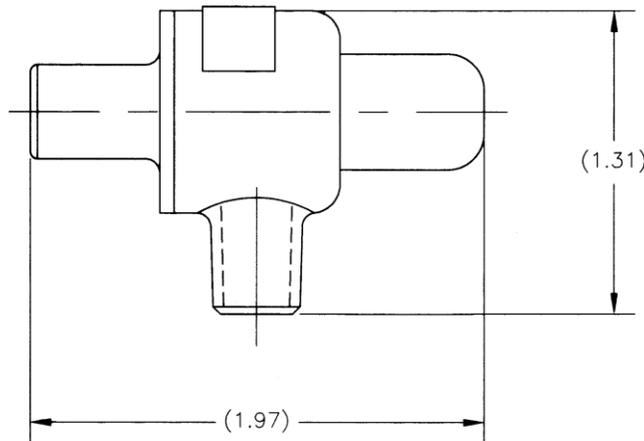
Regulator Control Valves



P/N: RCV-15834

The regulator check valve is designed to accelerate the movement of the regulator diaphragm on closed loop applications in order to ensure sufficient fuel for high load and/or high transient throttle requirements. This device is particularly useful to help prevent induction backfire.

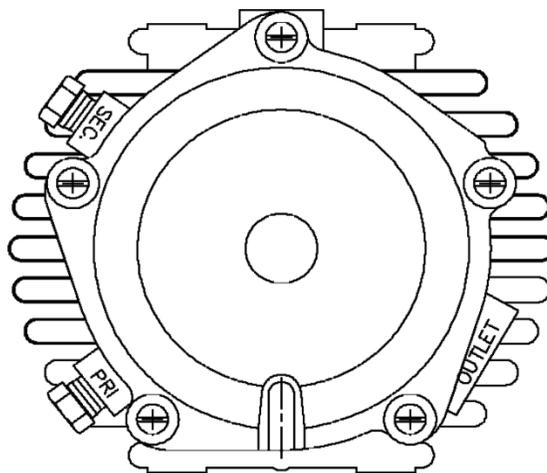
DIMENSIONS



Regulators

Model AHR50-D	137
11A17-001	139
Model T52.....	142
Model KN.....	144
2KN / 3KN Module.....	147
Model 202A	149
Model T60.....	151
Model J	155
Model PJ	159
COBRA.....	163
P-COBRA	167
Model C250A.....	171
Model 120A	175
Model L.....	178
Model E & PE	182
Model EV & PEV	187
Model IMP	193

Model AHR50-D



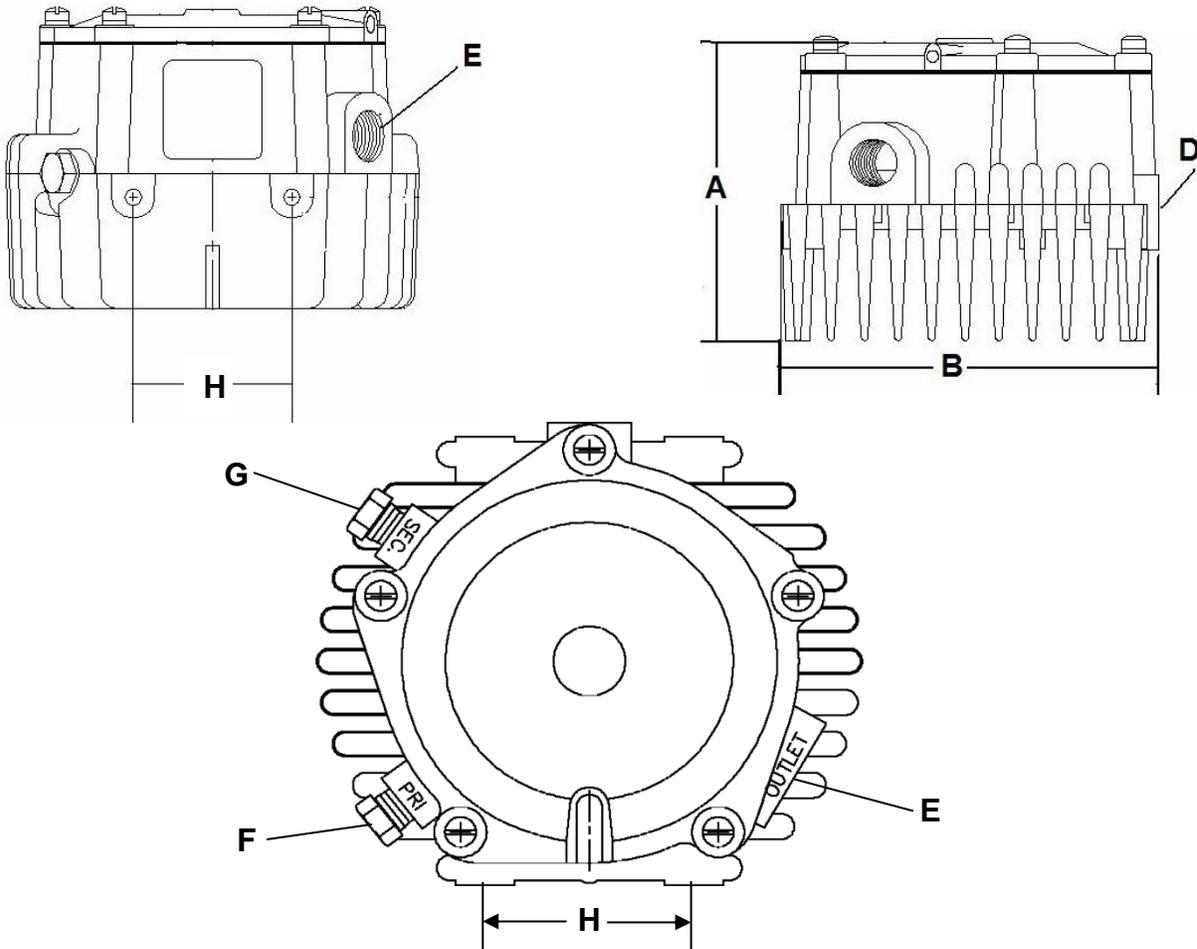
DESCRIPTION

The Model AHR-50D Vaporizer regulator is a two-stage ambient air heated regulator that does not require a direct engine fluid heating source such as engine coolant to perform the vaporization process. The regulator can be used with liquid or vapor withdrawal systems and is ideal for both portable and mobile small engine applications, especially air cooled engines. The AHR-50D is compatible with IMPCO fuel mixers and venturi adapters.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	312 psi (21.5 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure	-0.5" w.c. (-0.13 kPa.)
HP/kW Rating.....	21 hp (15.6 kW)
Operating Temperature Range.....	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Air heated
Mounting Position.....	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm Material	Fluorosilicone
Application.....	Mobile and industrial
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS



A	B	C	D	E	F	G	H	I
OVERALL HEIGHT	OVERALL WIDTH	OVERALL DEPTH	FUEL INLET	FUEL OUTLET	PRIMARY TEST PORT	SECONDARY TEST PORT	MTG HOLE SIZE & CENTER TO CENTER	WEIGHT
95.2 mm (3.75")	116.5 mm (4.59")	N/A	1/4" NPT	3/8" NPT	1/8" NPT	1/8" NPT	1/4"- 20 2.0" (50.8 mm)	28.3 OZ (.80 kg)

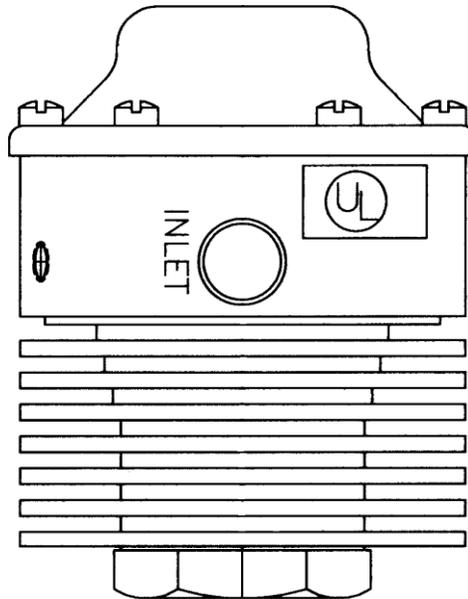
REPAIR KIT

PART #	DESCRIPTION
RK-AHR50	Kit Repair Model AHR50

OPTIONAL HIGH FLOW SPRINGS

PART #	DESCRIPTION
S2-30767	Spring, Sec AH50
S2-30768	Spring, Pri AH50

11A17-001



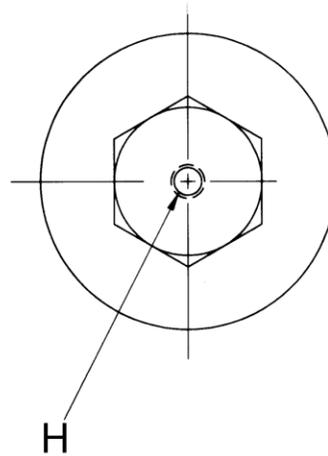
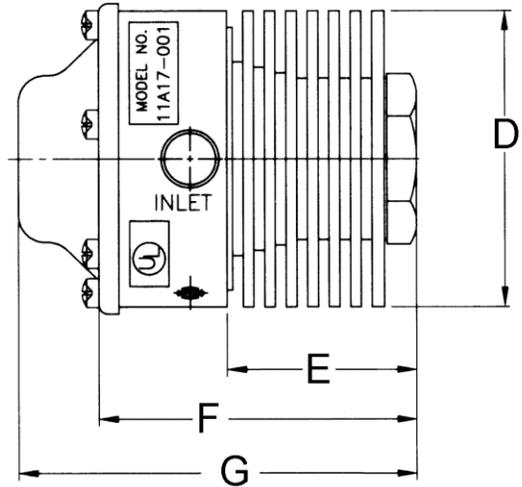
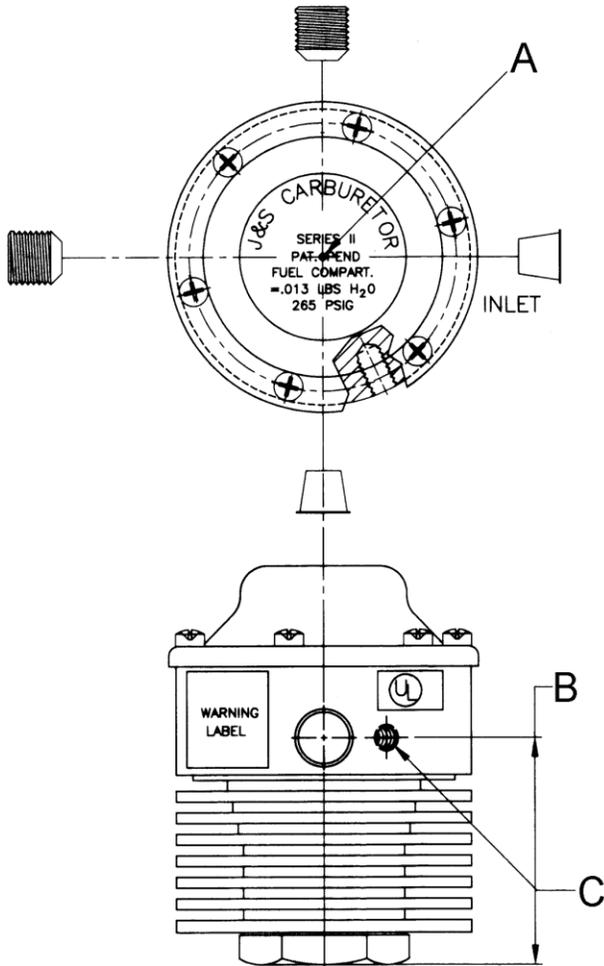
DESCRIPTION

The 11A17 vaporizer regulator (direct replacement for the Kohler 48 465 01) is a single stage regulator. It is an ambient air heated unit that does not require a direct engine fluid heating source such as engine coolant to perform the vaporization process. The unit can be used with liquid or vapor withdrawal systems.

SPECIFICATIONS

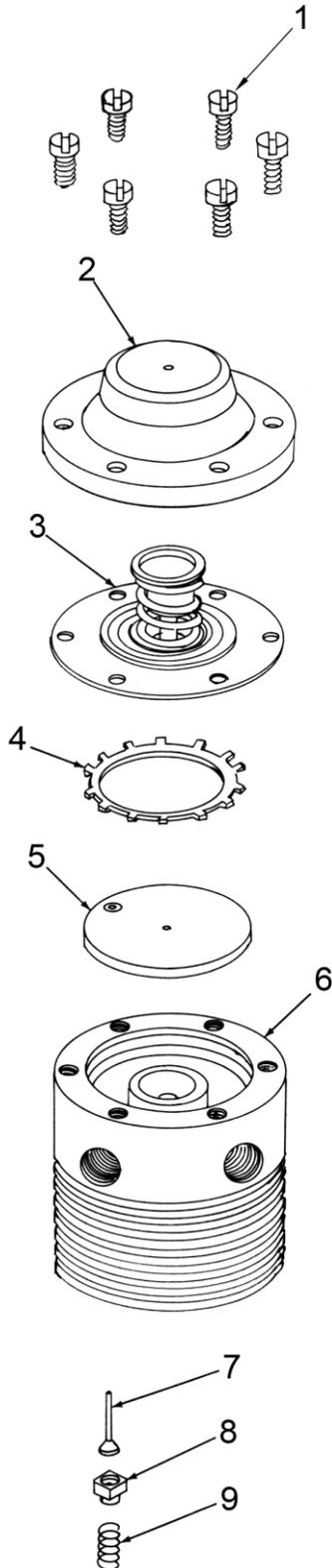
Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum.....	265 psi (18.3 Bar)
Minimum.....	30 psi (207 kPa)
Outlet Pressure	9 -12 psi (62.0 - 82.7 kPa)
HP/kW Rating.....	25 hp (18.6 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Air
Mounting Position.....	Vertical, Horizontal
Diaphragm Material	NBR (Nitrile Butadiene Rubber)
Applications.....	Mobile, industrial, and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS



	A	B	C	D	E	F	G	H
			DIA.					
	VENT HOLE	HEIGHT	MTG HOLE	DIAMETER	LENGTH OF FINS	LENGTH BODY	OVERALL HEIGHT	BOTTOM MTG HOLE
11A17-001	.06" (1.5mm)	2.20" (55.9mm)	1/4" 20 UNC X .38"	2.75" (69.9mm)	1.80" (45.7mm)	2.97" (75.4mm)	3.80" (96.52mm)	3/8" 16 UNC X .50"

COMPONENTS



VAPORIZER, P/N 11A17-001

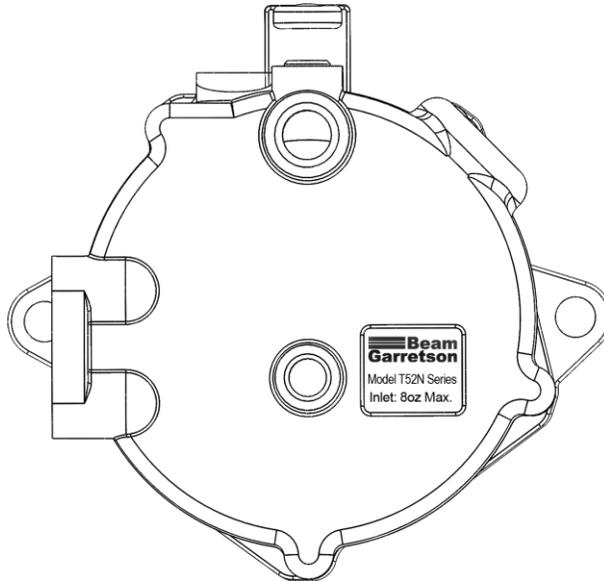
ITEM #	PART#	DESCRIPTION	QTY
1*	NSS	Screw, Cover	6
2	NSS	Cover	1
3*	NSS	Diaphragm Assy	1
4*	NSS	Retainer	1
5	NSS	Film Plate	1
6	NSS	Body	1
7*	NSS	Valve & Stem	1
8*	NSS	Valve Guides	1
9*	NSS	Spring	1

*Included in Repair Kit P/N R11-27

REPAIR KIT

PART #	DESCRIPTION
R11-27	Kit, Repair Major

Model T52



DESCRIPTION

The Model T52 is a single stage secondary regulator suitable for LPG Vapor or Natural Gas. Variations of the regulator include a vacuum lockoff, mechanical primer and new mounting tabs. The T52 regulator is completely rebuildable using an IMPCO repair kit.

SPECIFICATIONS

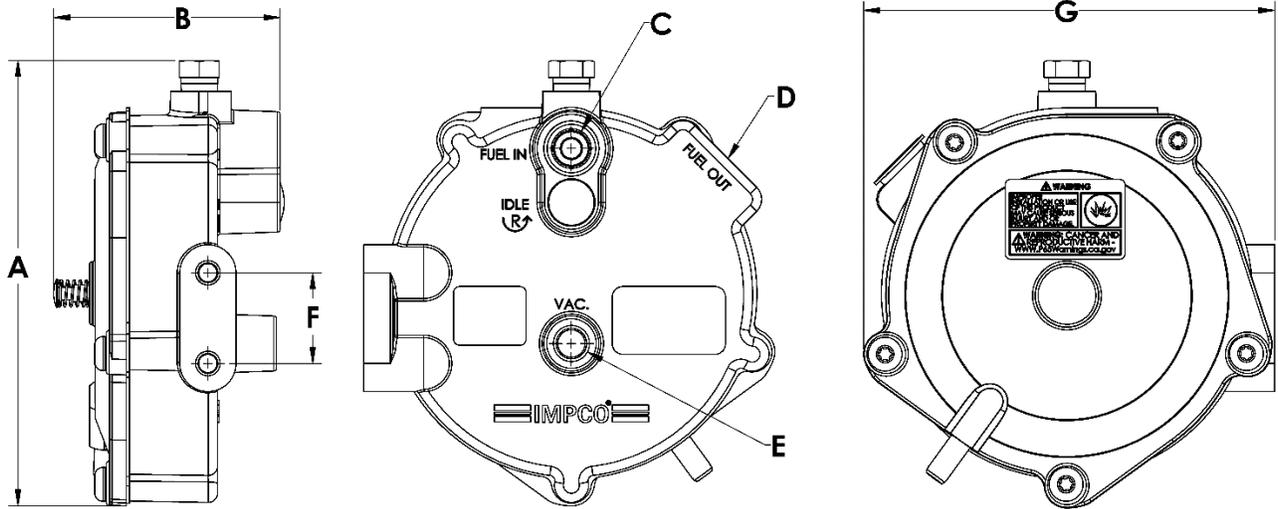
Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure (Maximum)	
T52B	5.0 psi (34.5 kPa)
T52N	14.0" w.c. (3.45 kPa)
Outlet Pressure (Nominal)	-0.5" w.c. (-0.12 kPa)
HP/kW Rating	
T52B	40 hp (29.8 kW) LPG Vapor
T52B	25 hp (18.6 kW) Natural Gas
T52N	15 hp (11.2 kW) LPG Vapor
T52N	12 hp (8.9 kW) Natural Gas
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Heating Chamber Source	None Required
Mounting Position	Vertical (outlet down) recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm Material	Hydrin
Application	Mobile, stationary, and industrial
Certification	UL (AU2317 & AU1502), Inquire for specific ECE approval

Model T52

Regulators



DIMENSIONS

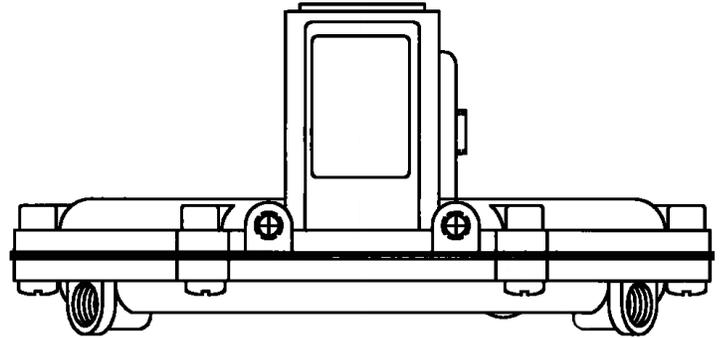
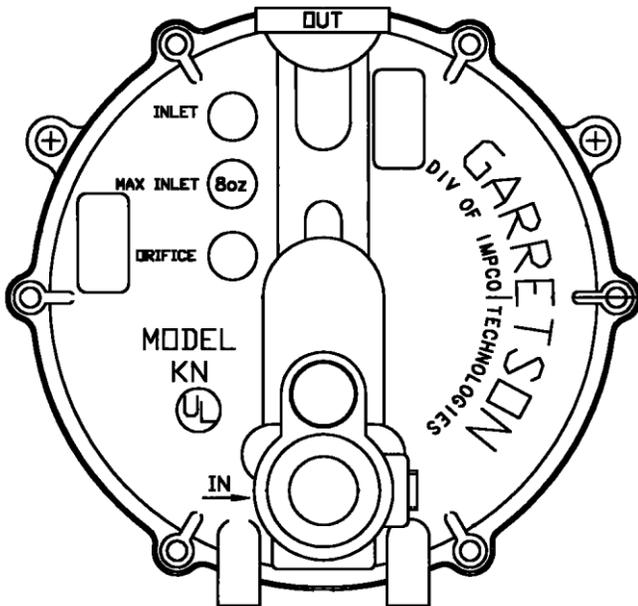


PART #	JET SIZE	PRIMER	A	B	C	D	E	F	G
			OVERALL HEIGHT	OVERALL DEPTH	FUEL INLET NPT	FUEL OUTLET NPT	VACUUM PORT NPT	MOUNTING HOLE SIZE/ CENTER TO CENTER	OVERALL WIDTH
T52N-58791-001	.218"	N	125mm (4.91")	53.3mm/ (2.10")	1/4"	3/8"	1/8"	1/4-20 / 25.4mm (1.0")	115.1mm (4.53")
T52N-58791-002	.218"	Y	125mm (4.91")	63.4mm/ (2.50")	1/4"	3/8"	1/8"	1/4-20 / 25.4mm (1.0")	115.1mm (4.53")
T52N-58791-003	.154"	N	125mm (4.91")	53.3mm/ (2.10")	1/4"	3/8"	1/8"	1/4-20 / 25.4mm (1.0")	115.1mm (4.53")

REPAIR KIT

PART #	DESCRIPTION
T52-RBK	Repair Kit, 52

Model KN



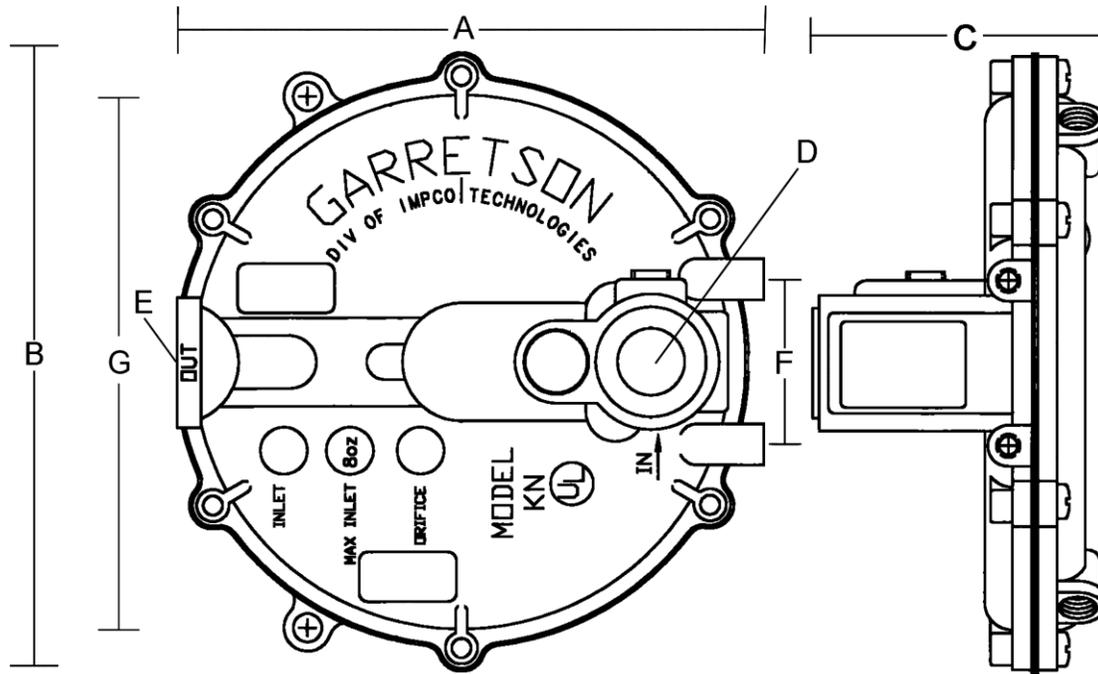
DESCRIPTION

The Model KN is a secondary regulator designed for maximum sensitivity and simple, trouble free operation. It is suitable for use with low pressure, Natural Gas and LPG Vapor fuels. This regulator is typically used in service applications up to 30 kW (40 hp). A new high flow capacity unit is also available with a ½" orifice, suited for service applications up to 37 kW (50hp). The KN regulator is completely rebuildable using an IMPCO repair kit.

SPECIFICATIONS

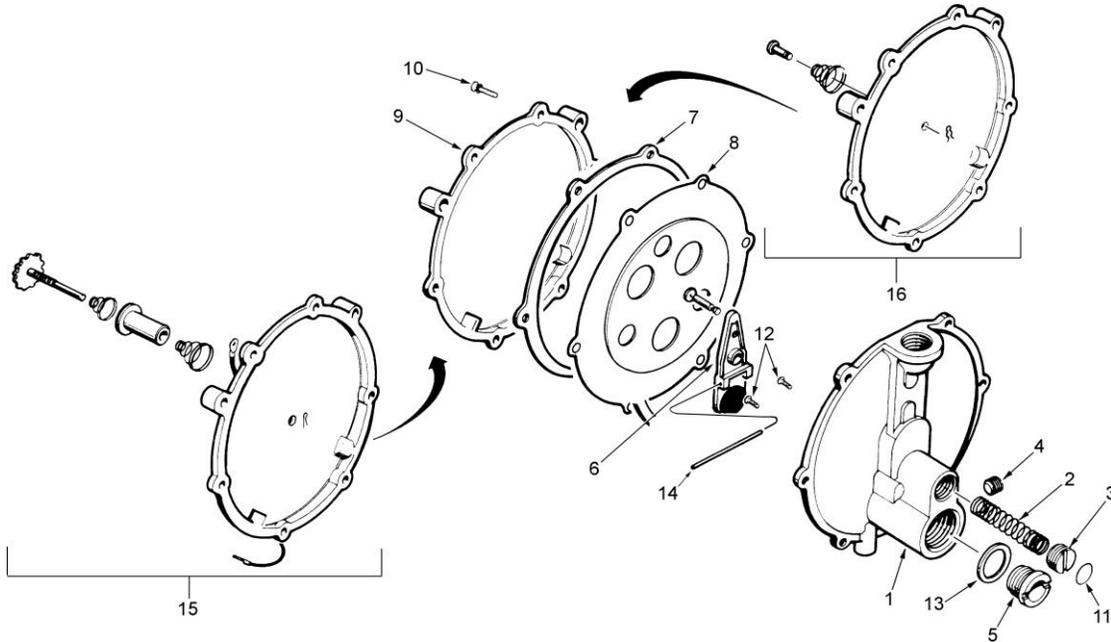
Fuel Type.....	LPG Vapor or Natural Gas Vapor
Inlet Pressure (Maximum)	13.84" w.c. (3.44 kPa)
Outlet Pressure (Nominal).....	-0.5" w.c. (-0.12 kPa)
Initial Flow Pressure	-0.05 to -0.35 w.c.
HP/kW Rating	
LPG (Standard)	40 hp (29.8 kW)
LPG (High Flow).....	50 hp (37.3 kW)
Natural Gas (Standard)	25 hp (18.6 kW)
Natural Gas (High Flow)	30 hp (22.4 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical and as close to the carburetor as possible.
Diaphragm Material.....	Silicone
Applications	Stationary
Certification.....	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS



PART#	DIMENSIONS												
	A	B	C	D	E	F	G	H	I	J	K	L	
	OVERALL HEIGHT	OVERALL WIDTH	OVERALL DEPTH	INLET NPT	OUTLET NPT	MOUNT HOLES SIZE SPACING	MOUNT HOLES SIZE SPACING	MAX INLET PRESS.	Spring	PRIMER	TAMPER RESIST	ORIFICE	
039-0002	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	4 oz (Red)	NO	YES	7/16" (11.1mm)	
039-0004	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	6 oz (Green)	NO	YES	7/16" (11.1mm)	
039-0005	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	4 oz (Red)	NO	YES	7/16" (11.1mm)	
039-12	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	6 oz (Green)	NO	NO	7/16" (11.1mm)	
039-121	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	6 oz (Green)	AUTO	NO	7/16" (11.1mm)	
039-122	156mm (6.125")	165mm (6.0")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	6 oz (Green)	MANUAL	NO	7/16" (11.1mm)	
039-31173	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	4 oz (Red)	NO	YES	1/2" (12.7mm)	
039-31173-1	156mm (6.125")	165mm (6.50")	76.2mm (3.00")	3/4"	3/8"	1/4" 20 UNC 44.5mm (1.75")	1/4" 20 UNC 44.5mm (1.75")	8 oz	4 oz (Red)	MANUAL	YES	1/2" (12.7mm)	

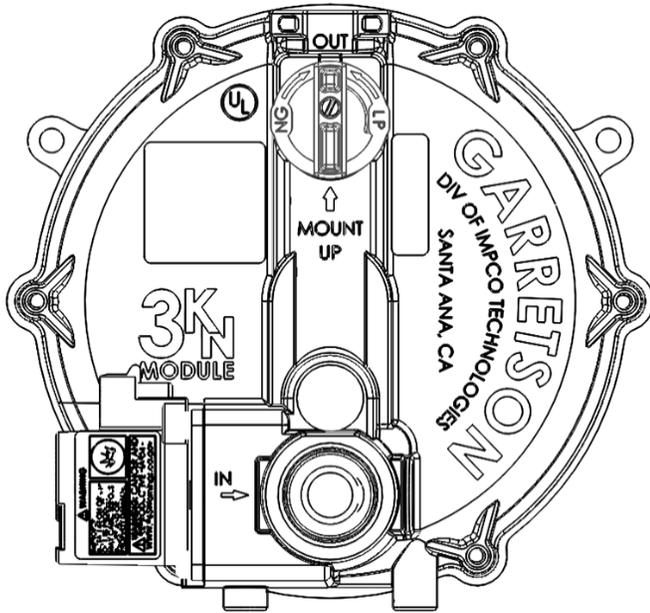
ACCESSORIES & COMPONENTS



COMPONENTS				OPTIONS/ACCESSORIES		
ITEM#	PART#	DESCRIPTION	QTY	PART#	DESCRIPTION	QTY
1	NSS	Body, Regulator Model KN	1	039-00-12	Spring, 4 Oz. Model Kn (Red)	1
2	039-00-12	Spring, 4 Oz. Model Kn (Red)	1	039-00-13	Spring, 6 Oz. Model Kn (Green)	1
	039-00-13	Spring, 6 Oz. Model Kn (Green)		039-00-41	Pin, Primer Mod KN	1
3	NSS	Screw, Adjusting	1	039-00-42	Spring, primer .38" O.D. .19" I.D. .02"	1
4	NSS	Fitting, 1/8Npt Hex Sch Plug	1	039-99	Repair Kit, KN	1
5	NSS	Orifice, 1/2" Id, KN Regulator	1	039-00-43	Clip, Primer Pin	1
6	NSS*	Lever & Seat Assembly	1			
7	NSS*	Gasket, Secondary Diaphragm	1			
8	NSS*	Diaphragm, Assy Reg Vmq Mod Kn	1			
9	NSS	Cover, Regulator Diaph Mod Kn	1			
10	NSS*	Screw 10-32X5/8 Torx Pan Stlzn	6			
11	P3-17956-10	Plug, Expansion	1			
12	NSS*	Screw 4-40X1/4 Torxph Tt Stlzn	2			
13	NSS	Gasket, Orifice	1			
14	NSS*	Pivot Pin	1			
15	039-00-52	Cover, Auto Prime Assy	1			
16	NSS	Cover, Manual Prime Assy	1			

*Included in repair Kit 039-99

2KN / 3KN Module



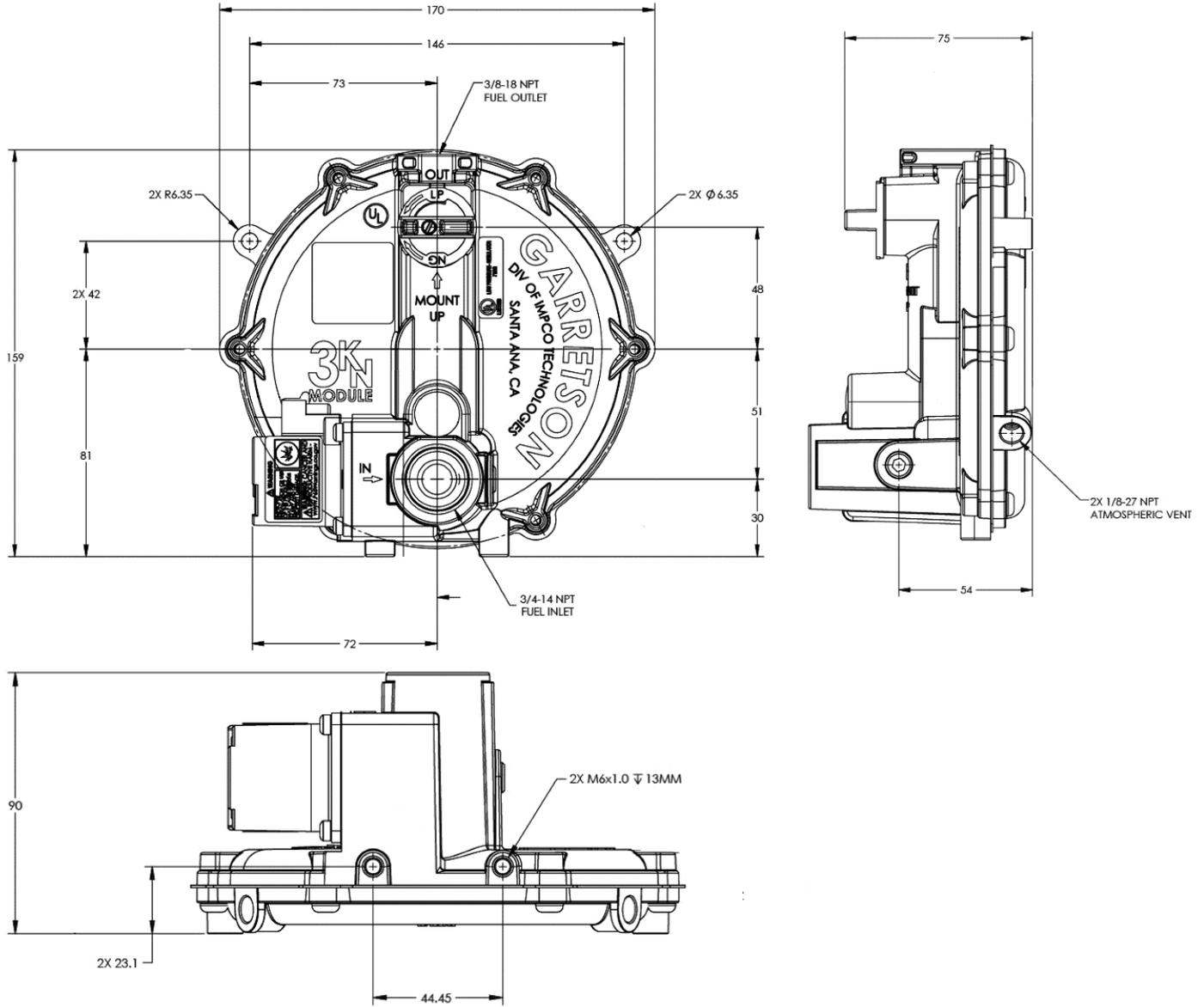
DESCRIPTION

The 2KN and 3KN modules are similar to the KN regulator, but offer a built in lock-off (2KN / 3KN) and a fuel selection valve (3KN), allowing for easy switching between LPG vapor and Natural Gas on dual fuel applications. The module can be used in both non-certified systems and certified emissions systems (including tamper resistant features). The 2KN and 3KN can be serviced using the standard KN IMPCO repair kit.

SPECIFICATIONS

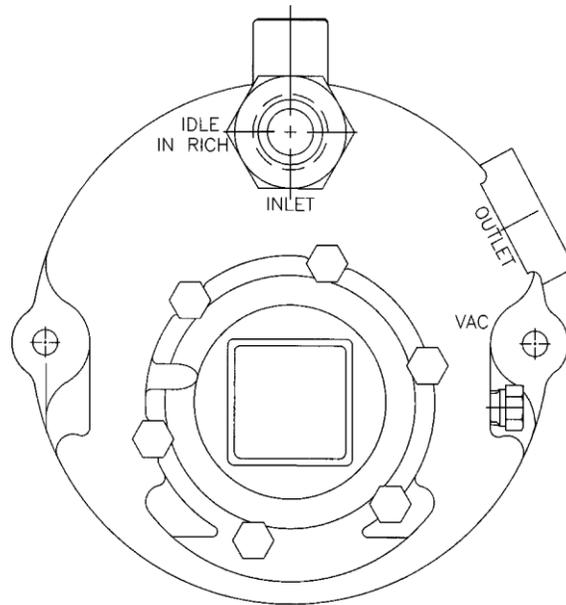
Fuel Type.....	LPG Vapor (3KN Only) or Natural Gas	
Inlet Pressure		
Maximum.....	14.0" w.c. (3.49 kPa)	
Minimum.....	3.0" w.c. (0.87 kPa)	
Outlet Pressure (Nominal).....	-0.5" w.c. (-0.12 kPa)	
Initial Flow Pressure	-0.12 w.c. (-0.03 kPa)	
HP/kW Rating		
LPG	47 hp (35.0 kW)	
Natural Gas	35 hp (26.1 kW)	
Filtration	Integrated 500 micron SS mesh	
Fuel Lock-off	12 VDC (12 W)	24 VDC (16 W)
Ambient Temperature	-40°F (40°C) to +194°F (90°C)	-40°F (-40°C) to 131°F (55°C)
Fluid Temperature	-40°F (40°C) to 131°F (55°C)	-40°F (40°C) to 131°F (55°C)
Minimum Opening Voltage	8 VDC @ 14.0" w.c. @ -40°C	
Mounting Position	Vertical and as close to the carburetor as possible to minimize line loss	
Mounting	2x M6 threaded bottom mounting or 2x M6 clearance side mounting points	
Diaphragm Material.....	Silicone	
Applications	Stationary, portable	
Mass	2.07 pounds (937 grams)	
Tamper Resistance.....	Configurable to meet CARB and EPA requirements.	
Certification.....	UL (AU1502), Inquire for specific CSA approval	

DIMENSIONS



Contact IMPCO sales for part numbers and availability.

Model 202A

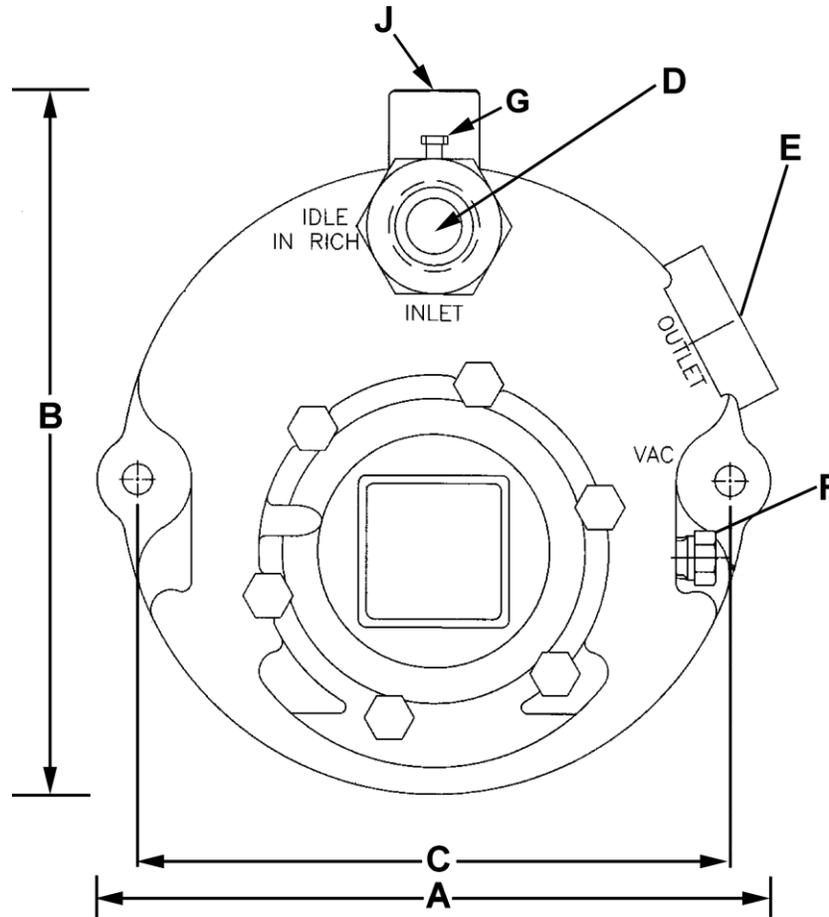


DESCRIPTION

The Model 202A is a high capacity, secondary, dry gas pressure regulator designed for use with LPG Vapor or Natural Gas. The Model 202A is a secondary regulator and requires a primary regulator to reduce pressure to the fuel inlet. It is available in several variations, some of which include an internal lockoff which shuts off fuel supply outlet when the engine stops. It is also available with idle screw and optional manual primer. The Model 202A regulator is completely rebuildable using an IMPCO repair kit.

SPECIFICATIONS

Fuel Type.....	LPG Vapor or Natural Gas
Inlet Pressure (Maximum)	13.84" w.c. (3.44 kPa)
Outlet Pressure (Nominal).....	-0.5" w.c. (-0.12 kPa)
HP/kW Rating (202AN)	45 hp (33 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Heating Chamber Source.....	None
Mounting Position	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm Material.....	NBR
Applications	Stationary, mobile, industrial, and automotive
Certification.....	UL (AU2317 & AU1502), Inquire for specific ECE approval

DIMENSIONS


MODEL	OVERALL WIDTH	OVERALL HEIGHT	OVERALL DEPTH	MOUNTING HOLES CTR. TO CTR.	FUEL INLET (NPT)	FUEL OUTLET (NPT)	VACUUM PORTS (NPT)	INLET PRESS TEST PORT (NPT)	PRIMARY ORIFICE	IDLE SCREW	INTERGRAL LOCKOFF	PRIMER	WEIGHT
202ANL-C	158.7 mm (6.25")	191 mm (7.5")	153.1 mm (6.027")	141 mm (5.500")	1/2"	3/4"	1/8"	1/8"	9.5 mm (0.38")	NO	NO	YES	791 g (28 oz)
T202ANL-E-1	158.7 mm (6.25")	191 mm (7.5")	153.1 mm (6.027")	140 mm (5.500")	1/2"	3/4"	1/8"	1/8"	9.5 mm (0.38")	YES	NO	NO	793 g (28 oz)

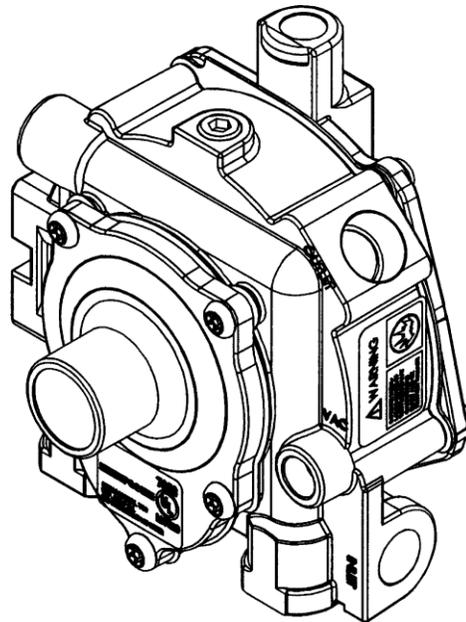
REPAIR KIT

PART #	DESCRIPTION
T202-RBK	Rebuild Kit, 202
T202-RK	Repair Kit, 202

ACCESSORIES

PART #	DESCRIPTION
PS-25	Screw, Idle Adj w/Primer

Model T60



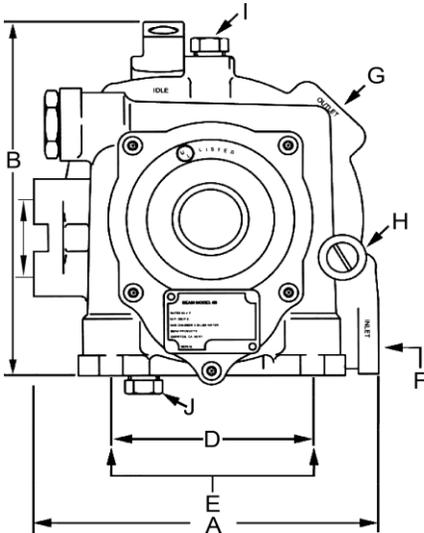
DESCRIPTION

The T60 is a two stage regulator/vaporizer for LPG applications up to 60 hp (44.7 kW). Various models feature built-in vacuum lock, idle adjustment, primers, various heating methods, and several mounting options. Newer models (post 2010 production) include an improved primary and secondary lever and seat design, and a standard freeze plug and idle screw. The idle screw has improved sensitivity and stability and is relocated to the cover. An idle screw cap and tamper resistant screws satisfy regulatory tamper resistance requirements. Optional dual mounting tabs are available and all mounting features and ports will remain the same.

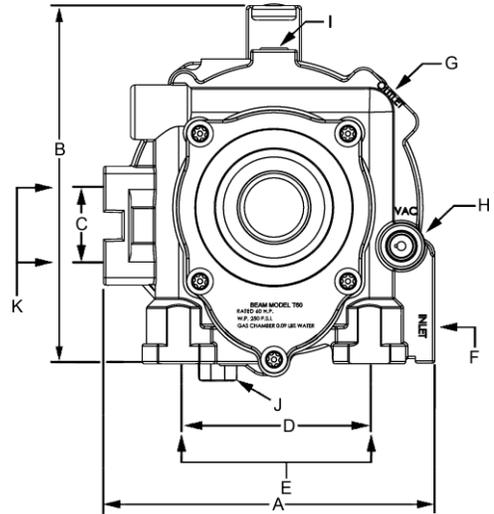
SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Natural Gas
Inlet Pressure	
Maximum	250 psi (17.23 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	-0.5" w.c. (-0.13 kPa)
HP/kW Rating.....	60 hp (44.7 kW) LPG Liquid
	40 hp (29.8 kW) LPG Vapor
	30 hp (22.4 kW) Natural Gas
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for LPG Liquid
Mounting Position.....	Vertical (outlet down) recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm.....	Hydrin
Applications.....	Stationary, mobile, industrial and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

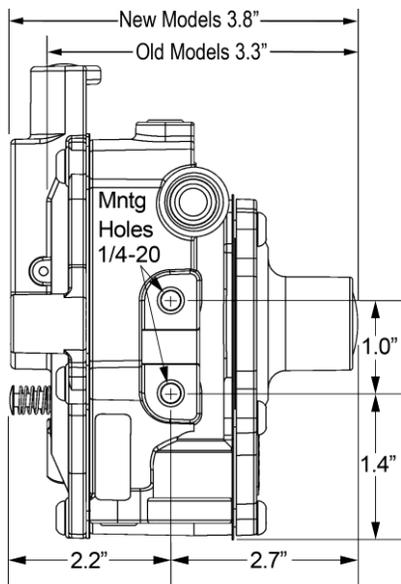
DIMENSIONS



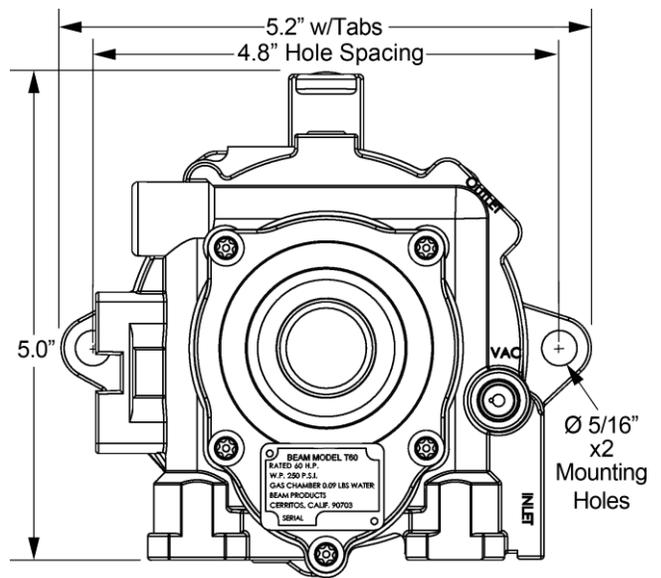
Early Model



New Model (without tabs)



Profile (New Model Shown)



Front View (New Model with tabs shown)

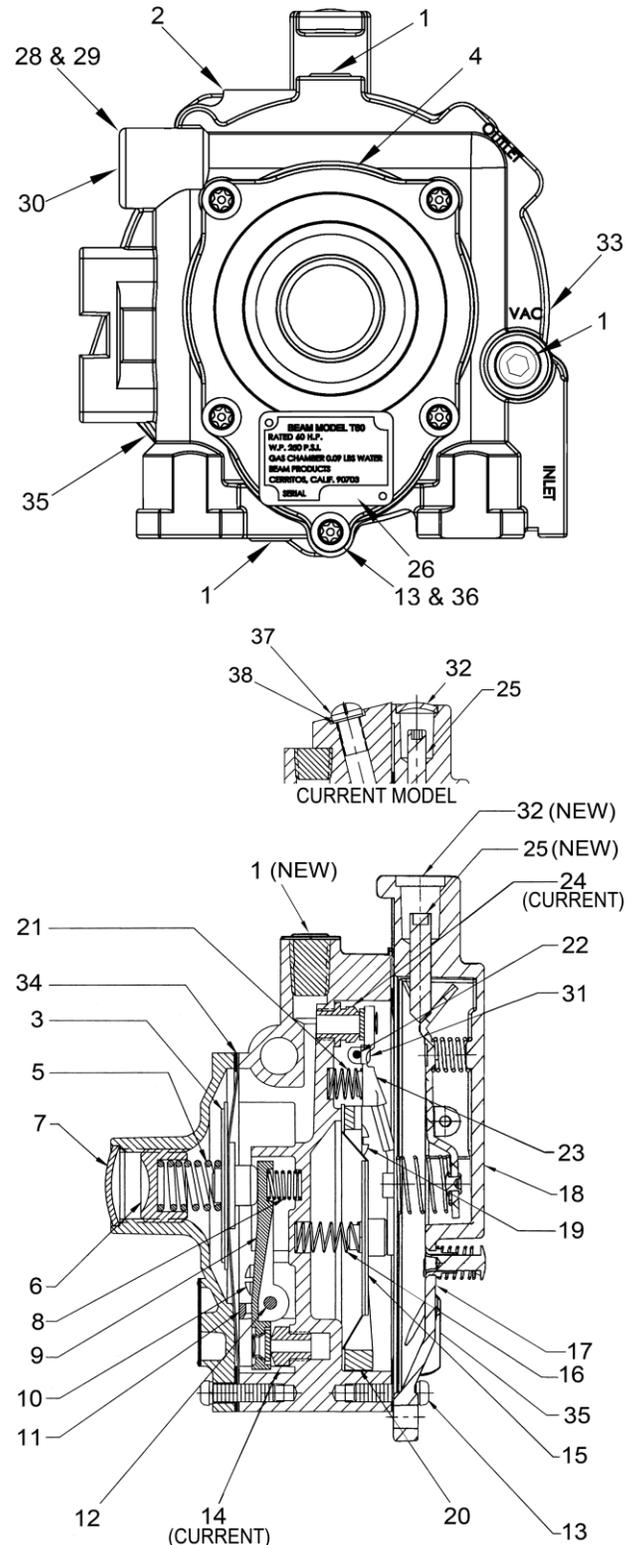
	A	B	C	D	E	F	G	H	I	J	K	N
	OVERALL WIDTH	OVERALL HEIGHT	OVERALL DEPTH	MOUNTING HOSE CTR. TO CTR.	COOLANT IN/OUT CTR. TO CTR.	COOLANT INLET & OUTLET (NPT)	FUEL INLET (NPT)	FUEL OUTLET (NPT)	VACCUM PORTS (NPT)	PRIMARY TEST PORTS	SECONDARY PRESS. & OIL DRAIN	APPROX WEIGHT
Early Model	110 mm (4.350")	124 mm (4.875")	82.6 mm (3.250")	25.4 mm (1.000")	66.7 mm (2.625")	1/4"	1/4"	3/8"	1/8"	1/8"	1/8"	680g (24oz.)
New Model (w/Out Tabs)	110 mm (4.350")	127 mm (5.0")	96.5 mm (3.8")	25.4 mm (1.000")	66.7 mm (2.625")	1/4"	1/4"	3/8"	1/8"	1/8"	1/8"	740g (26oz.)
New Model (w/Tabs)	132.8 mm (5.2")	127 mm (5.0")	82.6 mm (3.250")	25.4 mm (1.000")	66.7 mm (2.625")	1/4"	1/4"	3/8"	1/8"	1/8"	1/8"	822g (29oz.)

COMPONENTS

Item #	P/N	DESCRIPTION
1	P3-16699-001	PLUG, 1/8 Socket Head Steel (NEW)
	P3-13	PLUG, 1/8-27 NPT* (1) (EARLY)
2	NSS	CASTING, REGULATOR BODY
3	NSS	DIAPHRAGM ASSEMBLY* (1), (2)
4	NSS	COVER, PRIMARY REGULATOR
5	NSS	SPRING, PRIMARY* (1)
6	NSS	SCREW, RETAINER, ADJUSTABLE SPRING
7	P3-17956-8	PLUG, EXPANSION* (1), (2)
8	NSS	SPRING, PRIMARY LEVER* (1)
9	NSS	LEVER ASSY, PRIMARY* (1), (2)
10	NSS	SCREW, FIL HD, 10-32 UNF-2A x .31 L (EARLY)
		SCREW, M5 x 0.8 7.9 FIL HD, TORX (NEW)
11	NSS	BRIDGE, PRIMARY
12	NSS	PIN, PRIMARY PIVOT* (1)
13	NSS	SCREW, 10-32 x.62 TORX* (1)
14	NSS	SCREW, TORX TAMP RES M5 X16MM (NEW)
15	NSS	ORIFICE, PRIMARY REGULATOR (EARLY)
16	NSS	DIAPHRAGM ASSEMBLY, VAC LOCK* (1), (2)
17	NSS	SPRING, VAC LOCK* (1)
		DIAPHRAGM, SECONDARY* (1), (2)
18	AC1-51985-001	COVER ASSY (NEW)
	AC1-51985-001A	COVER ASSY W/PRIMER (NEW)
19	NSS	SCREW, PAN HD 10-32 x .38* (1)
		SCREW, TORX TAMP RES M5 X16MM (NEW)
20	60-16	RING, VAC. LOCK
21	NSS	SPRING, SECONDARY LEVER* (1)
22	NSS	PIN, SECONDARY PIVOT* (1)
23	NSS	LEVER ASSY, SECONDARY* (1), (2) (NEW)
	60-19B	LEVER ASSY, SECONDARY (EARLY)
24	NSS	ORIFICE, SECONDARY REGULATOR (EARLY)
25	S1-17367	SCREW, ADJUSTMENT* (1)
	NSS	SCREW, ADJUSTMENT (NEW)
26	NSS	LABEL
27	NSS	DELETED
28	400-25	PLUG, RELIEF* (1), (2) (EARLY)
	P3-50929-001	PLUG, FREEZE .50 DIS. X .38 (NEW)
29	NSS	GASKET, PLUG* (1), (2) (EARLY)
30	NSS	PLUG, WATER CORE (EARLY)
31	NSS	SCREW, PAN HD, 10-32 UNF-2A X .25 L* (1)
		SCREW, TORX TAMP RES M5 X16MM (NEW)
32	P3-17956-1	PLUG, EXPANSION* (1), (2)
33	NSS	LABEL, WARNING* (1), (2)
34	NSS	GASKET, DIAPHRAGM* (1), (2)
35	NSS	LABEL, IDENT-SILVER
	W1-5	WASHER, SPLIT LOCK* (1) (EARLY)
37	NSS	SCREW, FIL HD 1/4-28 UNF-2A* (1) (EARLY)
38	NSS	WASHER, COPPER-SPECIAL

NSS=Not Sold/Service Separately

*Repair Kit. (1)=T60-RBK; (2)=T60-RK



APPLICATION CHART

Early Part Number	Freeze Plug*	Idle Screw*	Additional 1/2" Depth (When Replaced by New Part Number)	New Part Number*	Vacuum Lock	Primer	Mounting Tabs
T60-N-2		•		T60-A-NN-2			•
T60-S-2		•					
T60-E	•	•	•	T60-A-NN-N			
T60-F-N	•	•					
T60-S-N		•					
T60-N-N		•					
T60-D	•		•				
				T60-A-NP-2		•	•
T60-G	•	•	•	T60-A-NP-N		•	
T60-C	•		•				
T60-P-N		•					
T60-VF-2	•	•		T60-A-VN-2	•		•
T60	•	•	•	T60-A-VN-N			
T60-H		•	•				
T60-VF-N	•	•					
T60-V-N		•					
				T60-A-VP-2	•	•	•
T60-B	•	•	•	T60-A-VP-N	•	•	
T60-VP-N		•					

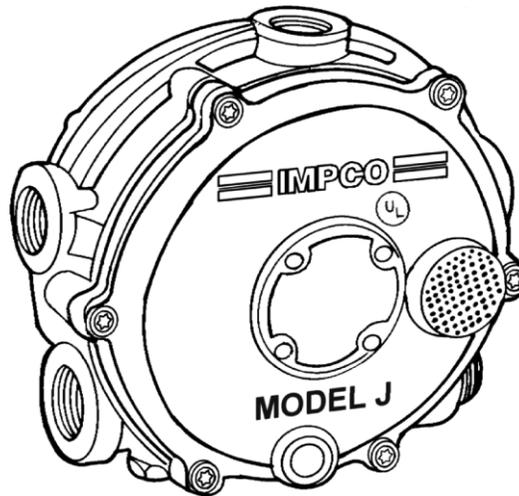
Note: All New T60 models have a freeze plug and an idle screw

N=None

V=Vacuum

2=Number of tabs

Model J



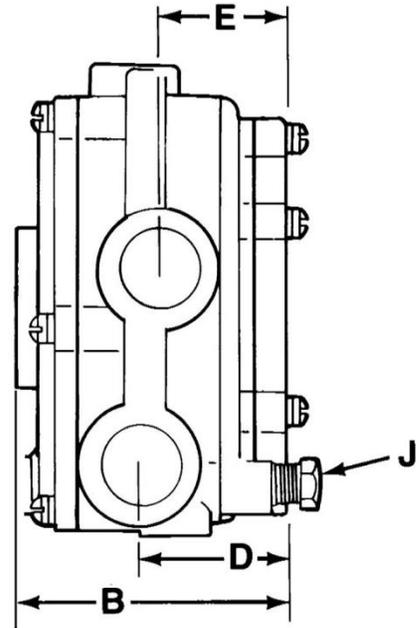
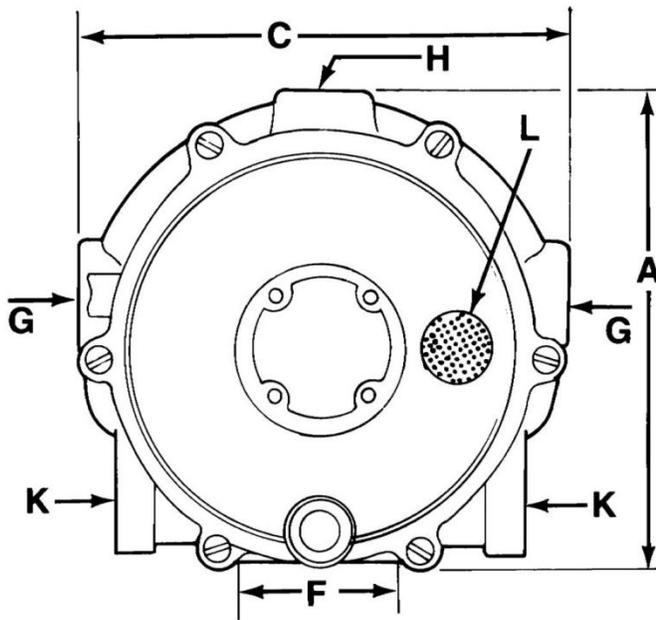
DESCRIPTION

The Model J regulator/vaporizer delivers reliable performance and pressure output consistency. Its reliability, especially with questionable fuel quality, has made it an industry standard for many years.

Two vapor outlet pressures are available. The standard JB blue provides -1.5" w.c. (-0.37 kPa). The optional JO provides -0.5" w.c. (-0.12 kPa). The port size and mounting pad locations are identical to the Cobra regulator and include a primary pressure test port and "left" or "right" fuel outlets.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	
JB (blue spring)	-1.5" w.c. (-0.37 kPa)
JO (orange spring)	-0.5" w.c. (-0.12 kPa)
HP/kW Rating.....	100 hp (74.6 kW)
Operating Temperature Range.....	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for LPG Liquid
Mounting Position.....	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Applications.....	Mobile, stationary, industrial and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS


A	B	C	D	E	F	G	H	J	K	L
OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH	BACK OF CONVERTER TO CTR OF FUEL OUTLET	BACK OF CONVERTER TO CTR. OF WATER OUTLET	MOUNTING HOLES CTR. TO CTR.	COOLANT INLET AND OUTLET (NPT)	FUEL INLET (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNECTION (NPT)
108mm (4.25")	73.00mm (2.88")	118mm (4.63")	41.3mm (1.63")	34.9mm (1.38")	41.3mm (1.63")	3/8"	1/4"	1/8"	1/2"	1/8"

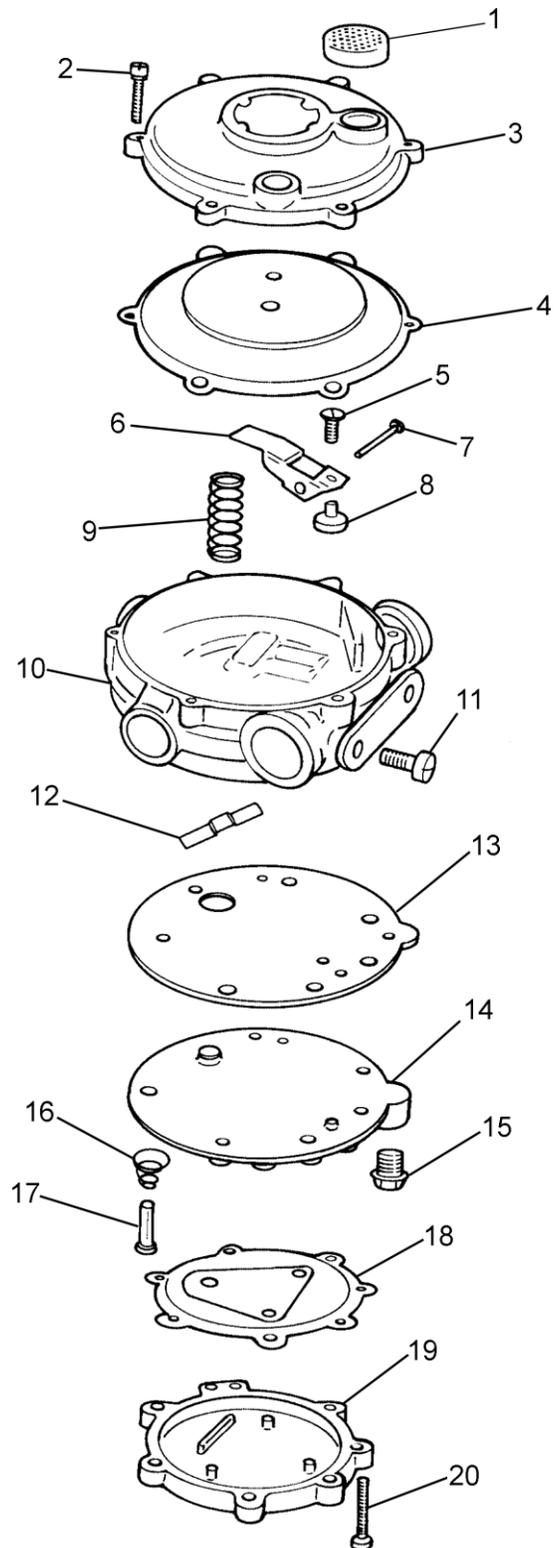
MODEL	SECONDARY DIAPHRAM	OUTLET PRESSURE	CHECK VALVE	NOTES
JB	AD1-26 (BLACK HYDRIN)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	
JB-2	AD1-27 (SILICONE)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	
JB-2ULC	AD1-27 (SILICONE)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	CANADA
JB-C-725	AD1-26 (BLACK HYDRIN)	Neg. 0.37 kPa (Neg. 1.5" H2O)	AF4-14883	
JB-L-377	AD1-26 (BLACK HYDRIN)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	PLUG, L.H. CLARK
JB-R	AD1-26 (BLACK HYDRIN)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	
JO	AD1-26 (BLACK HYDRIN)	Neg. 0.12 kPa (Neg. 0.5" H2O)	NO	
JO-2	AD1-27 (SILICONE)	Neg. 0.12 kPa (Neg. 0.5" H2O)	NO	
JB-P	AD1-26 (BLACK HYDRIN)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	WITH PRIMER PIN
JB-2-P	AD1-27 (SILICONE)	Neg. 0.37 kPa (Neg. 1.5" H2O)	NO	WITH PRIMER PIN

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS	Screen, atmospheric vent
2	NSS	Screw, 8-32 x 7/8" Torx style (6)
3	NSS	Cover Assy Secondary
4	NSS*	Diaphragm ass'y, secondary, Hydrin (RK-J, RK-J-C & RK-JC-734)
	NSS*	Diaphragm Assy, Secondary, Silicone (RK-J-2)
	NSS*	Diaphragm Assy, Secondary, Silicone (RK-J-3)
5	NSS	Screw, 8-32 x 1/2" Torx style
6	L1-37	Lever, Secondary
7	NSS	Pin, Secondary Fulcrum
8	S4-27*	Seat, Secondary
9	S2-35	Spring, blue secondary, Neg. 0.37 kPa (Neg. 1.5" H2O), standard
	S2-38	Spring, orange, secondary, Neg. 0.12 kPa (Neg. 0.5" H2O), optional
10	NSS	Body Assy, w/jet
11	S1-5	Plug, vapor outlet
12	NSS*	Seat, Primary Reg Mod J
13	NSS*	Gasket, body Plate Mod J
14	P2-26	Plate, Converter Body for Mod J
15	P3-13	Plug, 1/8 NPT, hex head
16	S2-36	Spring, Primary Reg Model J
17	NSS*	Primary valve pin
18	NSS*	Diaphragm Assy, Primary
19	C1-93	Cover, Primary
20	NSS	Screw, 8-32 x 7/8" Slot style (7)

NSS = Not Serviced Separately

* Included in repair kit



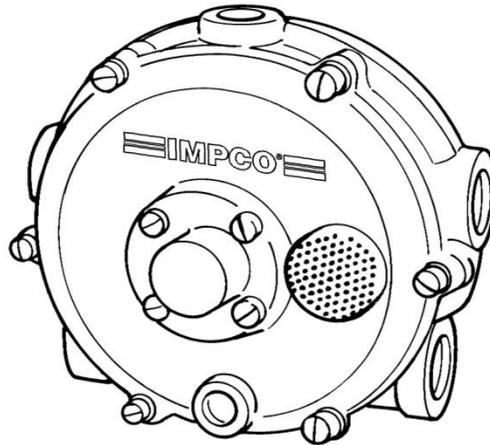
STANDARD AND OPTIONAL EQUIPMENT**PRIMER**

PART#	DESCRIPTION
AB1-28	Mechanical Primer, Early Primer Models Only
SV	Start assist valve

REPAIR KITS

PART#	DESCRIPTION
RK-J	Repair Kit Model J, Hydrin Diaphragm
RK-J-2	Repair Kit Model J, w/Silicone Diaphragm
RK-J-200	Repair Kit Model J, for Towmotor
RK-J-3	Repair Kit Model J w/Fluorosilicone Diaphragm
RK-J-632	Standard RK-J For Clark
RK-J-71	Repair Kit Model J, for Toyota
RK-J-837	Repair Kit Model J, for Hyster
RK-J-895	Repair Kit Model J, for Allis Chalmers
RK-J-C	Repair Kit For Mod J w/Check Valve (JB-C-725)
RK-J-C-3	Repair Kit Model J w/Check Valve & Fluorosilicone Dia
RK-JC-734	Repair Kit For JO-C/Clark w/Check Valve

Model PJ



DESCRIPTION

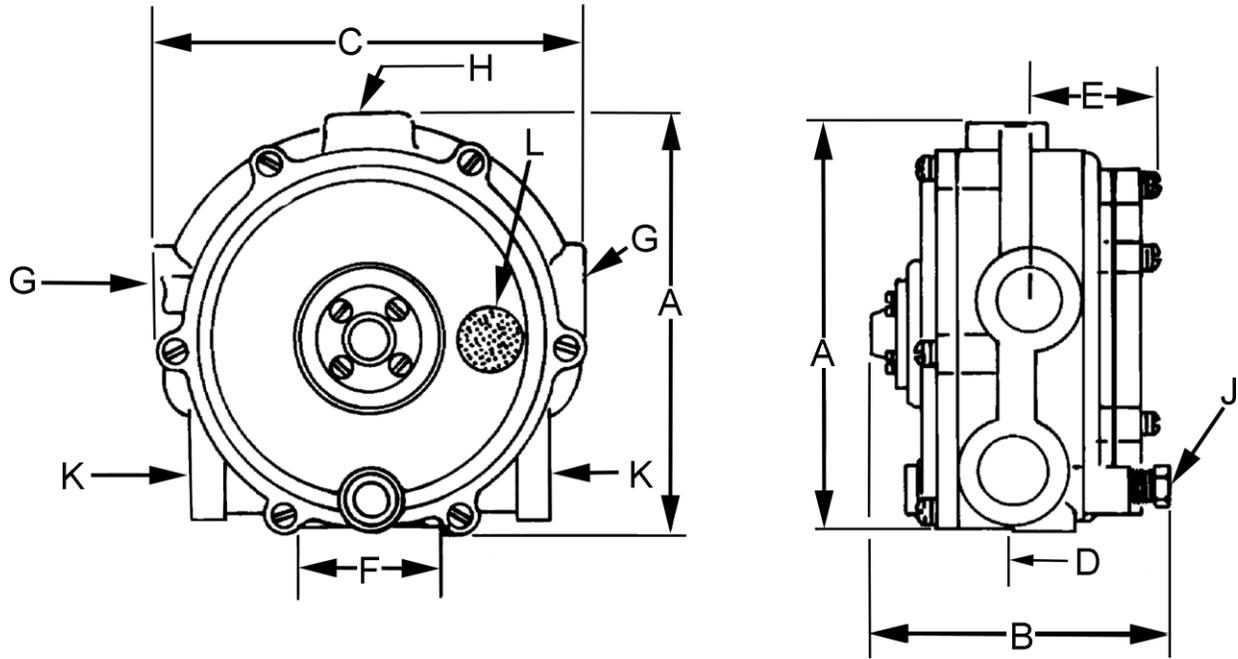
The Model PJ is a positive pressure, two stage regulator. It is designed for positive pressure Natural Gas fuel systems where liquid vaporization and engine coolant heating are not required, however, additional fuel temperature and mixture stability may be gained through the use of engine coolant.

This regulator is able to provide positive flow in applications up to 80 hp (59.7 kW). Fixed regulators can be converted in the field to adjustable with the AC1-74 kit. Fixed pressure regulators are preferred in applications that are not subject to fuel quality variations or to deter unauthorized tampering. There is a primary pressure test port and "left" or "right" fuel outlets.

SPECIFICATIONS

Fuel Type	Natural Gas
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	+5.0" w.c. (1.25 kPa)
HP/kW	80 hp (59.7 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Optional
Mounting Position	Vertical recommended
Applications	Mobile, industrial and automotive
Certification	Inquire for specific ECE approval

DIMENSIONS



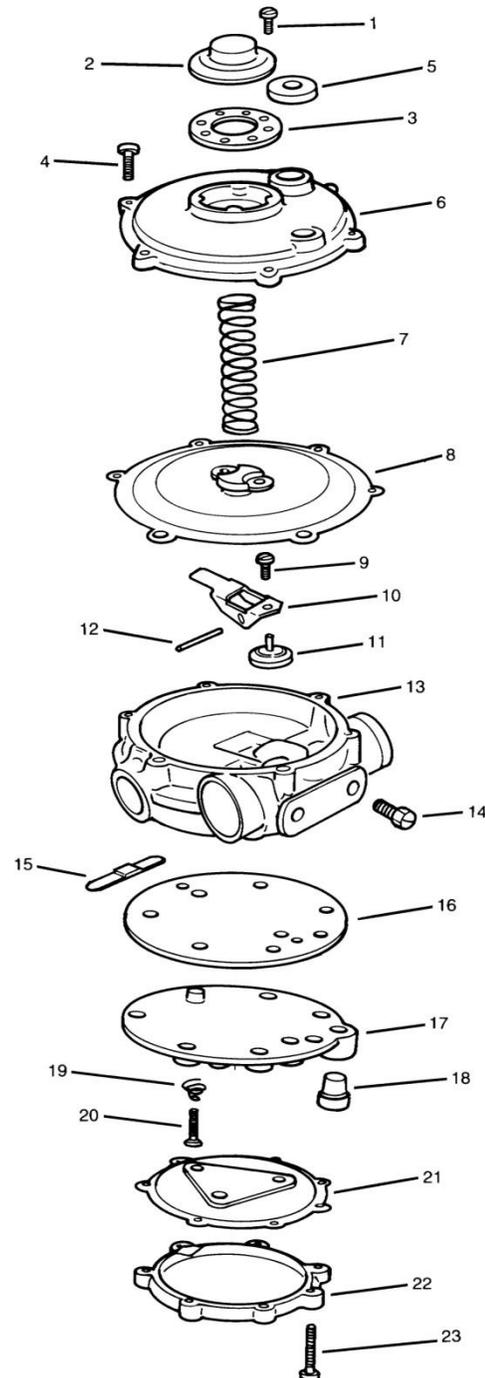
A	B	C	BACK OF CONVERTER TO		F	G	H	J	K	L
OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH	CTR. OF FUEL OUTLET	CTR. OF WATER OUTLET	MOUNTING HOLES CTR. TO CTR.	COOLANT INLET AND OUTLET (NPT)	FUEL INLET (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNECTION (NPT)
121mm (4.750")	73mm (2.875")	118mm (4.625")	76.2mm (3.00")	76.2mm (3.00")	1.625" (41.3mm)	3/8"	1/4"	1/8"	1/2"	1/8"

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS *	Screw, 6-32 x 5/16" SEMS
2	H3-3	Housing, Spring
3	G1-84 *	Gasket, spring housing
4	NSS	Screw, 8-32 x 5/8" 265-003 (6)
5	NSS	Screen, atmospheric vent
6	NSS	Cover ass'y, Model PJ converter
7	NSS	Spring, secondary regulator
8	AD1-26-2 *	Diaphragm ass'y, secondary
9	NSS	Screw, 8-32 x 1/2"
10	AL1-37	Lever ass'y, secondary regulator
11	S4-27 *	Seat, low pressure Model J
12	P1-8	Pin, secondary fulcrum
13	NSS	Body ass'y
14	NSS	Screw, 1/4-20 x 5/8" SEMS (2)
15	NSS*	Seat, primary regulator
16	NSS	Gasket, body to plate
17	NSS	Plate, converter body cover
18	NSS	Plug, 1/8 NPT, hex head
19	NSS	Spring, primary regulator
20	NSS	Pin, primary valve
21	NSS	Diaphragm ass'y, primary
22	NSS	Cover, primary regulator
23	NSS	Screw, 8-32 x 1" (7)

NSS = Not Serviced Separately

* Included in repair kit



STANDARD AND OPTIONAL EQUIPMENT

STANDARD CONVERTERS

MODEL	SEDONDARY DIAPHRAGM	OUTLET PRESSURE	EC1 OUTLET PRESSURE	MANUAL PRIMER	CHECK VALVE
PJ	Black Hydrin	1.12 kPa (4.5" H2O)	N/A	N/A	N/A

FUEL CONTROL VALVES

PART #	DESCRIPTION
SV	Electric solenoid starting valve
VPV	Vacuum power valve

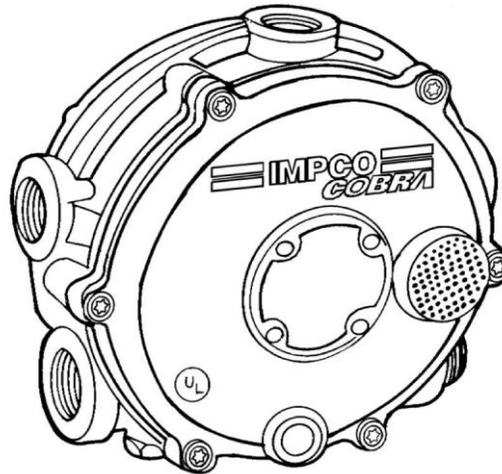
GAUGE

PART #	DESCRIPTION
RK-J	Model J secondary lever

RETROFIT KITS (Converts to Adjustable Spring)

PART #	DESCRIPTION
AC1-74	W/ adjustable cover (for secondary pressure)

COBRA



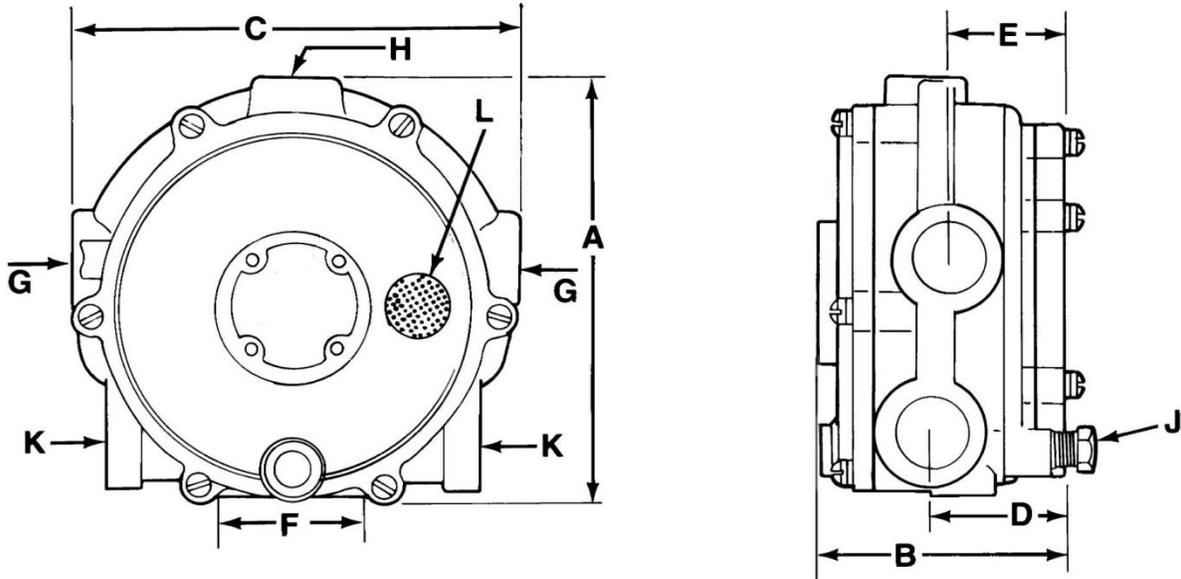
DESCRIPTION

The Cobra regulator/vaporizer delivers superior performance and excellent pressure output consistency. Cobra offers greater service life and is ideal for applications with controlled emissions. Its primary pin design and Fluorosilicone diaphragm offer superior chemical resistance, resistance to over pressurization, and cold weather operation. Use of the standard blue secondary spring provides -1.5" w.c. (0.37 kPa). The optional orange secondary spring, provides -0.5" w.c. (0.12 kPa) output.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	
COBRA (blue spring)	-1.5" w.c. (-0.37 kPa)
COBRA-I (orange spring)	-0.5" w.c. (-0.12 kPa)
HP/kW Rating	100 hp (74.6 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for LPG Liquid
Mounting Position	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm Material	Silicone and Fluorosilicone
Applications	Stationary, mobile, industrial, and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS



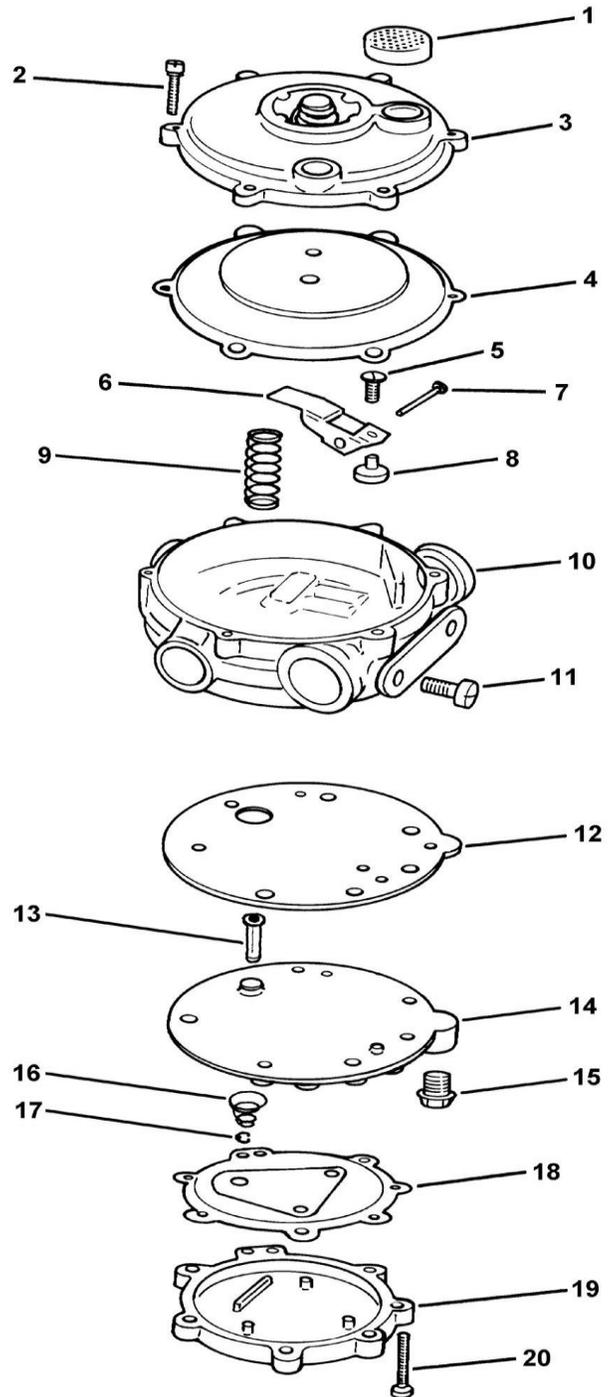
PART#	OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH	BACK OF CONVERTER TO CTR. OF FUEL OUTLET	BACK OF CONVERTER TO CTR. OF WATER OUTLET	COOLANT INLET AND OUTLET (NPT)	FUEL INLET (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNE. (NPT)
COBRA, COBRA-I	109MM (4.31")	66.5 MM (2.62")	117MM (4.62")	34.0 MM (1.34")	30.0mm (1.18")	41.3mm (1.625")	3/8"	1/4"	1/8"	1/2" 1/8"

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS	Screen, atmospheric vent
2	NSS*	Screw, 8-32 x 7/8" Torx style (6)
3	NSS	Cover ass'y, secondary
4	NSS*	Diaphragm Assy, Secondary, Flourosilicone
5	NSS	Screw, 8-32 x 1/2" Torx style
6	L1-37*	Lever, secondary
7	P1-8	Pin, secondary fulcrum
8	S4-27*	Seat, secondary
		Spring, blue secondary, -0.37 kPa (-1.5"
9	S2-35	H2O), standard
		Spring, orange secondary, -0.12 kPa (-0.5"
	S2-38	H2O), optional
10	NSS	Body ass'y, w/ jet
Not Shown	NSS	Plug, vapor outlet
11	S1-5	Screw, 1/4-20 x 5/8" (2)
12	NSS*	Gasket, body to body cover plate
13	NSS*	Pin, valve primary
14	NSS	Plate, body cover
15	P3-13	Plug, 1/8 NPT, hex head
16	NSS*	Spring, primary
17	NSS*	E-ring, external
18	NSS*	Diaphragm ass'y, primary
19	NSS	Cover, primary
20	NSS*	Screw, 8-32 x 1-1/8" Torx style (7)

NSS = Not Serviced Separately

* Included in Repair Kit



MODELS & ACCESSORIES

MODEL	DESCRIPTION	
COBRA	COBRA, W/AD1-27-5 (Fluorosilicone) diaphragm	Neg. 373 Pa (Neg. 1.5 "H2O)
COBRA-I	COBRA, W/AD1-27-5 (Fluorosilicone) diaphragm	Neg. 125 Pa (Neg. 0.5 "H2O)
CB-30177	Converter Ass'y, Cobra	
CB-30580-002	Converter Ass'y, Cobra	
CB-30580-004	Converter Ass'y, Cobra	
CB-30712-001	Cobra Ass'y, Primerless	Neg. 373 Pa (Neg. 1.5 "H2O)
CB-30712-002	Cobra Ass'y Primerless	Neg. 125 Pa (Neg. 0.5 "H2O)
CB-R-772	Cobra w/ Right Hand Plug	

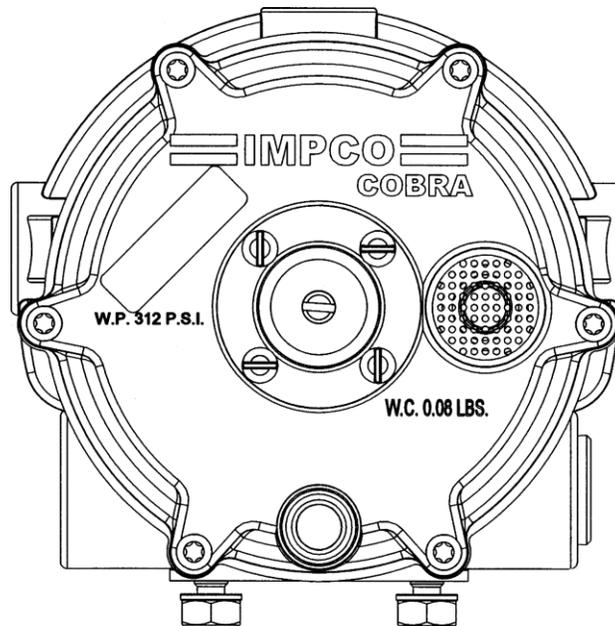
ACCESSORIES

PART #	DESCRIPTION
SV	Start assist valve
VPV	Vacuum power valve
AF4-14883	Check Valve
AE3-31273-001	Controller, CDPOZ Electronic

REPAIR KITS

PART #	DESCRIPTION
RK-COBRA	Standard repair kit
RK-C-717	Repair Kit, Cobra

P-COBRA



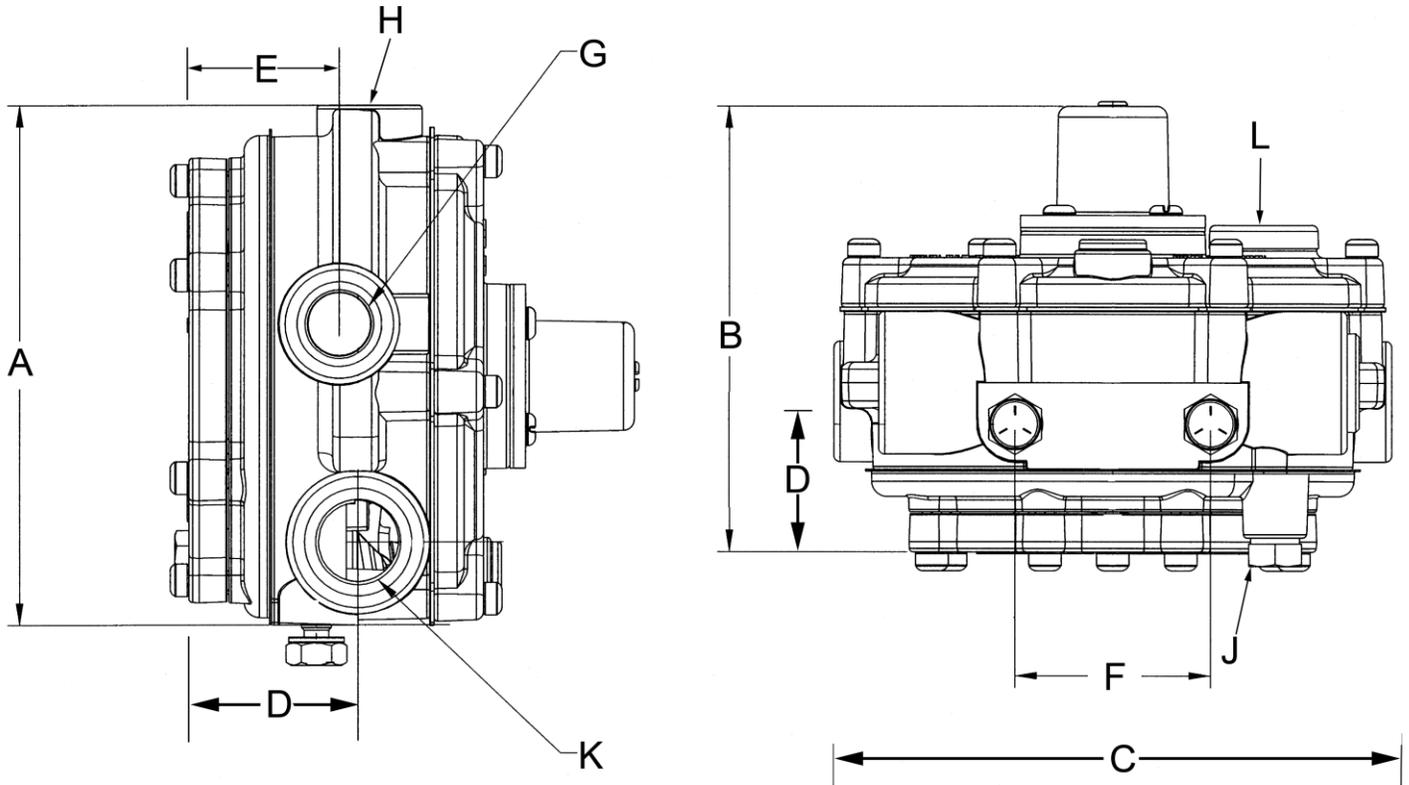
DESCRIPTION

The P-Cobra regulator delivers superior performance and excellent pressure output consistency. It is recommended for positive pressure Natural Gas fuel systems and may also be used for positive pressure LPG applications. The P-Cobra offers a greater service life and is ideal for applications with controlled emissions. It offers an adjustable outlet pressure and its primary pin design and Fluorosilicone diaphragm provide superior chemical resistance and cold weather operation.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	See table on next page
HP/kW Rating	80 hp (59.7 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Optional
Mounting Position	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 or HD-10 specified LPG fuel.
Diaphragm Material	Fluorosilicone
Applications	Mobile and industrial
Certification	Inquire for specific ECE approval

DIMENSIONS



	A	B	C	D	E	F	G	H	J	K	L
PART#	OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH	BACK OF CONVERTER TO CTR. OF FUEL OUTLET	BACK OF CONVERTER TO CTR. OF WATER OUTLET	COOLANT INLET AND MOUNTING HOLES CTR. TO CTR.	FUEL INLET (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNE. (NPT)	
P-COBRA	109.5mm (4.31")	91.4mm (3.60")	117MM (4.625")	41.3MM (1.625")	34.9mm (1.375")	41.3mm (1.625")	3/8"	1/4"	1/8"	1/2"	1/8"

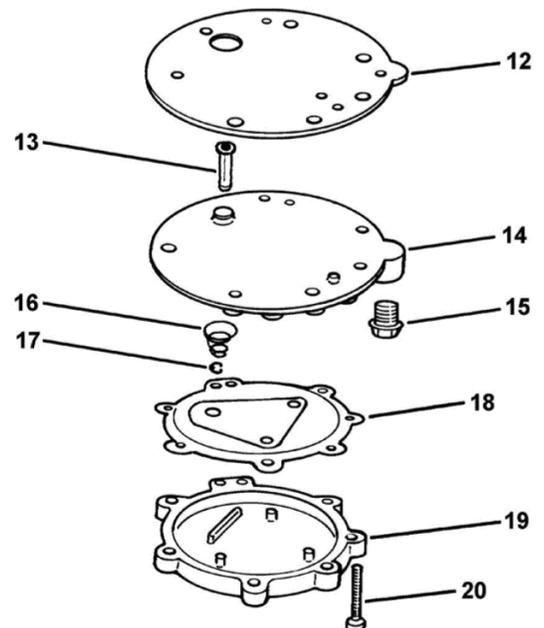
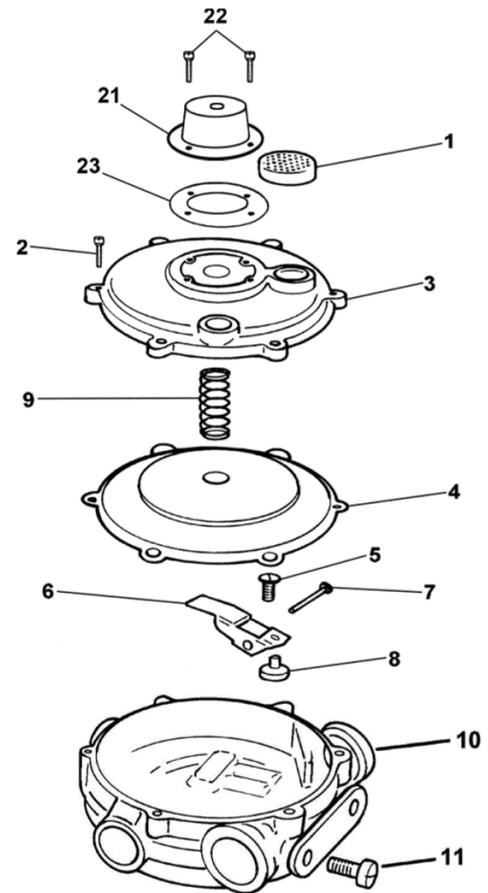
P-Cobra Outlet Pressures

Part Number	Nominal Outlet Pressure
P-Cobra	Range: +7" (1.23 kPa) to +10" w.c. (1.23 kPa)
P-Cobra-101	Fixed: +4.5" w.c.
P-Cobra-006	Fixed: +9.5" w.c.

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS	Screen, atmospheric vent
2	NSS	Screw, 8-32 x 7/8" Torx style (6)
3	NSS	Cover ass'y, secondary
4	AD1-27-4	Diaphragm Assy, Secondary, P-COBRA
5	NSS	Screw, 8-32 x 1/2" Torx style
6	L1-37	Lever, secondary
7	P1-8	Pin, secondary fulcrum
8	S4-27	Seat, secondary
9	S2-37	Spring, brown secondary
10	NSS	Body ass'y, w/ jet
Not Shown	NSS	Plug, vapor outlet
11	S1-5	Screw, 1/4-20 x 5/8" (2)
12	NSS	Gasket, body to body cover plate
13	NSS	Pin, valve primary
14	NSS	Plate, body cover
15	P3-13	Plug, 1/8 NPT, hex head
16	NSS	Spring, primary
17	NSS	E-ring, external
18	NSS	Diaphragm ass'y, primary
19	NSS	Cover, primary
20	NSS	Screw, 8-32 x 1-1/8" Torx style (7)
21	NSS	Cover, Adj
22	NSS	Screw, 6-32 5/16" Sems Pnh Sltd
23	G1-84	Gasket, Spr Hsg Mod Pev Pj

NSS = Not Serviced Separately

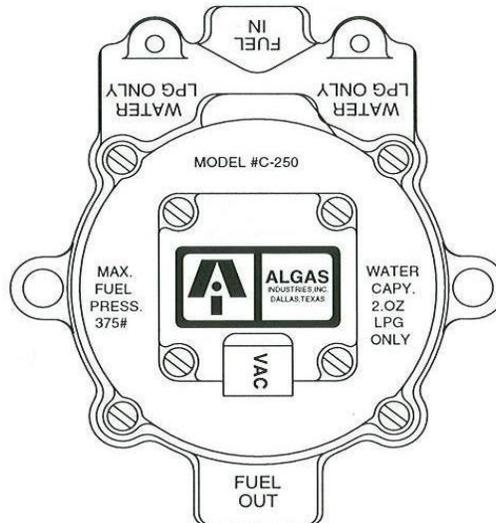


MODELS & ACCESSORIES

ACCESSORIES

PART #	DESCRIPTION
SV	Start assist valve
AF4-14883	Check Valve

Model C250A



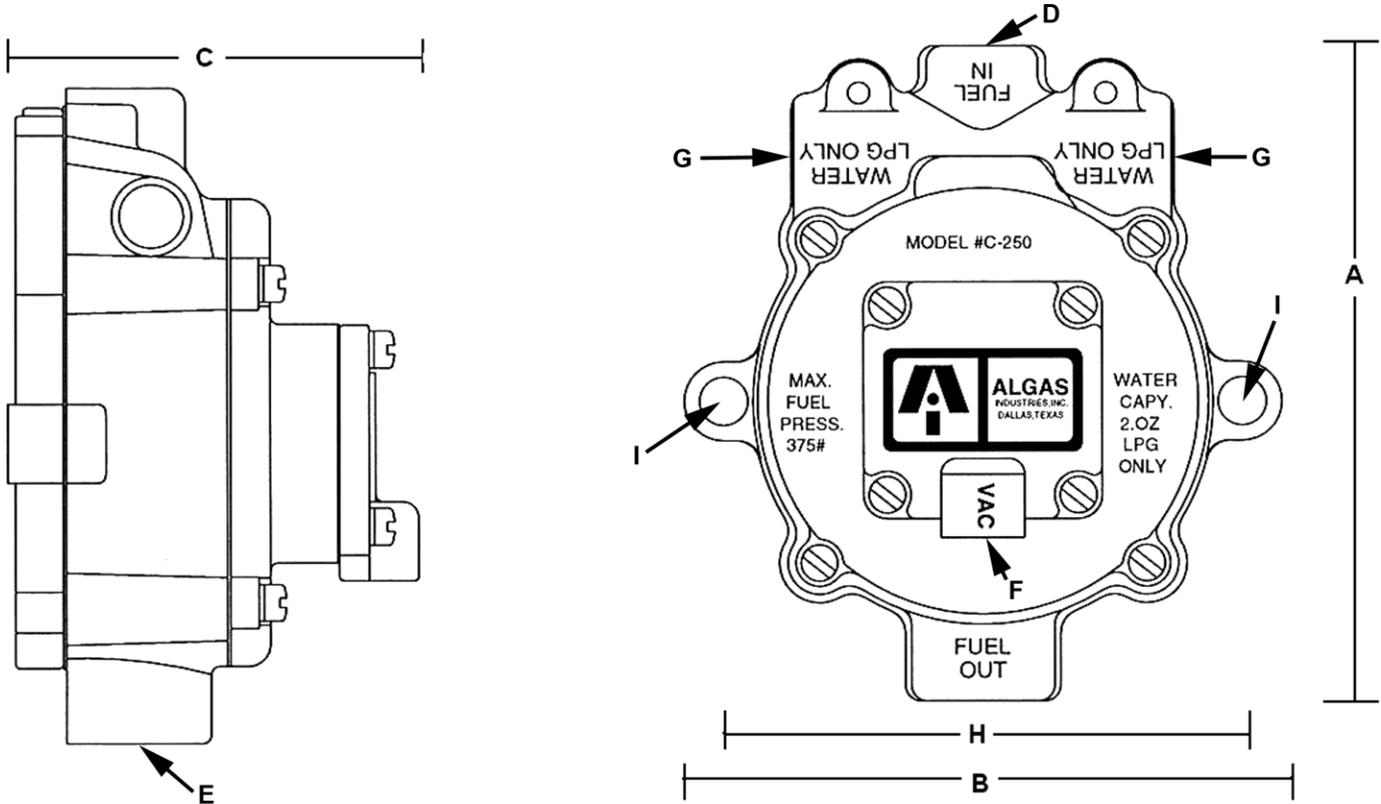
DESCRIPTION

The ALGAS C250A model regulator/vaporizer is a two stage, pressure reduction regulator. Variations of the regulator use water heated or an air heated element (used with air cooled engine applications). The C250A includes two side mounting holes.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	375 psig (25.9 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (w/o Power Ram)	
C250A.....	1.5 psi (10.3 kPa)
C250A-1	1.0 psi (6.9 kPa)
HP/kW Rating	
C250A.....	115 hp (85.8 kW)
C250A-1	75 hp (55.9 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for LPG Liquid (Engine Coolant or Air Heated Element)
Mounting Position	Vertical, with outlet down recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 specified LPG fuel.
Diaphragm Material	NBR
Applications	Mobile, industrial, and automotive
Certification	UL (AU2317 & AU1502), Inquire for specific ECE approval

DIMENSIONS



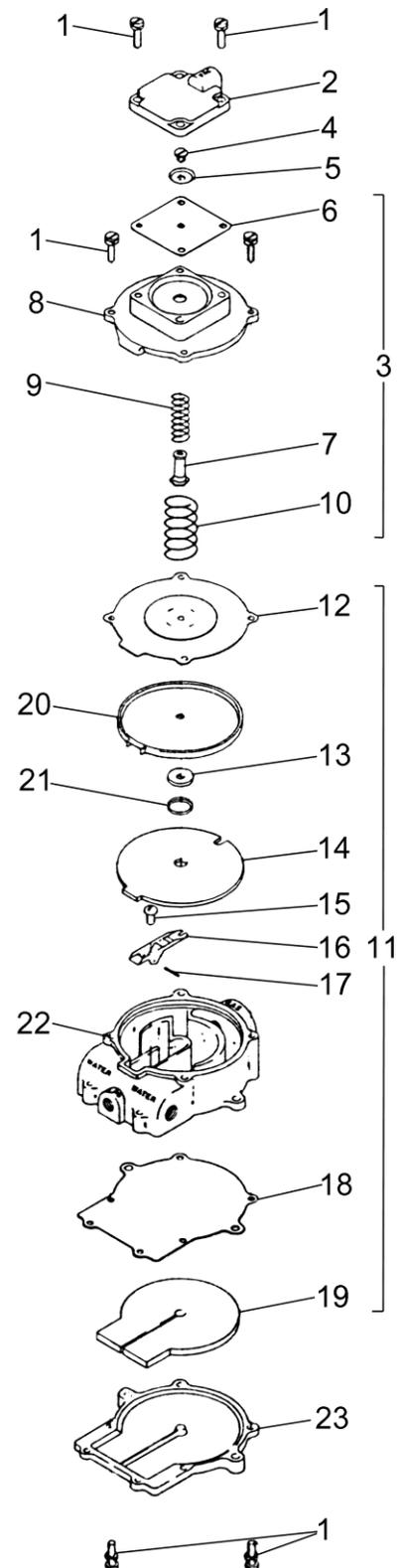
A B C D E

	OVERALL HEIGHT	OVERALL WIDTH	OVERALL DEPTH	FUEL INLET NPT	FUEL OUTLET NPT	VACUUM PORT NPT	INLET AND OUTLET NPT	MOUNTNG HOLE WIDTH	MOUNTNG HOLE SIZE	OUTLET PRESSURE (PSI)	OPERATING PRESSURE (PSI) W/O POWER RAM	REGULATOR SPRING	POWER RAM SPRING
C250A	131.7 mm (5.1875")	119.5 mm (4.6875")	382.5 mm (3.25")	1/4"	3/8"	1/8"	3/8"	103 mm (4.063")	1/4"	1.25	1.50	Silver	Red
C250A-1	131.7 mm (5.1875")	119.5 mm (4.6875")	382.5 mm (3.25")	1/4"	3/8"	1/8"	3/8"	103 mm (4.063")	1/4"	1.25	1.00	Silver	Silver

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS*	10-24 x 5/8" screw
2	NSS	Power-ram cover
3	2210*	Power-ram repair kit
4	NSS	8-32 x 1/4" screw
5	NSS	Power-ram diaphragm plate
6	NSS	Power-ram diaphragm
7	NSS	Power-ram pin
8	2250	Regulator cover
9	NSS*	Power-ram spring (red), for C250A-1
	NSS*	Power-ram spring (silver) for C250A-2
10	NSS	Regulator spring (silver) for C250A-9
	NSS	Regulator spring (red), for C250A-1, -2, -8
11	1-7010A	Regulator repair kit
12	NSS	Regulator diaphragm assembly
13	NSS	Liquid seal washer
14	NSS	Sponge
15	NSS	8-32 x 1/4" truss head screw
16	NSS	Regulator lever
17	NSS	Lever pin
18	NSS	Backplate gasket
19	NSS	Freeze pad
20	NSS	Liquid seal plate
21	NSS	Liquid seal washer retainer
	NSS	Converter body, C250A-3, -4
22	NSS	Converter body, C250A, A-1, -2, -8, -9
	NSS	Converter body, C250AH, AH-4
23	NSS	Backplate
24	NSS	10-24 x 1-3/4" screw (not shown)
25	NSS	Backplate gasket, C250A-3, -4 (not shown)
26	NSS	Water chamber body, C250A-3, -4 (not shown)

NSS = Not Serviced Separately

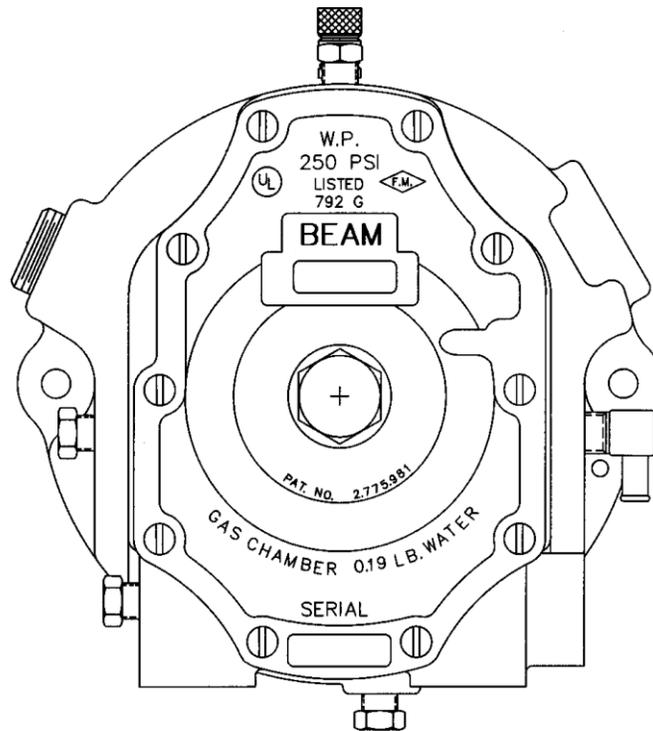


ACCESSORIES

REPAIR KIT

ITEM#	DESCRIPTION
1-7010	Kit, Minor, Overhaul C250
1-7012	Kit, Major, Overhaul C250A
2210	Power-ram repair kit

Model 120A

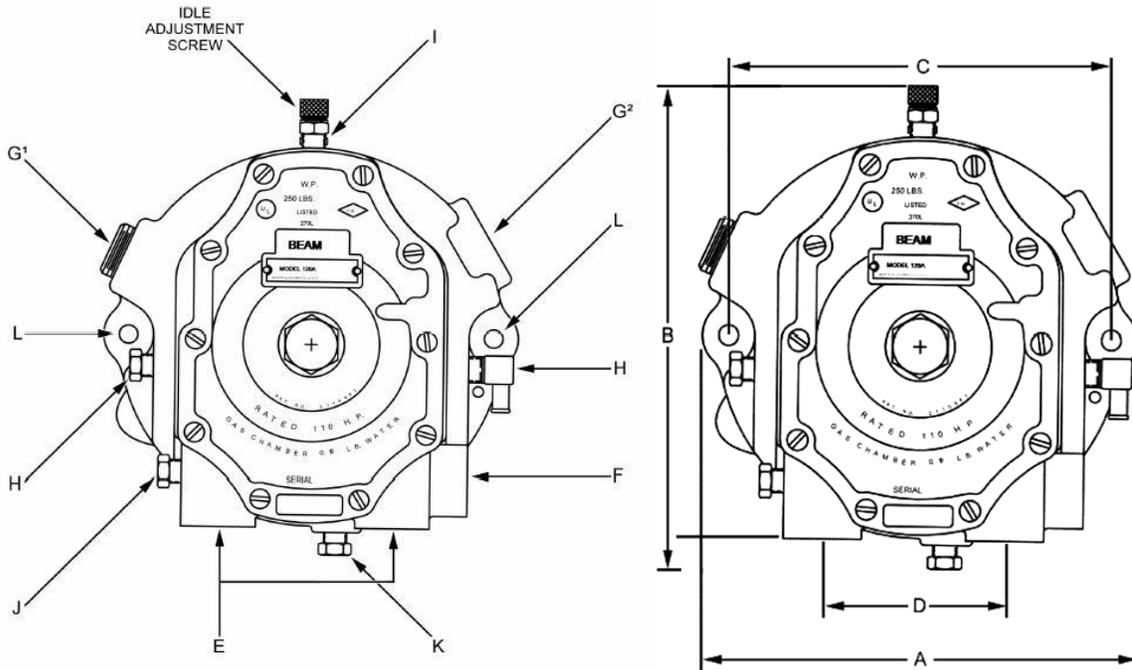


DESCRIPTION

The 120A regulator is a two-stage engine coolant heated regulator/vaporizer. The 120A is equipped with an internal vacuum lock-off which automatically shuts off the fuel outlet when the engine stops.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	250 psig (17.24 Bar)
Minimum	30 psi (206.8 kPa)
Outlet Pressure (Nominal)	-0.5" w.c. (-0.12 kPa)
HP/kW Rating	150 hp (111.9 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 Micron
Heating Chamber Source	Required for LPG Liquid
Mounting Position	Vertical recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 specified LPG fuel
Diaphragm Material	Hydrin
Application	Mobile, industrial, and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS


A B C D E F

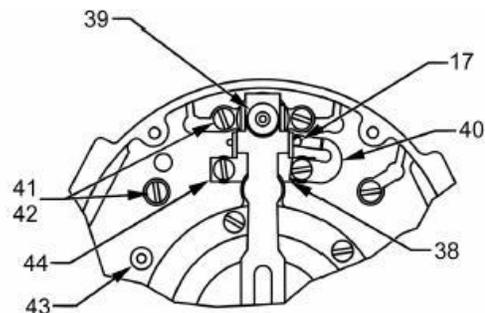
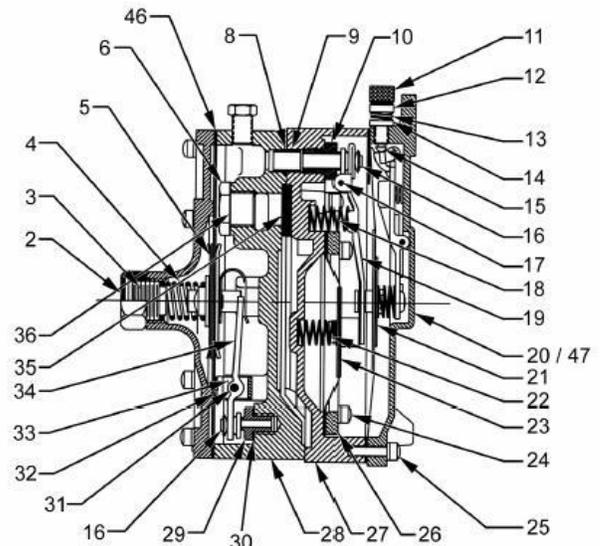
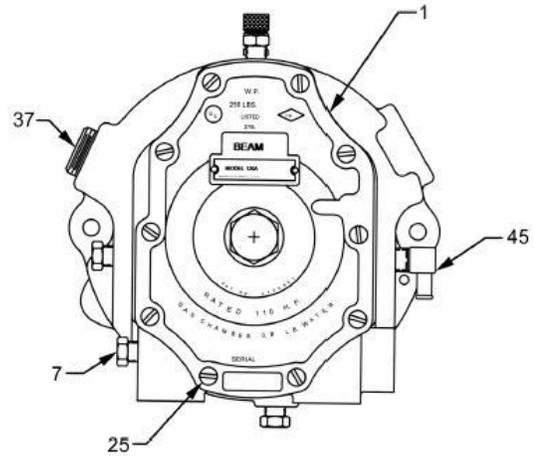
MODEL	OVERALL WIDTH	OVERALL HEIGHT	OVERALL DEPTH	MOUNTING HOLES CTR. TO CTR.	COOLANT IN/OUT CTR. TO CTR.	COOLANT INLET AND OUTLET (NPT)	FUEL INLET (NPT)
120A	146 mm (5.75")	157 mm (6.188")	130 mm (5.125")	140 mm (5.500")	63.5 mm (2.500")	3/8"	1/4"

MODEL	G ¹	G ²	H	I	J	K	L	M
	FUEL OUTLET (NPT)	FUEL OUTLET (NPT)	VACUUM PORTS (NPT)	PRIMARY TEST PORTS (NPT)	WATER DRAIN (NPT)	SECONDARY & OIL DRAIN (NPT)	MOUNTING HOLE DIAMETER	WITH IDLE SCREW
120A	1/2"	3/4"	1/8"	1/8"	1/8"	1/8"	6.4 mm (0.250")	Yes

COMPONENTS

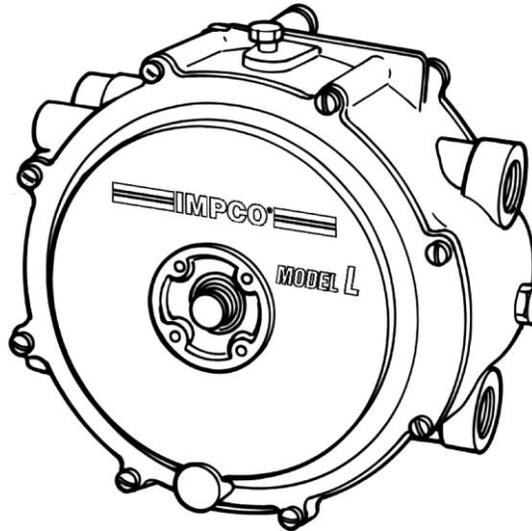
ITEM #	PART #	DESCRIPTION
1	NSS	Cover, primary machine
2	60-32A	Cap, spring retainer
3	NSS	Retainer, spring
4	NSS	Spring, primary pressure
5	NSS	Diaphragm ass'y, primary
6	NSS	Plug, water core
7	NSS	Plug, 1/8 NPT
8	NSS	Seal, o-ring
9	NSS	Tube, fuel passage
10	NSS	Orifice, secondary regulator
11	NSS	Screw, idle adjustment
12	NSS	Sleeve, spacer
13	NSS	Spring, idle adjustment
14	NSS	Cup, spring retainer
15	NSS	Pin, primer
16	3BRV	Valve, viton face
17	NSS	Pin, secondary pivot
18	NSS	Spring, secondary lever
19	NSS	Lever, secondary regulator
20	NSS	Cover, sub-ass'y
21	120-22	Diaphragm, secondary
22	NSS	Spring, vacuum lock
23	NSS	Diaphragm, vacuum lock
24	NSS	Screw, 10-32 UNF-2A
25	NSS	Screw, 10-32 UNF-2A
26	NSS	Ring, vacuum lock
27	NSS	Body, secondary
28	NSS	Body, converter
29	NSS	Orifice, primary regulator
30	NSS	Gasket, primary orifice
31	NSS	Pin, primary pivot
32	NSS	Screw, 10-32 UNF-2A
33	NSS	Bracket, primary lever
34	NSS	Lever, primary regulator
35	NSS	Plug, neoprene expansion
36	NSS	Gasket, plug
37	NSS	Plug, 1/2"-14 NPT
38	NSS	Bracket, secondary lever
39	NSS	3 br, cupped spring
40	NSS	Keeper
41	NSS	Screw, fillister head, 10"-32 thread w/patch lock
42	NSS	Washer
43	NSS	Fitting hose, 1/8 NPT x 1/4" x 90°
44	NSS	Seal, o-ring
45	F4-8	Screw, 10"-32 UNF-2A
46	NSS	Gasket, primary diaphragm
47	NSS	Cover, secondary

NSS = Not Serviced Separately



PART #	DESCRIPTION
120A-RBK	Kit, Rebuilding
120A-RCK	Kit, Complete Rebuilding
120A-RK	Kit, Repair
A120-10R	Diaphragm Repair Kit, Primary

Model L



DESCRIPTION

The Model L is a two stage regulator/vaporizer. These units are coolant heated and are able to provide liquid vaporization to supply up to 325 hp (242.4 kW) peak or 200 hp (149.1 kW) continuous in industrial engine applications. The Model L regulator provides a negative outlet pressure of -1.5" w.c. (-0.37 kPa). No optional pressures are available. The Model L offers economical performance with full features; rear fuel inlet, and primary and secondary diagnostic test ports. Optional silicone diaphragm materials are also available.

SPECIFICATIONS

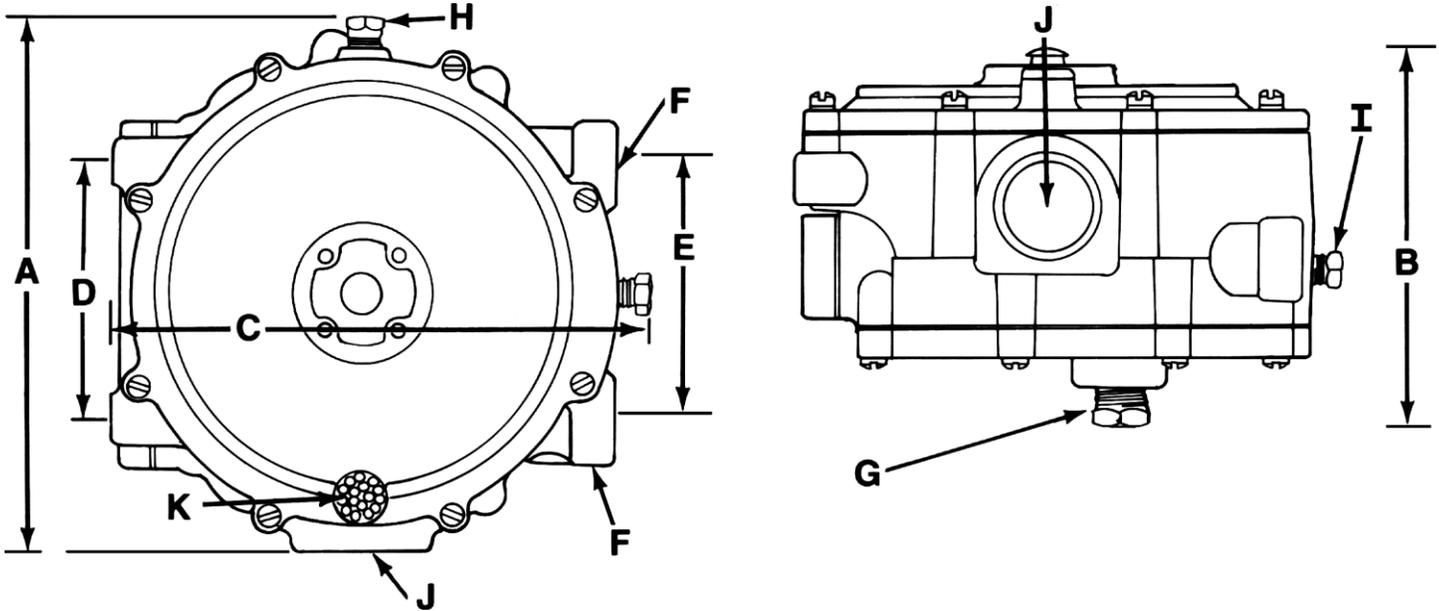
Fuel Type	LPG Liquid/Vapor
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	-1.5" w.c. (0.37 kPa)
HP/kW Rating	325 hp (242.4 kW) peak, 200 hp (149.1 kW) continuous
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for liquid LPG
Mounting Position	Vertical, with outlet down recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 specified LPG fuel.
Applications	Mobile, industrial and automotive
Certification	UL (AU1502), Inquire for specific ECE approval

Model L

Regulators



DIMENSIONS

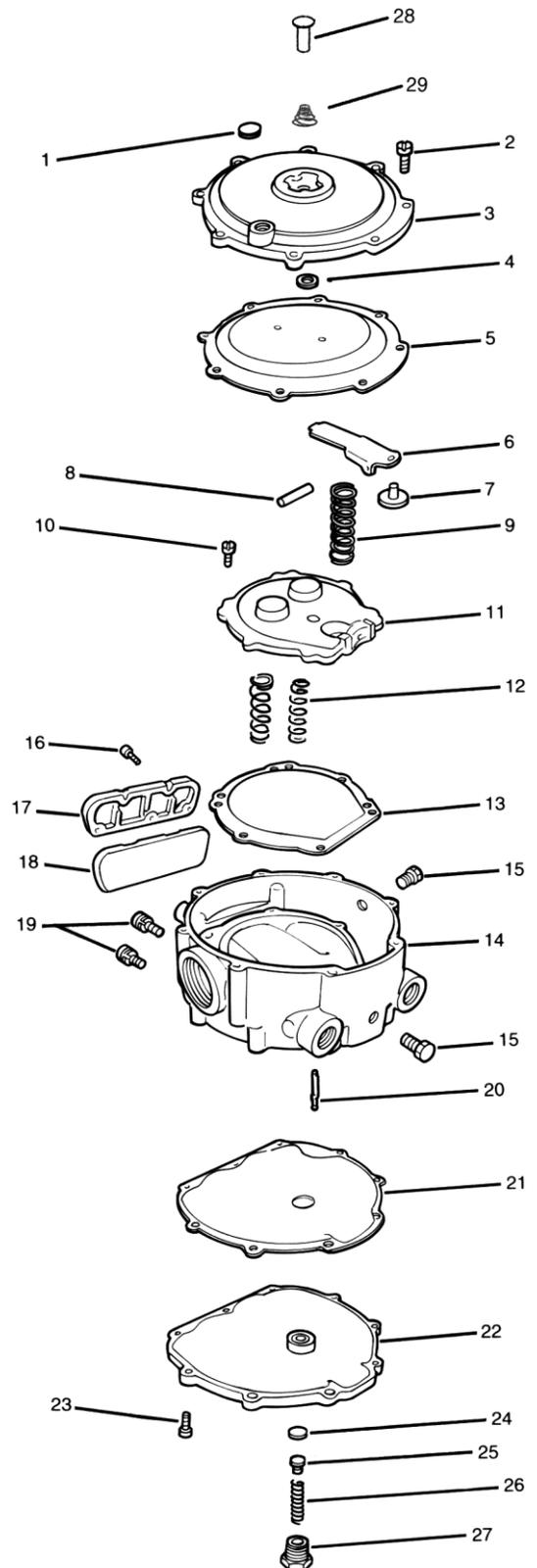


	A	B	C	D	E	F	G	H	I	J	K
	OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH	MOUNTING HOLES CTR. TO CTR.	COOLANT INLET AND OUTLE CTR. TO CTR.	COOLANT INLET AND OUTLET (NPT)	FUEL INLET (NPT)	SECONDARY TEST PORT (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNECTION (NPT)
LB, LB-2	160mm (6.313")	110mm (4.313")	165mm (6.500")	76.2mm (3.00")	76.2mm (3.00")	3/8"	1/4"	1/8"	1/8"	1"	1/8"

COMPONENTS

ITEM#	PART#	DESCRIPTION
1	S7-1	Screen, atmospheric vent
2	S1-59*	Screw, 8-32 x 5/8" SEMS (8)
3	NSS	Cover ass'y, secondary
4	W1-27*	Washer, hand primer
5	NSS*	Diaphragm ass'y, secondary, Hydrin
	NSS*	Diaphragm ass'y, secondary, Silicone
6	L1-87*	Lever, secondary
7	S4-37*	Seat, secondary
8	NSS	Pin, secondary lever fulcrum
9	S2-97	Spring, secondary regulator (blue)
10	S1-59*	Screw, 8-32 x 3/8" SEMS (2)
11	NSS	Cover, primary diaphragm
12	S2-92	Spring, primary regulator
13	NSS*	Diaphragm ass'y, primary
14	NSS	Body ass'y
15	P3-13	Plug, hex head, 1/8 NPT
16	S1-59*	Screw, 8-32 x 5/8" SEMS (5)
17	C1-61	Cover, water passage
18	NSS*	Gasket, water passage
19	S1-5	Screw, 1/4-20 x 5/8" SEMS (2)
20	P1-34	Pin, primary valve
21	NSS*	Gasket, vaporizing chamber
22	AC1-64	Cover, vaporizing chamber
23	S1-3*	Screw, 10-24 x 5/8" SEMS (9)
24	NSS*	Seat, primary
25	NSS*	Seat support, primary
26	S2-93	Spring primary valve
27	B3-25551	Bushing, fuel inlet
28	NSS	Pin, Primer
29	NSS	Spring, Primer

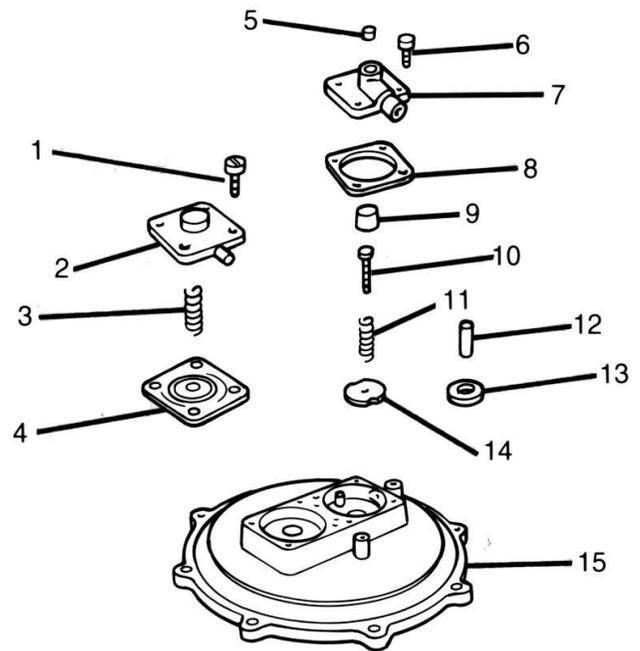
* Item included in repair kit



COMPONENTS (CONTINUED)

COVER (L-20 SERIES WITH EC1)

ITEM#	PART #	DESCRIPTION
1	NSS	Screw, 8-32 x 5/8" SEMS (4)
2	NSS	Cover, diaphragm
3	NSS	Spring, diaphragm
4	NSS	Diaphragm ass'y, for EC1
5	NSS	Plug, 1/16 NPT
6	NSS	Screw, 8-32 x 5/8" SEMS (4)
7	NSS	Cover, EC1-3
8	NSS	Gasket, EC1 body
9	NSS	Spring, valve
10	NSS	Screw adjustment, 6-32 x 7/8"
11	NSS	Screw, adjustment lock
12	NSS	Screw, Allen set, 10-32 x 3/4"
13	NSS	Nut, 10-32
14	NSS	Valve, disk
15	NSS	Cover ass'y, secondary, w/ EC1



FUEL CONTROL VALVES

PART #	DESCRIPTION
SV *	Start assist valve, electric solenoid
VPV *	Vacuum power valve
FCV	Fuel control valve, computer feedback system

* Use in secondary accessory port.

REPAIR KITS

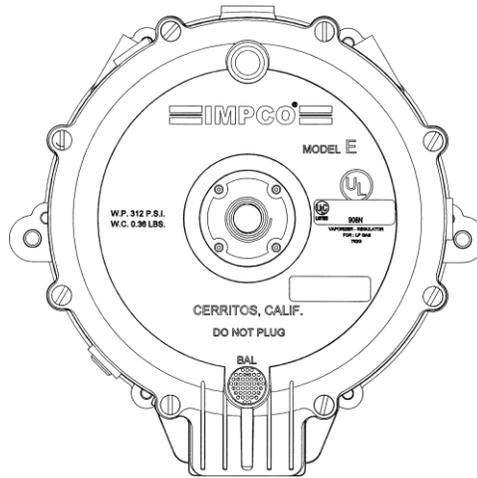
PART #	DESCRIPTION
RK-L	For model L
RK-L-2	For model L, w/ silicone diaphragm

NSS = Not Serviced Separately

GAUGE

PART #	DESCRIPTION
G2-2	For Models E & L secondary lever

Model E & PE



DESCRIPTION

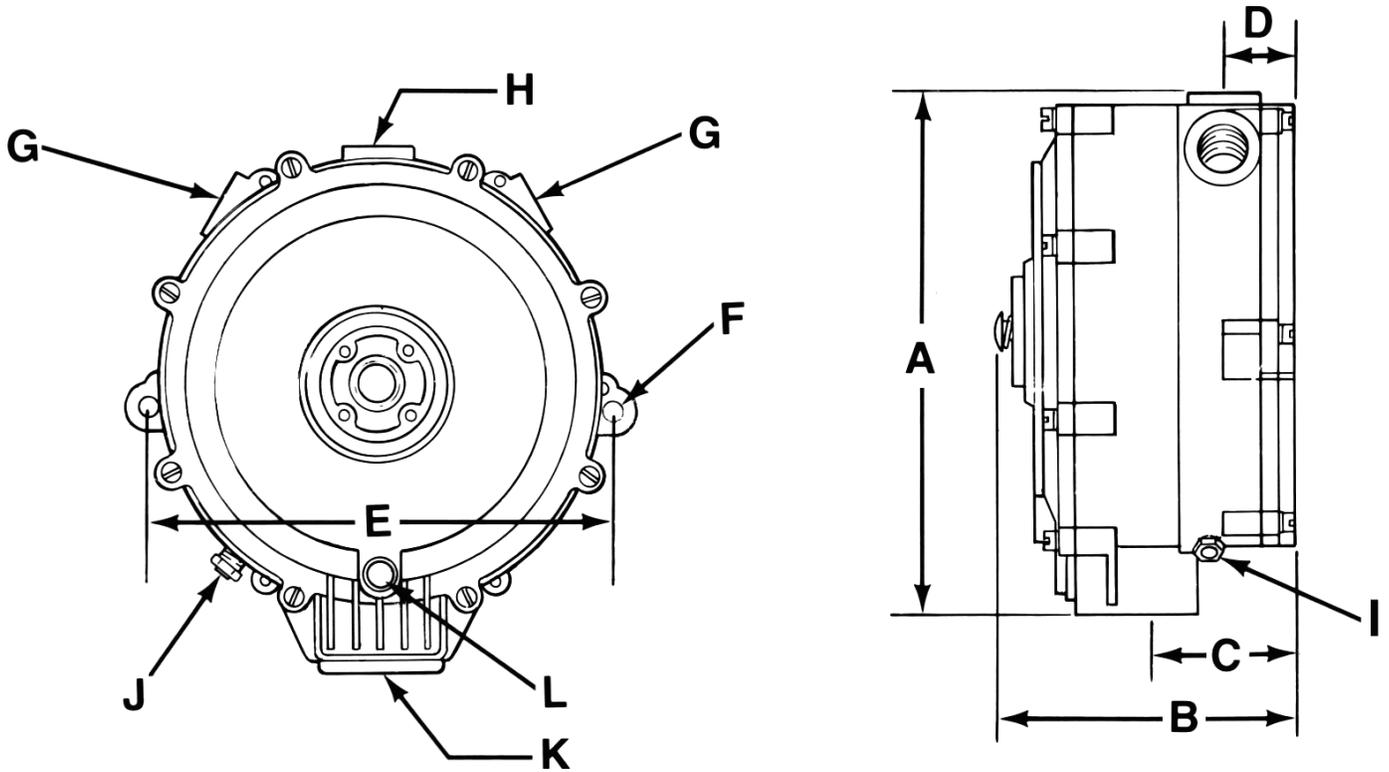
The model E & PE are engine heated two-stage regulator/vaporizers. The model E provides a choice of two negative outlet pressures. A “B” blue secondary spring provides a -1.5” w.c. (-0.37 kPa) output and an optional “O” orange secondary spring provides -0.5” w.c. (-0.12 kPa) output. A manual primer is standard on the Model E.

The model PE provides a positive outlet pressure for applications that require a positive feed system and/or the ability to vaporize liquid fuel. A heated regulator/vaporizer is not required of CNG (it is recommended that the Model PEV be used for these systems). Additional mixture stability is possible with the PE as a result of a more consistent fuel temperature gained through the use of the heated labyrinth. The PE is supplied as a fixed outlet pressure regulator but can be converted to an adjustable unit with the AC1-74 retrofit kit.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor and Natural Gas
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure (Nominal)	
EB	-1.5” w.c. (-0.37 kPa)
EO	-0.5” w.c. (-0.12 kPa)
PE	+5.0” w.c. (1.2 kPa)
HP/kW Rating	325 hp (242.3 kW) LPG
	200 hp (150 kW) where lower water flow-rate is a factor.
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Fuel Filtration Required	40 micron
Heating Chamber Source	Required for liquid LPG
Mounting Position	Vertical (outlet down) recommended. Horizontal position can be used when fuel contamination can be controlled with HD-5 specified LPG fuel
Diaphragm Material	Hydrin, Silicone, and Fluorosilicone (optional)
Applications	Stationary, mobile, industrial, and automotive
Certification	UL (AU2317 & AU1502), Inquire for specific ECE approval

DIMENSIONS



Model E Shown

	A	B	C	D	E	F	G	H	I	J	K	L
	BACK OF											
	CONVERTER		TO CTR. OF		MOUNTING		COOLANT		PRIMARY			VENT
STANDARD	OVERALL	OVERALL	BACK OF	BACK OF	HOLE CTR.	MOUNTING	INLET AND	FUEL	TEST	SECONDARY	FUEL	BALANCE
CONVERTER	HEIGHT	DEPTH	CONVERTER	CONVERTER	CTR.	HOLE CTR.	OUTLET	INLET	PORT	TEST PORT	OUTLET	LINE
			TO CTR. OF	TO CTR. OF	TO CTR.	HOLES DIA.	(NPT)	(NPT)	(NPT)	(NPT)	(NPT)	(NPT)
			FUEL OUTLET	WATER								
EB, EB-2, EB-2ULC	184 mm (7.250")	102 mm (4.000")	50.8 mm (2.000")	25.0mm (0.98")	168 mm (6.625")	7.1 MM (0.281")	3/8"	1/4"	1/8"	1/8"	1"	1/8"
PE	184 mm (7.250")	114 mm (4.500")	50.8 mm (2.000")	25.0mm (0.98")	168 mm (6.625")	7.1 MM (0.281")	3/8"	1/4"	1/8"	1/8"	1"	1/8"
PE-8	184 mm (7.250")	127.7 mm (5.03")	50.8 mm (2.000")	25.0mm (0.98")	168 mm (6.625")	7.1 MM (0.281")	3/8"	1/4"	1/8"	1/8"	1"	1/8"
T-EB-2	184 mm (7.250")	102 mm (4.000")	50.8 mm (2.000")	25.0mm (0.98")	168 mm (6.625")	7.1 MM (0.281")	3/8"	1/4"	1/8"	1/8"	1"	1/8"

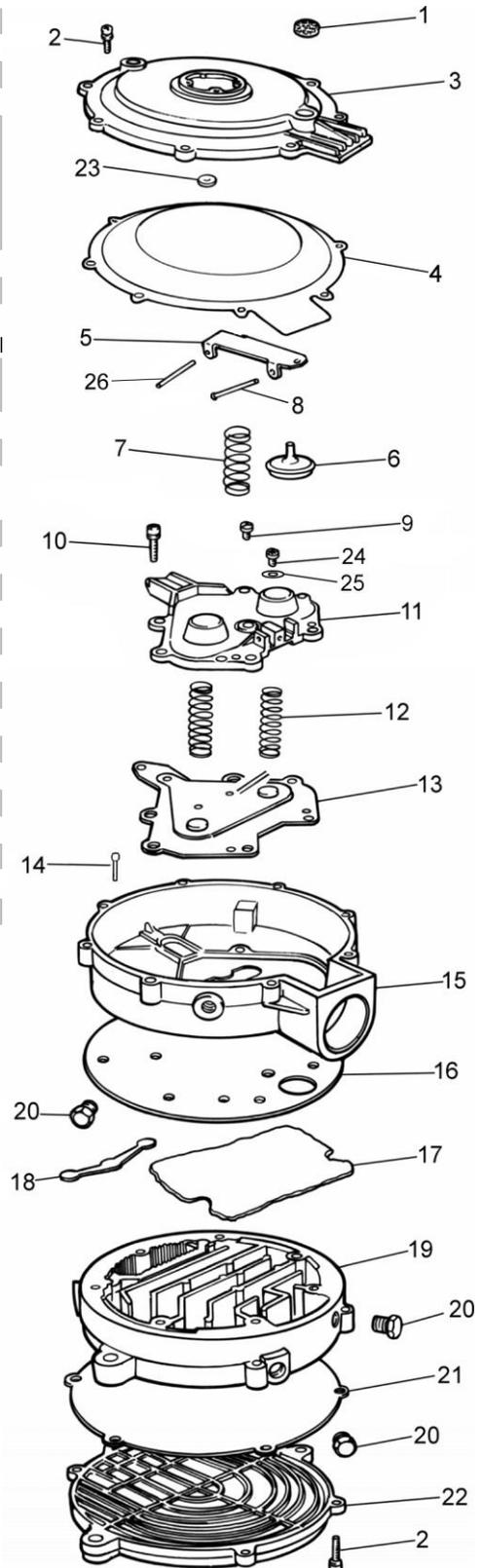
COMPONENTS

ITEM #	PART #	DESCRIPTION
1	NSS	Screen, Atmospheric Vent
2	S1-3*	Screw, 10-24 x 5/8" SEMS (8)
3	NSS	Cover, Secondary
4	NSS* (1)	Diaphragm, Secondary, Hydrin Model E
	NSS* (2)	Diaphragm, Secondary, Silicone Model E
	NSS* (3)	Diaphragm, Secondary, Fluorosilicone E
	NSS* (4)	Diaphragm, Secondary, Hydrin PE
	NSS* (5)	Diaphragm, Secondary, Silicone PE
5	NSS*	Lever, Secondary w/ or w/o Hole
6	NSS*	Seat, Secondary
7†	S2-22	Spring, Secondary Regulator (Blue), Standard
	S2-23	Spring, Secondary Regulator (Orange), Optional
8	NSS	Pin, Secondary Lever Fulcrum (Early Model)
	NSS	Pin, Secondary Lever Fulcrum (Later Model)
9	NSS*	Screw, 10-24 x 3/8" SEMS
10	NSS* (1)(2)(3)	Screw, 12-24 x 1 1/8" SEMS Model E Only
11	NSS	Cover, Primary Diaphragm (Early Model)
12	NSS	Cover, Primary Diaphragm (Later Model)
13	NSS*	Spring, Primary Regulator EB (2)
14	NSS*	Diaphragm Assy, Primary
15	NSS*	Pin, Primary Valve
16	NSS	Body, Regulator E Series
17	NSS*	Gasket, Regulator Body
18	NSS*	Sponge
19	NSS*	Seat, Primary
20	NSS	Body, Assy, Heat Exchanger
21	NSS	Plug, Hex Head, 1/8" NPT (3)
22	NSS*	Gasket, Heat Exchanger Cover
23	NSS	Cover, Heat Exchanger
24	NSS*	Washer, hand primer
25	NSS*	Screw 8-32 x .25" (Later Model)
26	NSS*	Flat Washer (Later Model)
27	NSS*	Pin, Lever Diaphragm Link

NSS = Not Serviced Separately

* Repair kit components. (1) = RK-E; (2) = RK-E-2; (3) = RK-E-3; (4) RK-PE; (5) = RK-TE

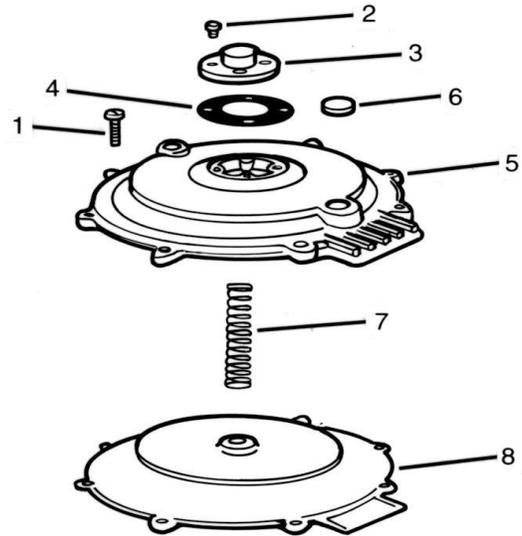
† Two vapor outlet pressures are available. The orange secondary spring gives -0.5" w.c. (-0.12 kPa) pressure. The blue secondary spring gives a -1.5" w.c. (-0.37 kPa) pressure.



COMPONENTS (CONTINUED)

C1-22-2 COVER
PE/PEV SERIES

ITEM #	PART#	DESCRIPTION
1*	S1-3	Screw, 10-24 x 5/8" SEMS (8)
2*	S1-101	Screw, 6-32 x 1/4" SEMS (4)
3	H3-3	Housing, spring
4*	G1-84	Gasket, spring housing
5	NSS	Cover ass'y
6	S7-1	Screen, atmospheric vent
7	S2-37	Spring, secondary
	S2-42	Spring, secondary, PEV-1-8 only
8*	NSS	Diaphragm assembly, secondary, Hydrin

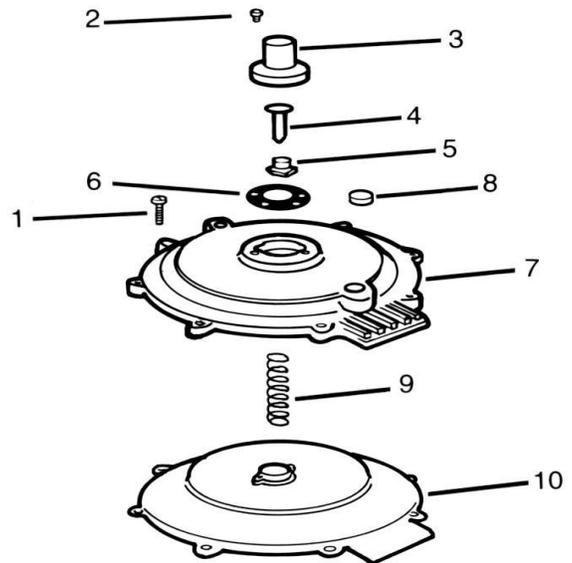


C1-22-2 Cover Shown with the H3-3 fixed spring housing.

C1-22-2 COVER WITH AC1-74
PE/PEV-1 SERIES

ITEM #	PART#	DESCRIPTION
1*	S1-3	Screw, 10-24 x 5/8" SEMS (8)
2*	S1-101	Screw, 6-32 x 1/4" SEMS (4)
3	NSS	Cover, adjustable PEV
4	NSS	Screw, PEV adjustment
5	NSS	Nut, PEV spring perch
6*	G1-84	Gasket, spring housing
7	NSS	Cover assembly
8	S7-1	Screen, atmospheric vent
	S2-37	3.7" to 6.5" w.c. (0.92 to 1.62 kPa)
9	S2-42	7.0" to 14.0" w.c. (1.74 to 3.5 kPa)
	S2-106	2.0" to 2.8" w.c. (.50 to 0.70 kPa)
	S2-109	2.7" to 3.9" w.c. (.67 to 0.96 kPa)
10*	NSS	Diaphragm assembly secondary, Hydrin

NSS = Not Serviced Separately



C1-22-2 Cover Shown with the optional AC1-74 Adjustable Spring Housing.

STANDARD AND OPTIONAL EQUIPMENT

FUEL CONTROL VALVES

PART #	DESCRIPTION
SV*	Start assist valve, electric solenoid
VPV*	Vacuum power valve
FCV	Fuel control valve, computer feedback system.

*Use in secondary accessory port

PRIMER

PART #	DESCRIPTION
AB1-28	Mechanical primer, for E-series converters (also fits J- & L-series, cannot be used w/ECI)

GAUGE

PART #	DESCRIPTION
G2-2	For Models E & L secondary lever

REPAIR KITS

PART #	DESCRIPTION
RK-E	Repair Kit Model E, Hydrin Diaphragm
RK-E-2	Repair Kit Model E, w/Silicone Diaphragm
RK-E-3	Repair Kit Model E, Fluorosilicone Diaphragm
RK-TE	Repair Kit Model E, Turbo w/Silicone Diaphragm
RK-PE	Repair Kit Model PE, Hydrin Diaphragm

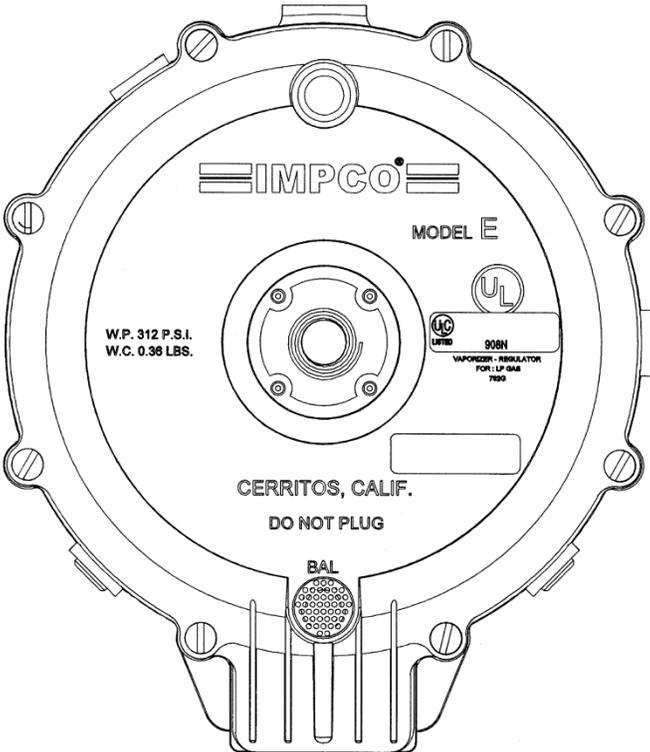
Model EV & PEV

DESCRIPTION

The Model EV & PEV are two-stage regulators for vapor fuel applications where vaporization is not required. Diagnostic test ports are standard for both the primary and secondary pressure chambers, and a choice of diaphragm materials are available. The EV comes with the standard “B” blue secondary spring with -1.5” w.c. and an optional “O” orange secondary spring is also available with a give up pressure of -0.5” w.c.

Specific PEV regulators are available in several fixed outlet pressures. Adjustable pressure units are also available. Fixed regulators can be converted in the field to adjustable, with the AC1-74 kit.

Adjustable units can be converted to fixed outlet pressure by using the H3-3 spring cover. This is preferred for applications that are not subject to fuel quality variations, or for those where emissions are a concern (the spring cover acts as a deterrent to unauthorized tampering).

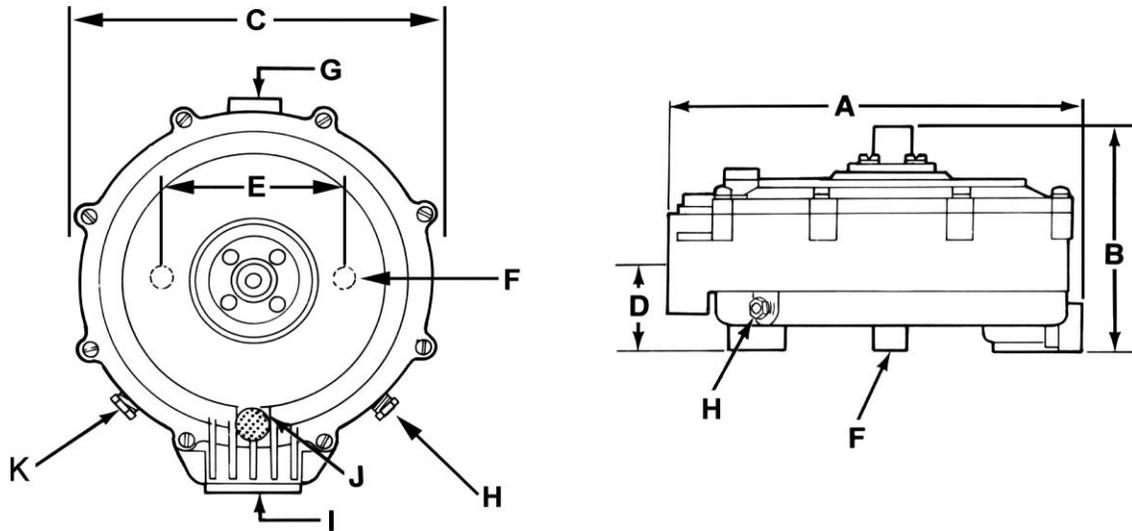


Model EV Shown

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure	
Maximum	312 psi (21.51 Bar)
Minimum	30 psi (207 kPa)
Outlet Pressure	
EV	-1.5” w.c. (-0.37 kPa)
PEV	7.0" to 14.0" w.c. (1.74 to 3.5 kPa) w/ optional springs or AC1-74
HP/kW Rating.....	200 hp (149.1 kW) @ 150 psi (10.34 bar) inlet
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Heating Chamber	N/A
Mounting Position.....	Vertical (outlet down) recommended.
Diaphragm Material	Hydrin, Silicone, and Fluorosilicone (optional)
Applications.....	Stationary, mobile, and industrial
Certification	
EV	Inquire for specific ECE approval
PEV	UL (AU2317), ULC, Inquire for specific ECE approval

DIMENSIONS



Model PEV Shown

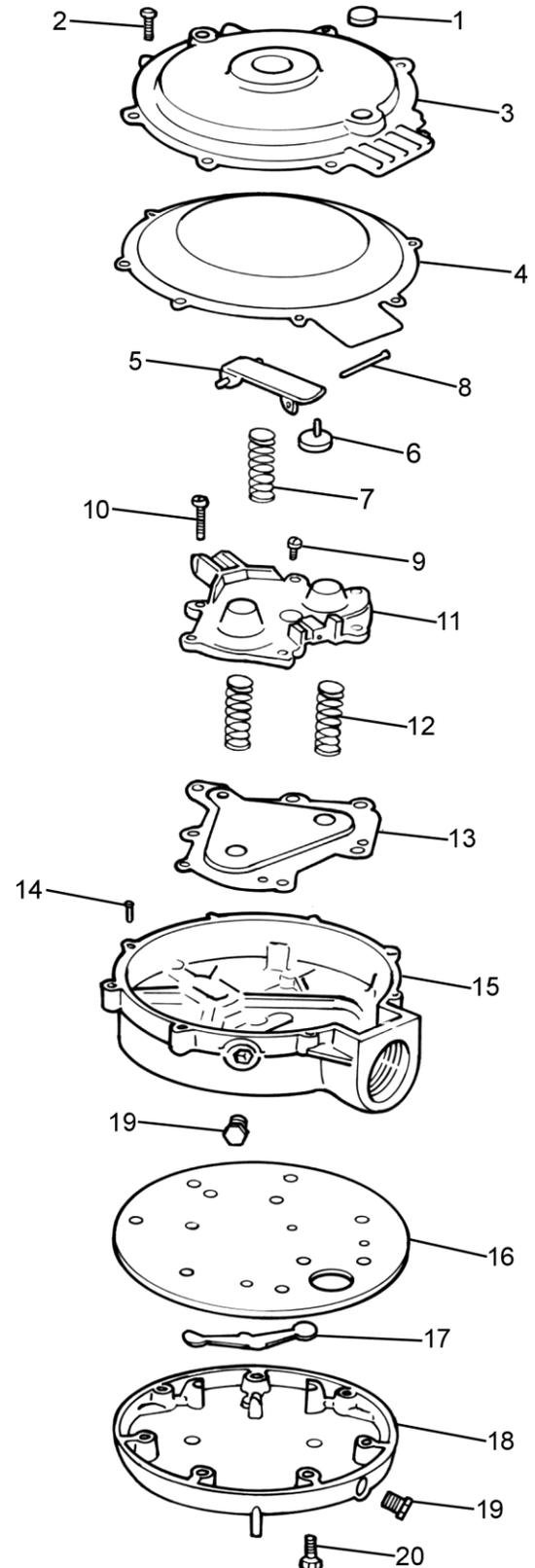
	A	B	C	D	E	F	G	H	I	J	K
				BACK OF CONVERTER MOUNTING TO CTR. FUEL OUTLET	HOLE CTR. TO CTR.	MOUNTING HOLES DIA.	FUEL INLET (NPT)	PRIMARY TEST PORT (NPT)	FUEL OUTLET (NPT)	VENT BALANCE LINE CONNECTION (NPT)	SECONDARY TEST PORT
STANDARD CONVERTER	OVERALL HEIGHT	OVERALL DEPTH	OVERALL WIDTH								
EV	181 mm (7.250")	88.9 mm (3.500")	152 mm (6.000")	38.1 mm (1.500")	124 mm (5.000")	1/4"-20	1/4"	1/8"	1"	1/8"	1/8"
EV-2	181 mm (7.250")	88.9 mm (3.500")	152 mm (6.000")	38.1 mm (1.500")	124 mm (5.000")	1/4"-20	1/4"	1/8"	1"	1/8"	1/8"
PEV-1	181 mm (7.250")	88.9 mm (3.500")	152 mm (6.000")	38.1 mm (1.500")	124 mm (5.000")	1/4"-20	1/4"	1/8"	1"	1/8"	1/8"
T-PEV-1	181 mm (7.250")	92 mm (3.630")	152 mm (6.000")	38.1 mm (1.500")	124 mm (5.000")	1/4"-20	1/4"	1/8"	1"	1/8"	1/8"

COMPONENTS

ITEM #	PART #	DESCRIPTION
1	S7-1	Screen, atmospheric vent
2	S1-3	Screw, 10-24 x 5/8" SEMS (8)
3	NSS	Cover ass'y, front (EV only)
4	NSS	Diaphragm ass'y, secondary, Hydrin (EV)
	AD1-23	Diaphragm ass'y, secondary, silicone (EV-2)
5	NSS	Lever, secondary
6	NSS	Seat, secondary (new) standard
7*	S2-22	Spring, secondary regulator (blue) standard (EV only)
	S2-23	Spring, secondary regulator (orange) optional (EV only)
8	NSS	Pin, secondary lever fulcrum
9	S1-40	Screw, 10-24 x 3/8" SEMS (2)
10	NSS	Screw, 12-24 x 1.0" SEMS (7)
11	NSS	Cover, primary diaphragm
12	S2-42	Spring, primary regulator (2)
13	NSS	Diaphragm ass'y, primary
14	NSS	Pin, primary valve
15	NSS	Body, regulator E series
16	G1-37	Gasket, regulator body
17	NSS	Seat, primary
18	NSS	Body, ass'y, regulator
19	NSS	Plug, 1/8 NPT, water drain (2)
20	NSS	Plug, hex head, 1/8 NPT (2)

NSS=Not Serviced Separately

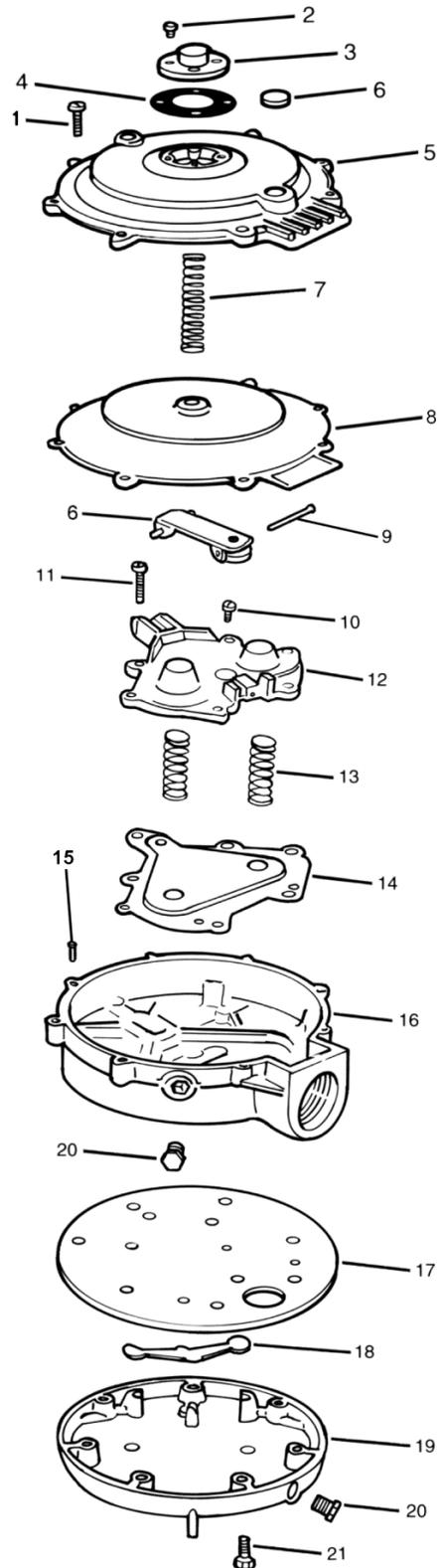
Note: Two vapor outlet pressures are available. The orange secondary spring gives -0.5" w.c. (-0.12 kPa) pressure. The blue secondary spring gives -1.5" w.c. (-0.37 kPa) pressure. To change any B regulator to O, change blue secondary spring to orange.



COMPONENTS

ITEM #	PART #	DESCRIPTION
1*	S1-3	Screw, 10-24 x 5/8" SEMS (8)
2*	S1-101	Screw, 6-32 x 1/4" SEMS (4)
3	C1-17	Housing, spring
4*	G1-84	Gasket, spring housing
5	C1-22-2	Cover ass'y
6	S7-1	Screen, atmospheric vent
	S2-37	Spring, secondary
7	S2-109	Spring, Secondary (PEV-3)
	S2-42	Spring, secondary, (PEV-1-8)
8*	NSS	Diaphragm assembly, secondary, Hydrin
9	NSS	Pin, secondary lever fulcrum
10*	S1-40	Screw, 10-24 x 3/8" SEMS (2)
11*	S1-52-1	Screw, 12-24 x 1.0" SEMS (7)
12	NSS	Cover, primary diaphragm
13	S2-42	Spring, primary regulator (2)
14*	NSS	Diaphragm ass'y, primary
15	NSS	Pin, primary valve
16	AB1-20A	Body, regulator E series
17*	G1-37	Gasket, regulator body
18*	NSS	Seat, primary
19	NSS	Body, ass'y, regulator
20	NSS	Plug, 1/8 NPT, water drain
21	NSS	Plug, hex head, 1/8 NPT (2)

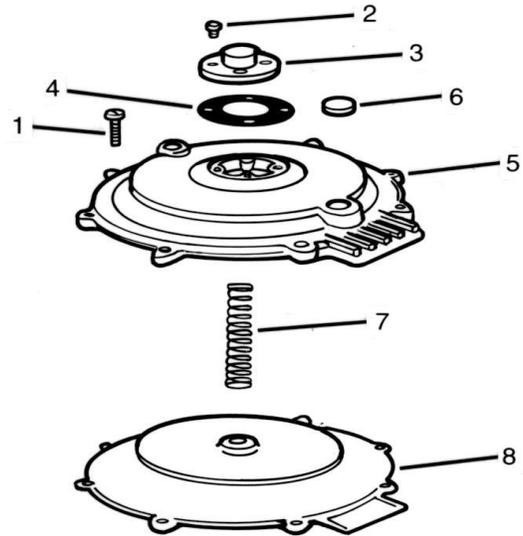
*Repair Kit Components



COMPONENTS (CONTINUED)

C1-22-2 COVER
PE/PEV SERIES

ITEM #	PART#	DESCRIPTION
1*	S1-3	Screw, 10-24 x 5/8" SEMS (8)
2*	S1-101	Screw, 6-32 x 1/4" SEMS (4)
3	H3-3	Housing, spring
4*	G1-84	Gasket, spring housing
5	NSS	Cover ass'y
6	S7-1	Screen, atmospheric vent
7	S2-37	Spring, secondary
	S2-42	Spring, secondary, PEV-1-8 only
8*	NSS	Diaphragm assembly, secondary, Hydrin

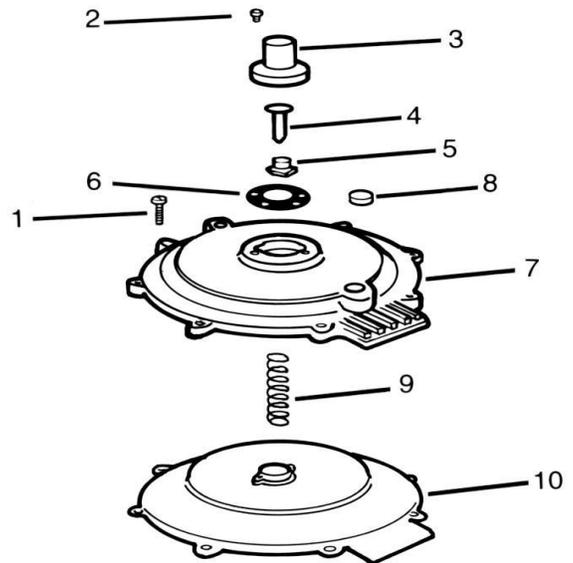


C1-22-2 Cover Shown with the H3-3 fixed spring housing.

C1-22-2 COVER WITH AC1-74
PE/PEV-1 SERIES

ITEM #	PART#	DESCRIPTION
1*	S1-3	Screw, 10-24 x 5/8" SEMS (8)
2*	S1-101	Screw, 6-32 x 1/4" SEMS (4)
3	NSS	Cover, adjustable PEV
4	NSS	Screw, PEV adjustment
5	NSS	Nut, PEV spring perch
6*	G1-84	Gasket, spring housing
7	AC1-22-2	Cover assembly
8	S7-1	Screen, atmospheric vent
	S2-37	3.7" to 6.5" w.c. (0.92 to 1.62 kPa)
	S2-42	7.0" to 14.0" w.c. (1.74 to 3.5 kPa)
9	S2-106	2.0" to 2.8" w.c. (0.50 to 0.70 kPa)
	S2-109	2.7" to 3.9" w.c. (0.67 to 0.96 kPa)
10*	NSS	Diaphragm assembly secondary, Hydrin

NSS = Not Serviced Separately



C1-22-2 Cover Shown with the optional AC1-74 Adjustable Spring Housing.

ACCESSORIES

REGULATOR	SPRING NUMBER	APPROXIMATE PRESSURE RANGE
EV	S2-22	-1.5" w.c. (.37 kPa)
EV-2	S2-22	-1.5" w.c. (.37 kPa)
PEV-1	S2-37	3.7" to 6.5" w.c. (0.92 to 1.62 kPa)
	S2-42	7.0" to 14.0" w.c. (1.74 to 3.5 kPa)
	S2-106	2.0" to 2.8" w.c. (.50 to 0.70 kPa)
T-PEV-1	S2-109	2.7" to 3.9" w.c. (.67 to 0.96 kPa)
	S2-106	2.0" to 2.8" w.c. (.50 to 0.70 kPa)



AC1-74

OPTIONAL EQUIPMENT

PART #	DESCRIPTION
AB1-28	Mechanical primer, EV series only
AC1-74	Retrofit kit, PEV adjustable cover
SV*	Start assist valve, electric solenoid
VPV*	Vacuum power valve
FCV	Fuel control valve, computer feedback system.

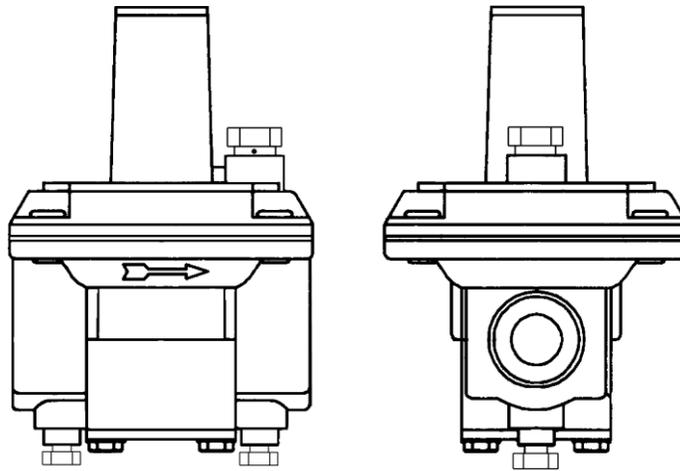
*Use in secondary accessory port

REPAIR KITS

PART #	DESCRIPTION
RK-PE	Repair Kit, Mod E PE Eco
RK-PEV	Repair kit, Model PEV
RK-PEV-2	Repair kit, Model PEV, Silicone

PART #	DESCRIPTION
RK-E	Repair Kit Model E, Hydrin Diaphragm
RK-E-2	Repair Kit Model E, w/Silicone Diaphragm
RK-E-3	Repair Kit Model E, Fluorosilicone Diaphragm
RK-TE	Repair Kit Model E, Turbo w/Silicone Diaphragm
RK-PE	Repair Kit Model PE, Hydrin Diaphragm

Model IMP



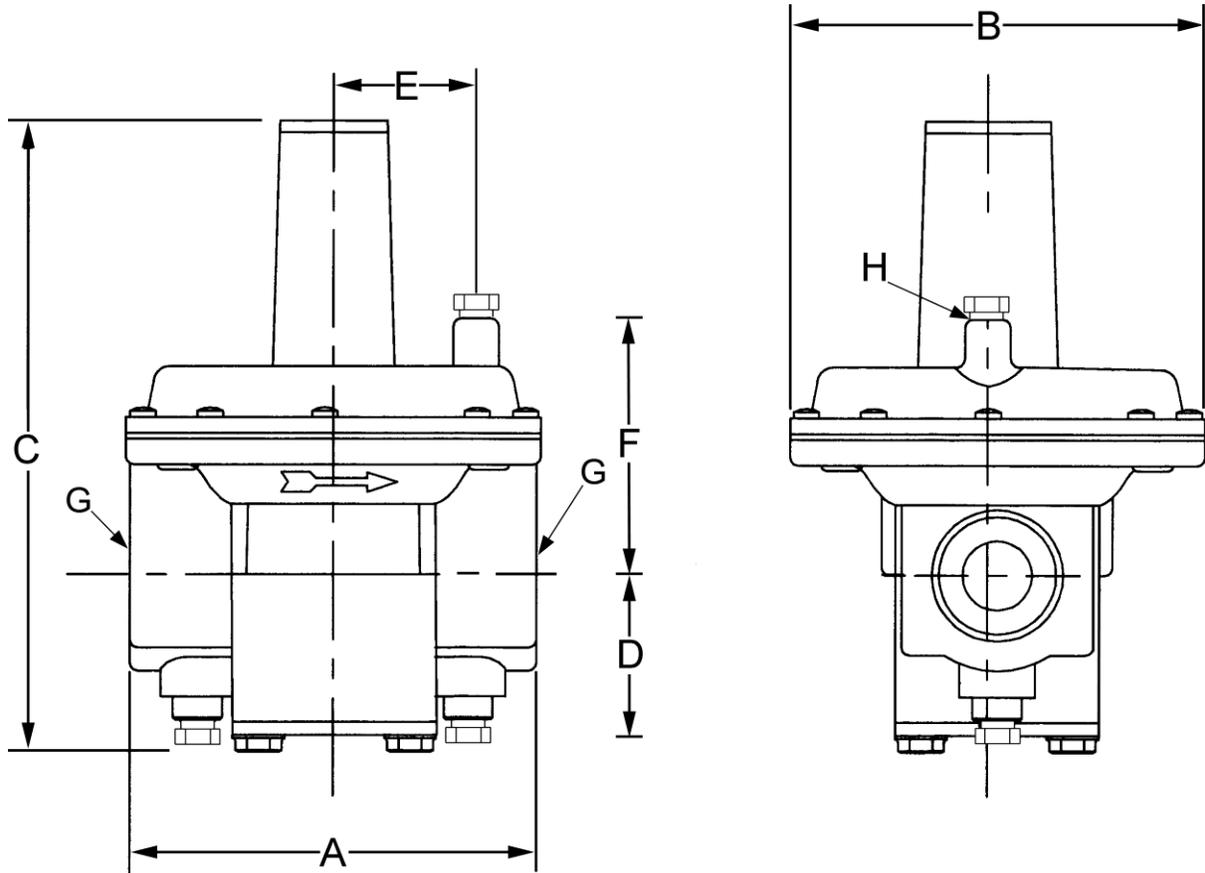
DESCRIPTION

The IMP model regulator is a single stage, adjustable straight through flow design suitable for Natural Gas, LPG Vapor. It can also be used with negative pressure applications with dealer authorized modifications.

SPECIFICATIONS

Fuel Type	LPG Vapor or Natural Gas
Inlet Pressure (Maximum).....	20" w.c. (5.0 kPa)
Outlet Pressure (Nominal)	3" to 6" w.c. (0.75 to 1.5 kPa)
HP/kW Rating	
IMP53*	180 hp (134.2 kW)
IMP61	350 hp (261.0 kW)
IMP81	550 hp (410.0 kW)
IMP91	850 hp (633.8 kW)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Mounting Position	Vertical (as shown above)
Applications	Stationary and industrial
Certification	UL Recognized (MH46841)
	*IMP53-50981-001 & IMP53-50981-002 Only

DIMENSIONS



A B C D E F G H

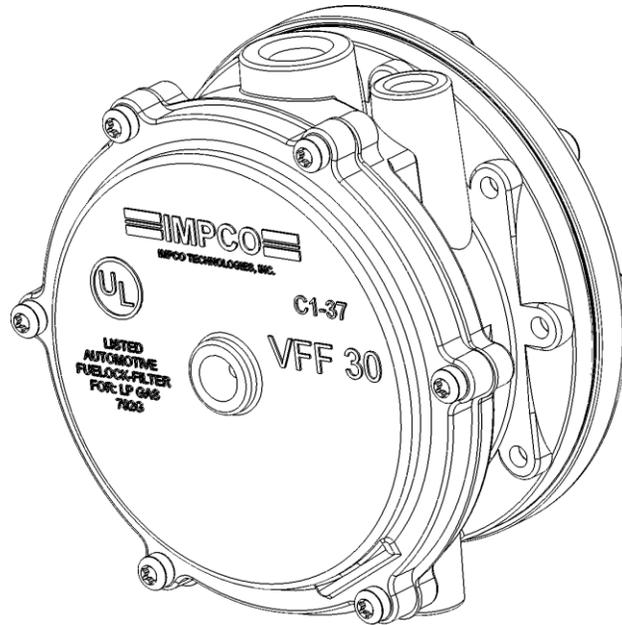
PART#	OVERALL LENGTH	OVERALL WIDTH	OVERALL HEIGHT	BOTTOM TO CENTER OF FUEL OUTLET	CENTER LINE TO CENTER OF VENT BOSS	CENTER OF OUTLET TO TOP OF VENT BOSS	INLET AND OUTLET NPT	VENT BOSS DIAMETER
IMP53-50981-001	101.09mm (3.98")	98.55mm (3.88")	137.92mm (5.43")	35.05mm (1.380")	38.10mm (1.50")	60.45mm (2.380")	1"	1/8"
IMP53-50981-002	101.09mm (3.98")	98.55mm (3.88")	137.92mm (5.43")	35.05mm (1.380")	38.10mm (1.50")	60.45mm (2.380")	3/4"	1/8"
IMP61	111.12mm (4.375")	87.31mm (3.438")	163.51mm (6.4385")	42.06mm (1.656")	46.83mm (1.844")	73.02mm (2.875")	1 1/4"	1/8"
IMP81	152.40mm (6.000")	228.60mm (7.000")	212.72mm (8.375")	51.58mm (2.031")	60.32mm (2.375")	79.37mm (3.125")	1 1/2"	1/8"
IMP91	180.97mm (7.125")	231.77mm (9.125")	266.7mm (10.500")	61.91mm (2.438")	82.55mm (3.250")	106.36mm (4.188")	2"	1/8"

P/Ns IMP53-50981-001 & -002 include two diagnostic 1/8" test ports on the fuel inlet and outlets.

Fuel Shut-Off / Lockoffs

VFF30.....	196
ET98.....	200
ET98 w/ Filter	203
FL-206	206
FL-218-12V.....	208
FL-418-12V.....	210
FL-50046 / FL-52826.....	212
FL-51767	216

VFF30



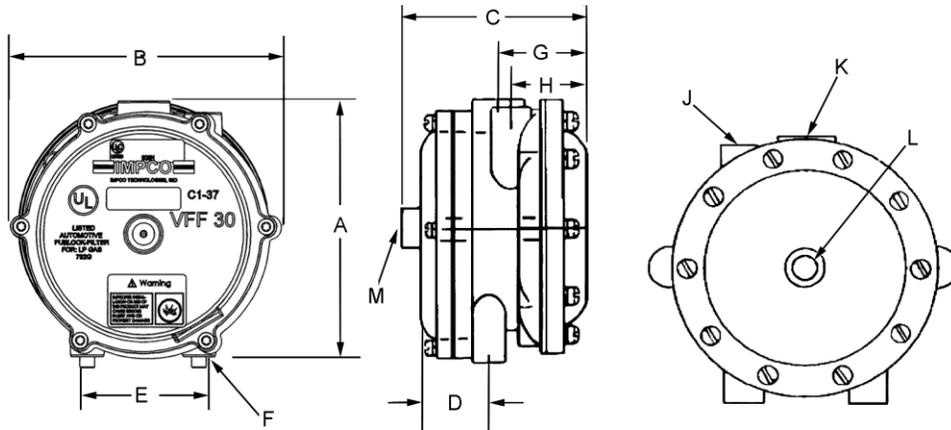
DESCRIPTION

The Model VFF30 is a combination fuel lockoff and filter, engineered for use with LPG Liquid/Vapor or Natural Gas Vapor. It is available with Hydrin, Silicone and Fluorosilicone diaphragms. A pressure of 0.5" w.c. (0.12 kPa) is required to open the lockoff. The VFF30 is suitable for engines up to 325 hp (242.4 kW) at a maximum working pressure of 312 psi (21.5 Bar). The extra-large capacity filter element is fully serviceable.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Low Pressure Natural Gas
Inlet Pressure (Maximum).....	312 psi (21.5 Bar)
Flow Rate	26.7 CFM (12.6 L/s)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Vacuum Activation	
Minimum Opening.....	0.5" w.c. (0.12kPa)
Fully Opened	11.5" w.c. (2.86 kPa)
Min. Operating Opening	2.0" w.c. (0.50 kPa)
Mounting Position.....	Vertical (as shown above)
Certification	UL (AU1502), Inquire for specific ECE approval

DIMENSIONS



MODEL	DIAPHRAGM TYPE	OVERALL HEIGHT	OVERALL WIDTH	OVERALL DEPTH	FRONT OF FUEL LOCK TO			BACK OF FUEL LOCK TO
					CTR. OF MOUNTING HOLE	MOUNTING HOLES CTR. TO CTR.	MOUNTING HOLE THREAD	
VFF30	HYDRIN	109 mm (4.28")	114 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")
VFF30-2	Silicone	109 mm (4.28")	115 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")
VFF30-20-2	Silicone	109 mm (4.28")	114 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")
VFF30-2-4	Silicone	109 mm (4.28")	115 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")
VFF30-2ULC	Silicone	109 mm (4.28")	114 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")
VFF30-3	Fluoro-silicone	109 mm (4.28")	115 mm (4.50")	66.7 mm (2.625")	24 mm (.94")	48mm (1.88")	1/4"-20	37mm (1.44")

MODEL	BACK OF FUEL LOCK TO CTR. OF VACUUM		AIR VALVE VACUUM PORT (NPT)	FUEL OUTLET (NPT)	FUEL INLET (NPT)	PRIMER
	PORT	OF VACUUM				
VFF30	32mm (1.25")		1/8"	1/4"	1/4"	
VFF30-2	32mm (1.25")		1/8"	1/4"	1/4"	
VFF30-20-2	32mm (1.25")		1/8"	1/4"	1/4"	ELECTRIC PRIMER
VFF30-2-4	32mm (1.25")		1/8" w/Check Valve	1/4"	1/4"	MANUAL PRIMER
VFF30-2ULC	32mm (1.25")		1/8"	1/4"	1/4"	
VFF30-3	32mm (1.25")		1/8"	1/4"	1/4"	

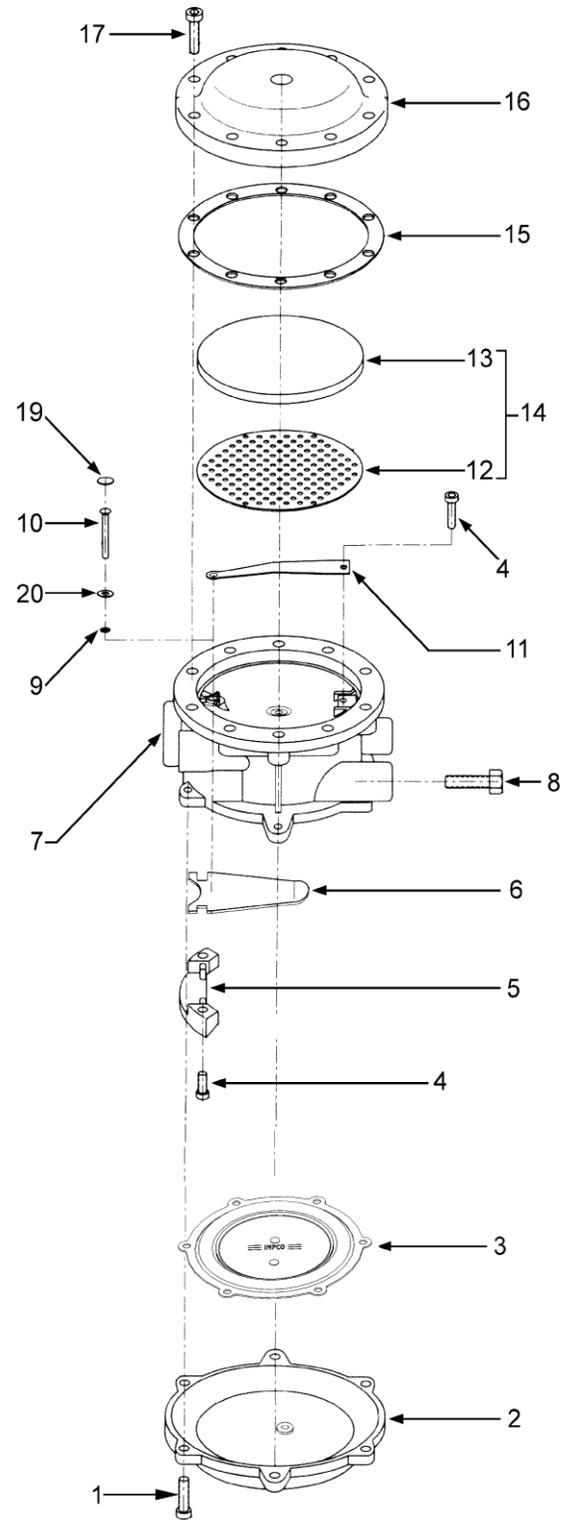
COMPONENTS

ITEM#	PART#	DESCRIPTION
1*	S1-15265-001	Screw, 8-32 Taptite (6)
2	C1-37	Diaphragm cover, (std., VFF30 only) Diaphragm Assy (Hydrin)
	NSS	(RK-VFF30)
3*	NSS	Diaphragm Assy, Silicone (RK-VFF30-2)
	NSS	Diaphragm Assy, Flourosilicone (RK-VFF30-3)
4*	NSS	Screw, 8-32 Taptite (3)
5	F3-2	Fulcrum
6	NSS	Valve operating lever
7	NSS	Body ass'y
8	S1-5	Screw, 1/4-20 x 5/8" SEMS (2)
9*	S3-116	Seal, Lip Pin
10*	NSS	Valve, operating pin
11	S2-40	Valve, spring
12*	NSS	Screen, back-up filter
13*	NSS	Filter
14*	NSS	Filter Assy (includes Filter & Screen)
15*	NSS	Filter cover gasket
16	C1-38	Filter cover
17	NSS	Screw, 12-24 Taptite (10)
18	AF4-66	Fitting, ball check, assy (not shown, VFF30-2-4 only)
19*	NSS	Seat, VFF30
20*	NSS	Washer, Seal Retaining

NSS = Not Serviced Separately

* Repair Kit Components.

Note: The extra screws (both slotted and torx) are included in the repair kits to replace any that may be damaged.



VFF30

Fuel Shut-Off / Lockoffs



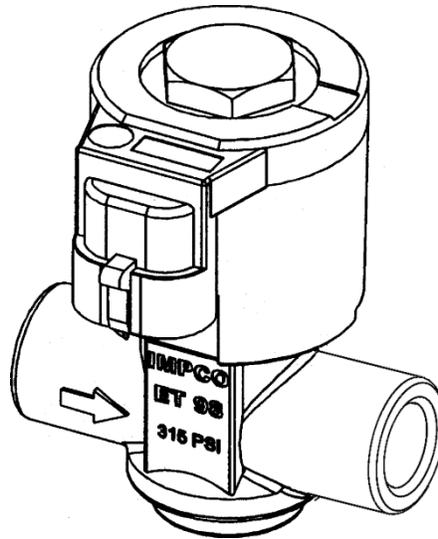
ACCESSORIES

PRIMER

PART#	DESCRIPTION
AC1-57	Cover, VFF30 w/Electric Primer

REPAIR KITS

PART#	DESCRIPTION
RK-VFF30	Repair Kit, Hydrin
RK-VFF30-2	Repair Kit, Silicone
RK-VFF30-3	Repair Kit, Fluorosilicone

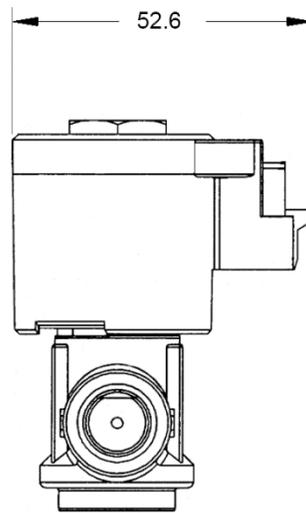
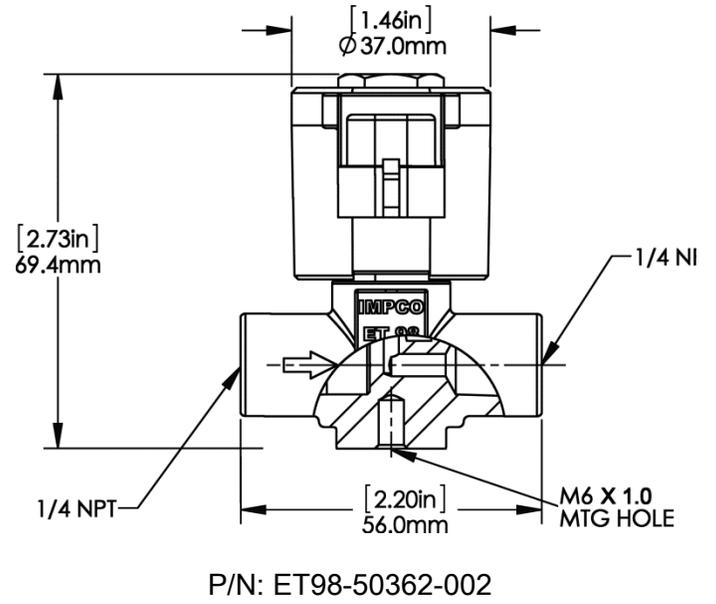
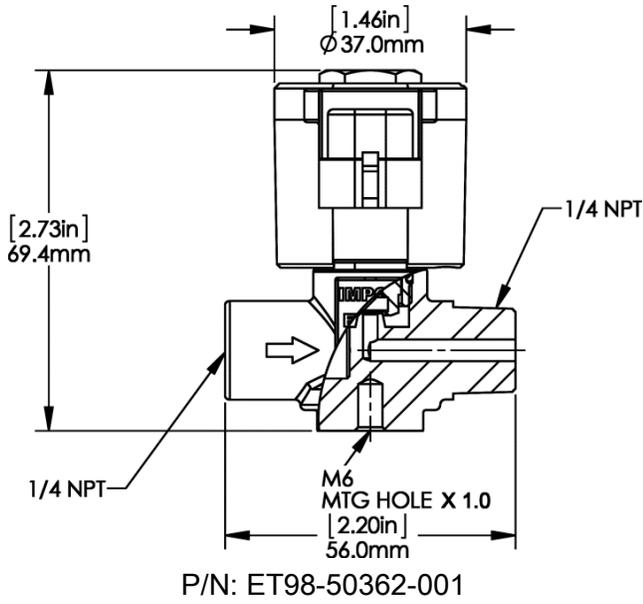
ET98**DESCRIPTION**

The Model ET98 is an electrically operated safety shutoff valve suitable for high pressure up to 315 psi (21.7 Bar) of LPG Liquid/Vapor or Natural Gas Vapor. It is a normally closed Straight-Through Lockoff, opened with 12V or 24V DC and is available with either a male or female outlet.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Low Pressure Natural Gas
Inlet Pressure (Maximum).....	315 psi (21.7 Bar)
Flow Rating	1,268 Gal/Hr (24,000 NL/Hr) @ 58 psi (400 kPa) Air
Electrical Requirement	12 VDC (15.5 W) or 24 VDC (16 W)
Operating Temperature Range	
12V	-40°F to +250°F (-40°C to +121°C)
24V	-40°F to +130°F (-40°C to +55°C)
Fuel Filtration Required	40 Micron
Mounting Position.....	Vertical Recommended
Certification	UL Recognized, Inquire for specific ECE approval
Weight.....	12 oz. (470 grams)

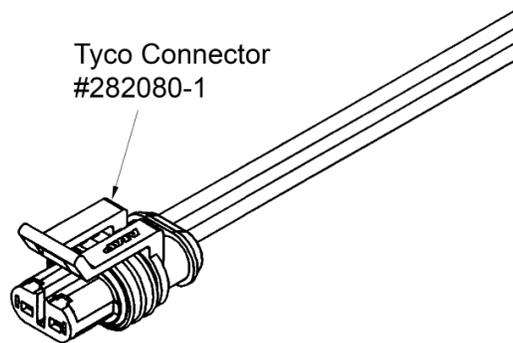
DIMENSIONS



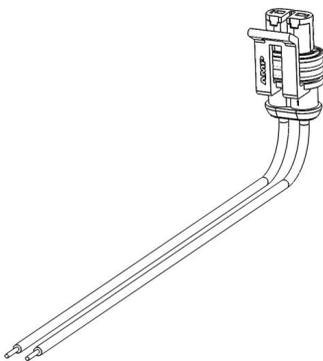
CONNECTORS

To service the lockoff or its electrical connection, both wire pigtail connector and the lockoff (without the wire pigtail connector) are available separately. Refer to the table below for part information:

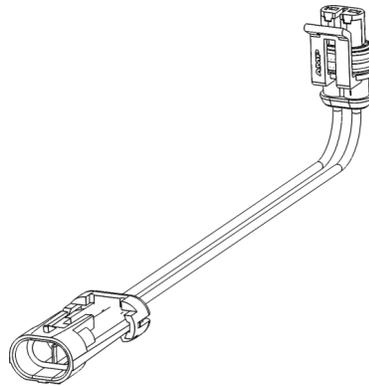
ET98 Lockoff (w/o Pigtail Connector)	ET98 Lockoff (w/Pigtail Connector)	Description	Wire Pigtail Connector	DC Voltage
ET98-52295-001	ET98-50362-001	Female to Male	AW-52815-001	12
ET98-52295-002	ET98-50362-002	Female to Female		12
ET98-52295-002	ET98-30515-003	Female to Female	AW-52815-002	12
ET98-52295-001	ET98-30515-001	Female to Male	AW-52815-003	12
ET98-52295-002	ET98-30515-002	Female to Female		12
ET98-52295-004	N/A	Female to Female	Not Included	24
ET98-52295-005	N/A	Female to Male	Not Included	24
ET98-52295-004	ET98-30515-007	Female to Female	AW-52815-001	24



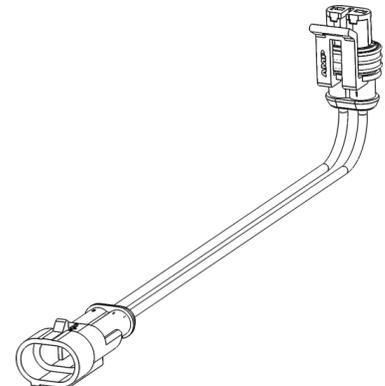
All wire pigtails connect to the solenoid coil of the ET98 using connector Tyco part number 282080-1:



AW-52815-001 has insulated wire leads approximately 6.3" (159mm) long

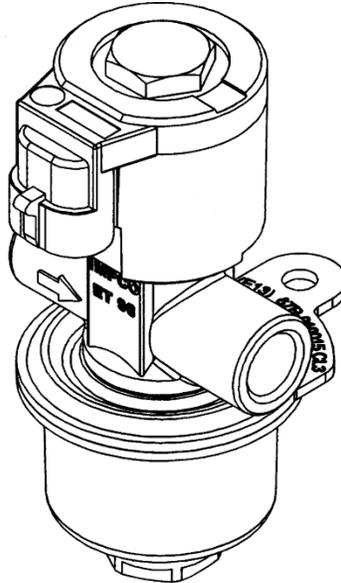


AW-52815-002 has a Tyco connector 282104-1



AW-52815-003 has a Metri-pack connector (Packard type PA6)

ET98 w/ Filter



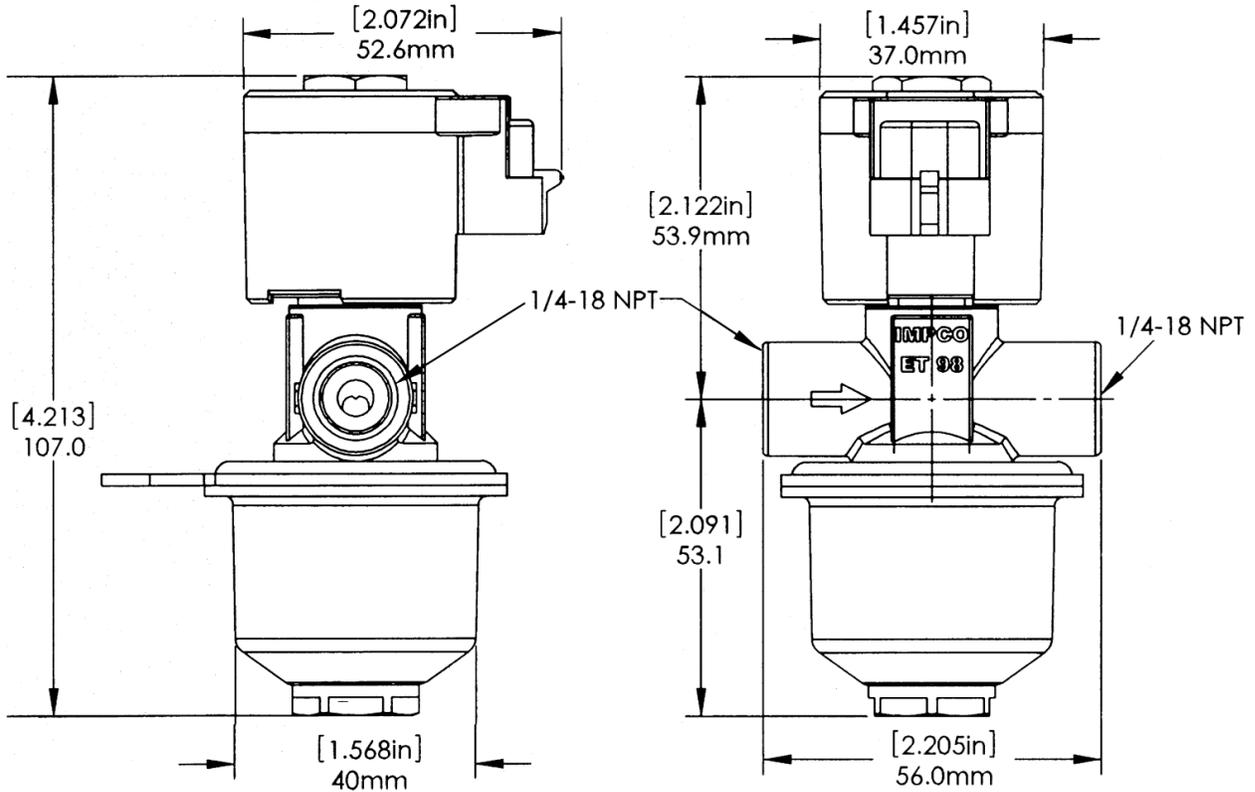
DESCRIPTION

The Model ET98 with filter is an electrically operated safety shutoff valve suitable for high pressure up to 315 psi (21.7 Bar) of LPG Liquid/Vapor or Natural Gas Vapor. It is a normally closed Straight-Through Lockoff, opened with 12V or 24V DC featuring an integrated filter. The filter model has two female NPT fittings and a mounting kit.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Low Pressure Natural Gas
Inlet Pressure (maximum).....	315 psi (21.72 Bar)
Flow Rating	1,268 gal/hr (24,000 NL/hr) @ 58 psi (400 kPa) Air
Electrical Requirement	12 VDC (15.5 W) or 24 VDC (16 W)
Operating Temperature Range	
12 V	-40°F to +250°F (-40°C to +121°C)
24 V	-40°F to +130°F (-40°C to +55°C)
Fuel Filtration Provided.....	40 Micron
Mounting Position.....	Vertical recommended
Certification	UL Recognized, Inquire for specific ECE application

DIMENSIONS



P/N: ET98-51315-001

REPAIR KIT

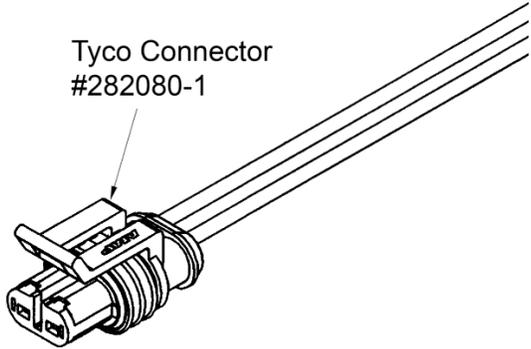
PART#	DESCRIPTION
RK-ET98	Repair Kit, ET-98 w/Filter

Note: The RK-ET98 repair kit cannot be used to repair an ET98 not originally equipped with an integrated fuel filter.

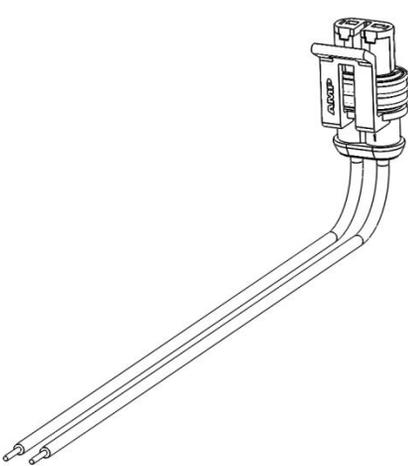
CONNECTORS

To service the lockoff or its electrical connection, both wire pigtail connector and the lockoff (without the wire pigtail connector) are available separately. Refer to the table below for part information:

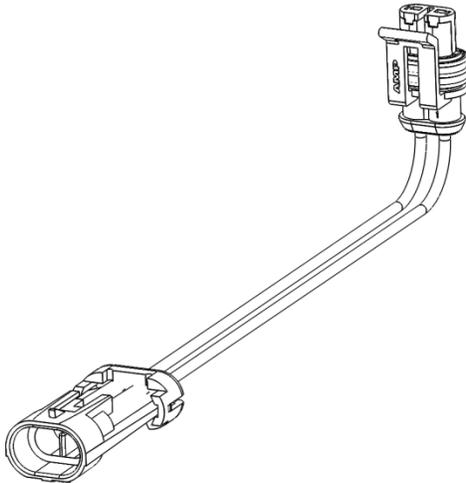
ET98 Lockoff (w/o Pigtail Connector)	ET98 Lockoff (w/Pigtail Connector)	Description	Wire Pigtail Connector	DC Voltage
ET98-52296-001	ET98-50362-003	Female to Female	AW-52815-001	12
ET98-52296-001	ET98-51315-001	Female to Female	AW-52815-003	12
ET98-52296-001	ET98-30515-006	Female to Female	AW-52815-002	12
ET98-52296-002	ET98-51315-002	Female to Female	AW-52815-003	24



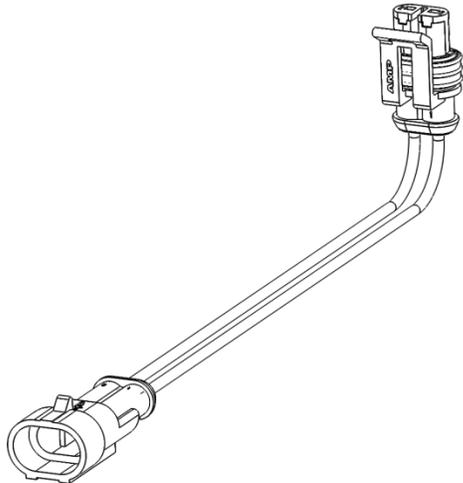
All wire pigtails connect to the solenoid coil of the ET98 using connector Tyco part number 282080-1:



AW-52815-001 has insulated wire leads approximately 6.3" (159mm) long

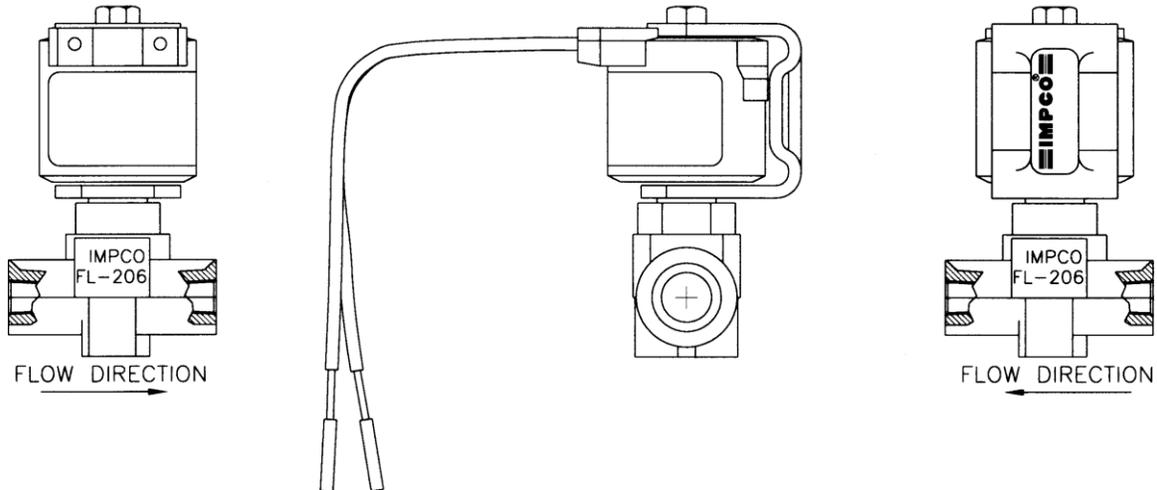


AW-52815-002 has a Tyco connector 282104-1



AW-52815-003 has a Metri-pack connector (Packard type PA6)

FL-206



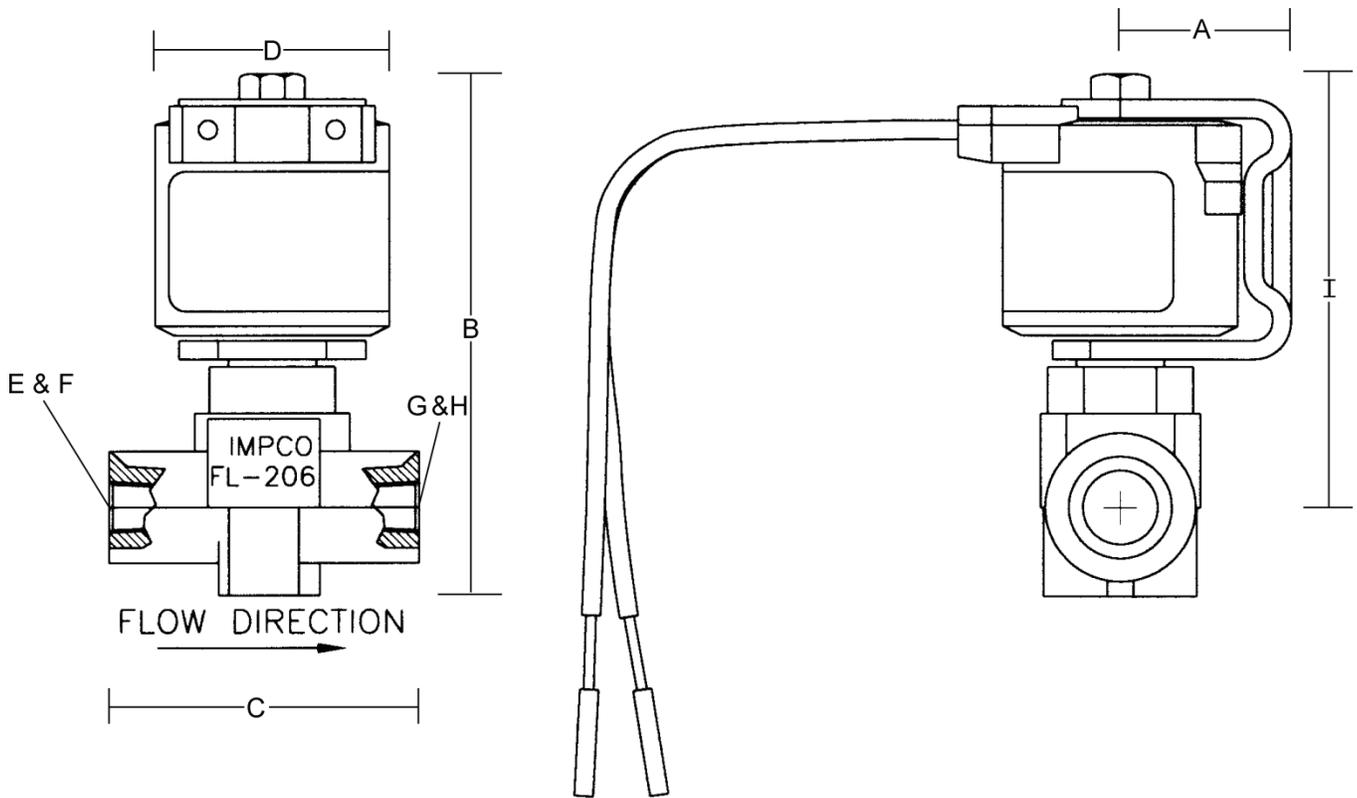
DESCRIPTION

The FL-206 model is a normally closed 12 VDC electric solenoid shut off valve, suitable for use with gasoline applications.

SPECIFICATIONS

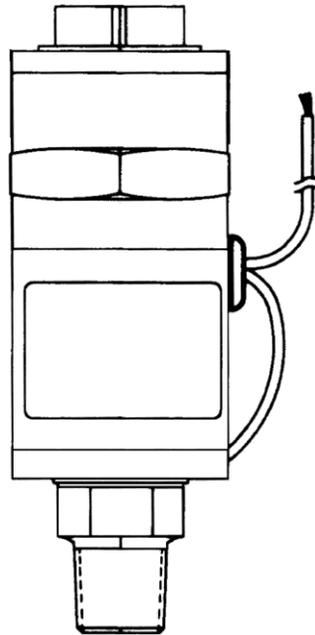
Fuel Type	Gasoline
Inlet Pressure (Maximum).....	30 psi (2.1 Bar)
Flow Rating	24.6 gal/hr @ 2.84 psi (100 NL/hr @ 19.6 kPa)
Electrical Requirement	12 VDC (8 W)
Operating Temperature Range	-40°F to 158°F (-40°C to 70°C)
Fuel Filtration Required	40 Micron
Mounting Position.....	Any
Certification	UL (MH19296)

DIMENSIONS



	A	B	C	D	E	F	G	H	I	K	
	CENTER OF SOLENOID TO WIDEST POINT	OVERALL HEIGHT	VALVE BODY LENGTH	SOLENOID DIA.	INLET THREAD TYPE	INLET THREAD SIZE (NPT)	OUTLET THREAD TYPE	OUTLET THREAD SIZE (NPT)	CTR. OF VALVE TO TOP OF SOLENOID	WEIGHT	
MODEL	FL-206	23 mm (0.91")	71 mm (2.80")	42 mm (2.01")	32 mm (1.26")	FEMALE	1/8"	FEMALE	1/8"	59 mm (2.32")	266 G (9.4 OZ)

FL-218-12V

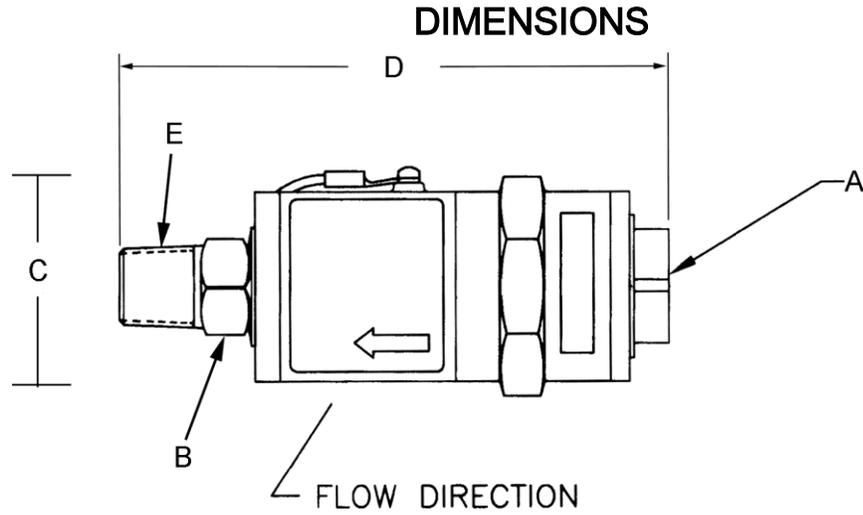


DESCRIPTION

The FL-218 model heavy-duty electric shutoff solenoid valve, equipped with an integral filter for engines up to 200 cubic inches (3.28L). The solenoid is 12 VDC operated and is normally closed. The internal replaceable filter allows for in-line filtration suitable for use with LPG or low pressure side of Natural Gas applications.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Low Pressure Natural Gas
Inlet Pressure (Maximum).....	250 psi (17.2 Bar)
Operating Temperature Range	-40°F to +250°F (-40°C to 121°C)
Flow Rating	4.0 gal/hr (15.1 NL/hr) @ 2.84 psi (19.6 kPa)
Electrical Requirement	12 VDC (12 W)
Fuel Filtration Required	40 Micron
Mounting Position	Any
Certification	UL (AU1502)



	A	B	C	D	E	G
					OUTLET	
MODEL	INLET THREAD SIZE (NPT)	HEX NUT SIZE	OVERALL WIDTH	OVERALL LENGTH	THREAD SIZE (NPT)	WEIGHT
FL-218-12V	1/4" (FEMALE)	9/16"	32 mm (1.25")	91.2mm (3.59")	1/4" (MALE)	510 G (18 oz.)

KIT-FILTER ELEMENT & GASKET

ITEM #	PART #	DESCRIPTION
1	FL-4748	Kit, Element & Gasket

FL-418-12V



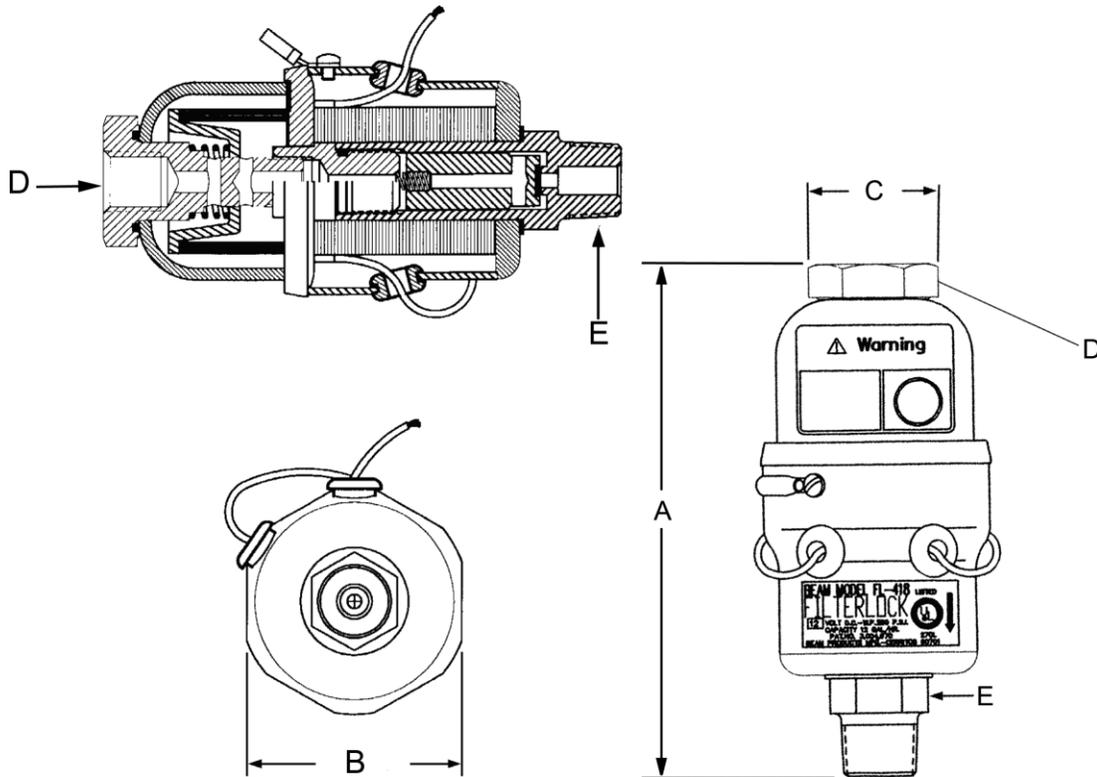
DESCRIPTION

The FL-418-12V model heavy duty electric shutoff solenoid valve with an integral filter. The solenoid is 12 volt operated, normally closed and is suitable for LPG and low pressure side Natural Gas applications. The internal replaceable filter allows for in-line filtration and can be used in conjunction with any IMPCO fuel management system.

SPECIFICATIONS

Fuel Type	LPG Liquid/Vapor or Low Pressure Natural Gas
Inlet Pressure (Maximum).....	250 psi (17.24 Bar)
Operating Temperature Range	-40°F to +250°F (-40°C to +121°C)
Electrical Requirement	12 VDC
Filter Rating	40 Micron (1.6 mil)
Mounting Position	Vertical or horizontal
Certification	UL (AU1502)

DIMENSIONS

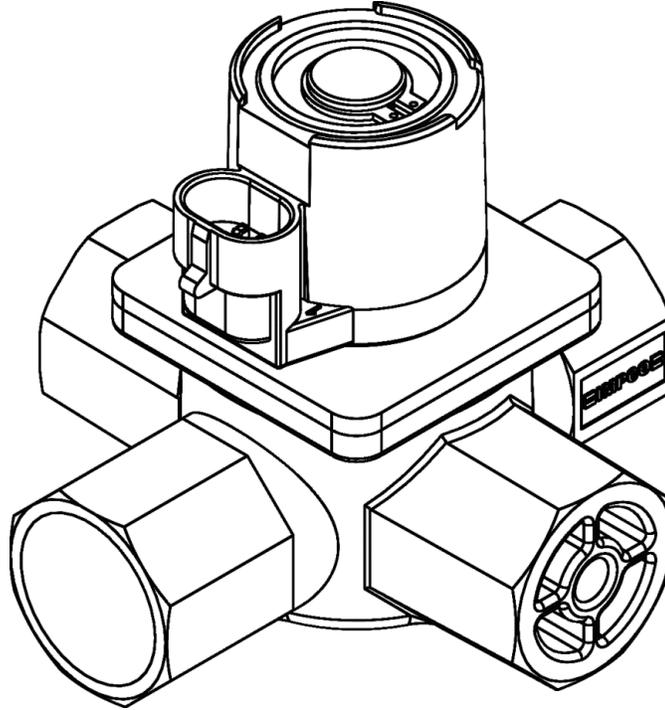


	A	B	C	D	E	G
	OVERALL	OVERALL	NUT	INLET	OUTLET	
MODEL	HEIGHT	WIDTH	WIDTH	THREAD	THREAD	WEIGHT
FL-418-12V	116 mm (4.56")	48 mm (1.88")	25 mm (1.0")	1/4"(FEMALE)	1/4" NPT (MALE)	340 g (12 oz)

FILTERS

PART #	DESCRIPTION
FL-4748	Kit Elem & Gasket

FL-50046 / FL-52826



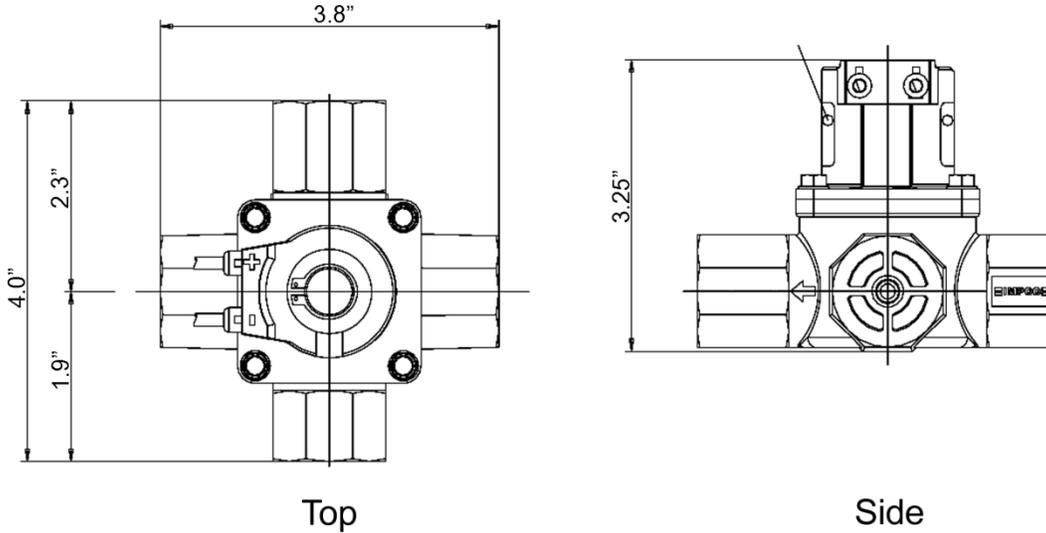
DESCRIPTION

The FL-50046 / FL-52826 model is a low pressure normally closed 12 VDC safety shut-off valve suitable for use with LPG Vapor or Natural Gas Vapor. The valve is available in six different inlet/outlet configurations and provides two points for hard mounting. The coil assembly is hermetically sealed for excellent moisture resistance.

SPECIFICATIONS

Fuel Type	LPG Vapor or Low Pressure Natural Gas
Inlet Pressure (maximum).....	13.85" w.c. (3.45 kPa)
Flow Rate	350 CFH (9,911 L/H) @ 3.45 kPa (Air)
Electrical Requirement	
Nominal.....	15.5 Watts @ 12 VDC (1.3 Amps)
Continuous Use (>20 mins).....	12 Watts @ 12 VDC (1.0 Amp)
Operating Temperature Range	-40°F to +221°F (-40°C to 105°C)
Mounting Position.....	Vertical (Coil Up) ±10°
Certification	UL Recognized, Inquire for specific ECE approval

DIMENSIONS



P/N: FL-50046 XXX (Original version)

PART NUMBERS

To better service the new lockoff or its electrical connection, both the wire pigtail connector and the lockoff (without the wire pigtail connector) are available separately. Refer to the table below for part information:

Original FL-50046 Lockoff*	New Lockoff (solenoid w/female connector)**	Description	Wire Pigtail Connector
FL-50046-001	FL-52826-001	Lockoff, 180 Deg Flow, Female In, Female Out	AW-52815-001
FL-50046-002	FL-52826-002	Lockoff, 180 Deg Flow, Female In, Male Out	
FL-50046-003	FL-52826-003	Lockoff, 90 Deg Flow, Female In, Female Out, Left Exit	
FL-50046-004	FL-52826-004	Lockoff, 90 Deg Flow Female In, Female Out, Right Exit	
FL-50046-005	FL-52826-005	Lockoff, 90 Deg Flow, Female In, Female Out, Right Exit	
FL-50046-006	FL-52826-006	Lockoff, 90 Deg Flow, Female In, Male Out, Right Exit	
FL-50046-007	FL-52826-007	Lockoff, 180 Deg Flow, Female In, Male Out, No Mtg Hole	
FL-50046-008	FL-52826-008	Lockoff, 180 Deg Flow, Female In, Female Out, No Mtg Hole	

*Includes Wire Pigtail

**Wire Pigtail not included

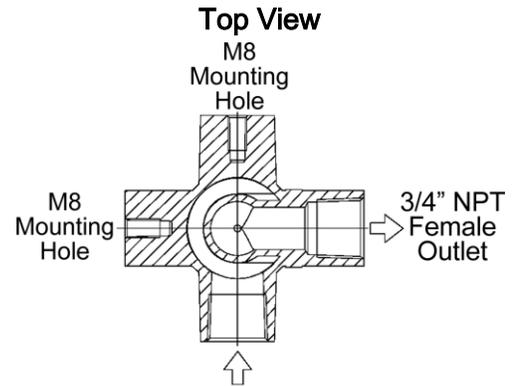
Fuel Shut-Off / Lockoffs

Clock Position	Fitting Type	Description	
3	M8 Mounting Hole	Mount	<p>Top View</p> <p>3/4" NPT Female Outlet</p> <p>M8 Mounting Hole</p> <p>M8 Mounting Hole</p>
6	3/4" NPT Female	Inlet	
9	M8 Mounting Hole	Mount	
12	3/4" NPT Female	Outlet	
Description: Straight (180°) Passage (female outlet) P/N: FL-50046 / FL-52826-001 or -008 (w/out mtg hole)			
Clock Position	Fitting Type	Description	
3	M8 Mounting Hole	Mount	<p>Top View</p> <p>3/4" NPT Male Outlet</p> <p>M8 Mounting Hole</p> <p>M8 Mounting Hole</p>
6	3/4" NPT Female	Inlet	
9	M8 Mounting Hole	Mount	
12	3/4" NPT Male	Outlet	
Description: Straight (180°) Passage (male outlet) P/N: FL-50046 / FL-52826-002 or -007 (w/out mtg hole)			
Clock Position	Fitting Type	Description	
3	M8 Mounting Hole	Mount	<p>Top View</p> <p>M8 Mounting Hole</p> <p>3/4" NPT Female Outlet</p> <p>M8 Mounting Hole</p>
6	3/4" NPT Female	Inlet	
9	3/4" NPT Female	Outlet	
12	M8 Mounting Hole	Mount	
Description: 90° Left Exit (female outlet) P/N: FL-50046/ FL-52826-003			
Clock Position	Fitting Type	Description	
3	M8 Mounting Hole	Mount	<p>Top View</p> <p>M8 Mounting Hole</p> <p>3/4" NPT Male Outlet</p> <p>M8 Mounting Hole</p>
6	3/4" NPT Female	Inlet	
9	3/4" NPT Male	Outlet	
12	M8 Mounting Hole	Mount	
Description: 90° Left Exit (male outlet) P/N: FL-50046 / FL-52826-004			

Clock Position	Fitting Type	Description
3	3/4" NPT Female	Outlet
6	3/4" NPT Female	Inlet
9	M8 Mounting Hole	Mount
12	M8 Mounting Hole	Mount

Description: 90° Right Exit (Female outlet)

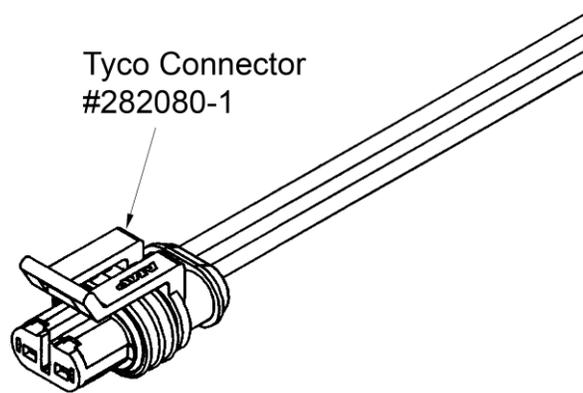
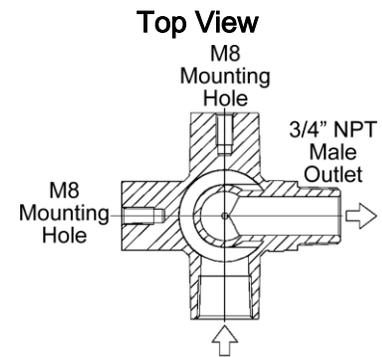
P/N: FL-50046 / FL-52826-005



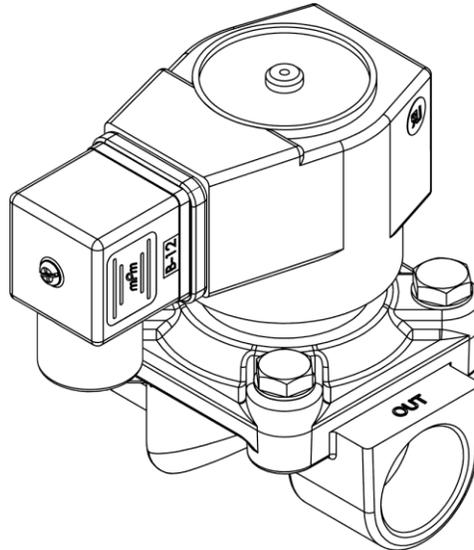
Clock Position	Fitting Type	Description
3	3/4" NPT Male	Outlet
6	3/4" NPT Female	Inlet
9	M8 Mounting Hole	Mount
12	M8 Mounting Hole	Mount

Description: 90° Right Exit (Male outlet)

P/N: FL-50046 / FL-52826-006



The wire pigtail connector (AW-52815-001) has insulated wire leads approximately 6.3" (159mm) long. The connector is Tyco part number 282080-1.

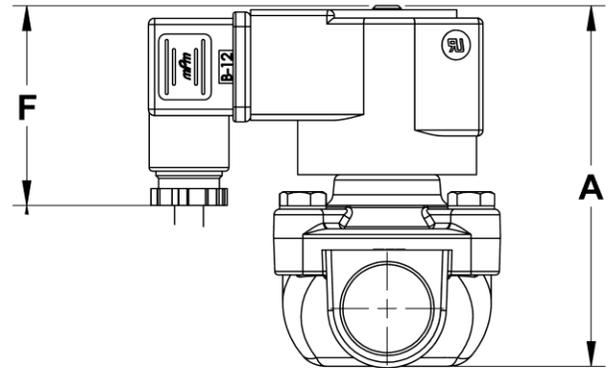
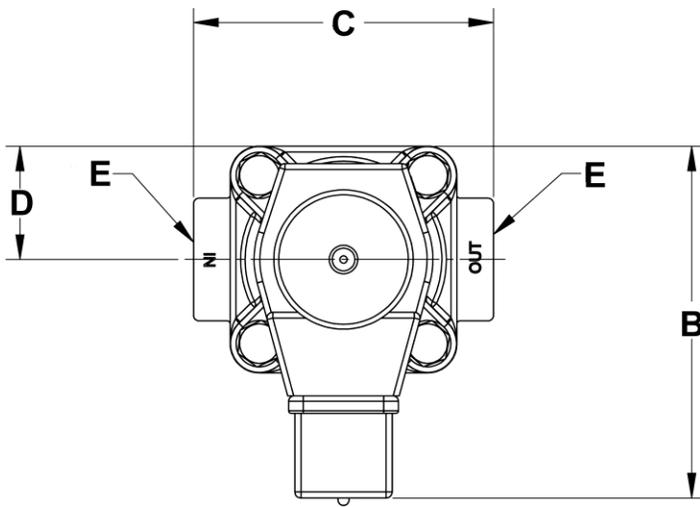
FL-51767**DESCRIPTION**

The Model FL-51767 is a large capacity, low pressure, 12 VDC normally closed, electric shut off.

SPECIFICATIONS

Fuel Type	LPG Vapor or Low Pressure Natural Gas
Inlet Pressure (maximum).....	1.5 psi (10.3 kPa)
Capacity	N/A
Electrical Requirement	12 VDC (1.2 A)
Operating Temperature Range	32°F to +122°F (-0°C to +50°C)
Fuel Filtration Required	40 Micron
Mounting Position.....	Vertical (Coil Up) Recommended
Certification	UL 429, MH9011

DIMENSIONS

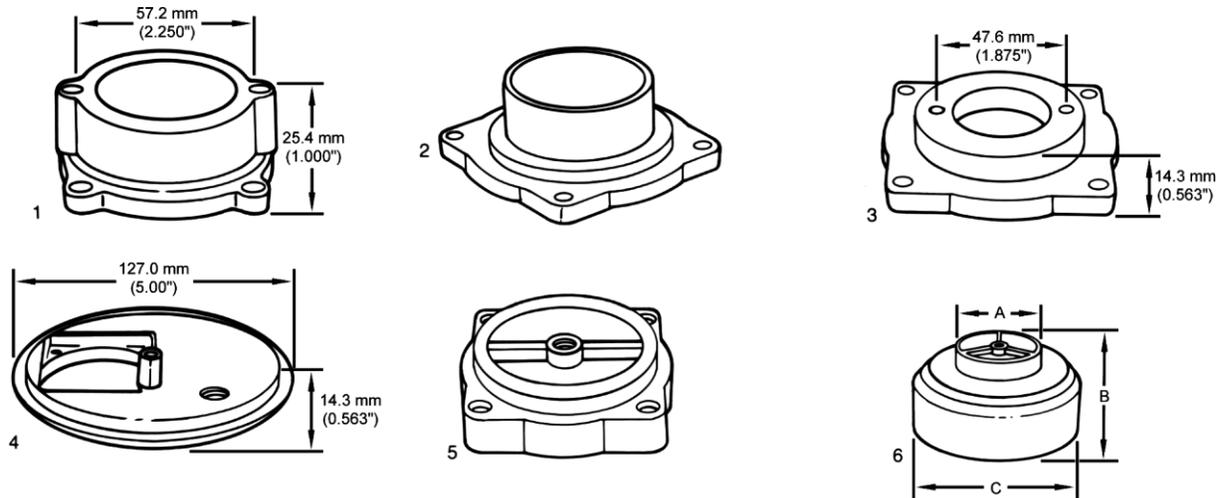


	A	B	C	D	E	F
	HEIGHT	DEPTH	OVERALL WIDTH	SIDE TO CTR OF OUTLET	INLET/OUTLET (NPT)	CONNECTOR HEIGHT
MODEL						
FL-51767-001	99.0mm (3.89")	96.0mm (3.78")	82.0mm (3.23")	31.0mm (1.22")	3/4"	55mm (2.17")

Adapters

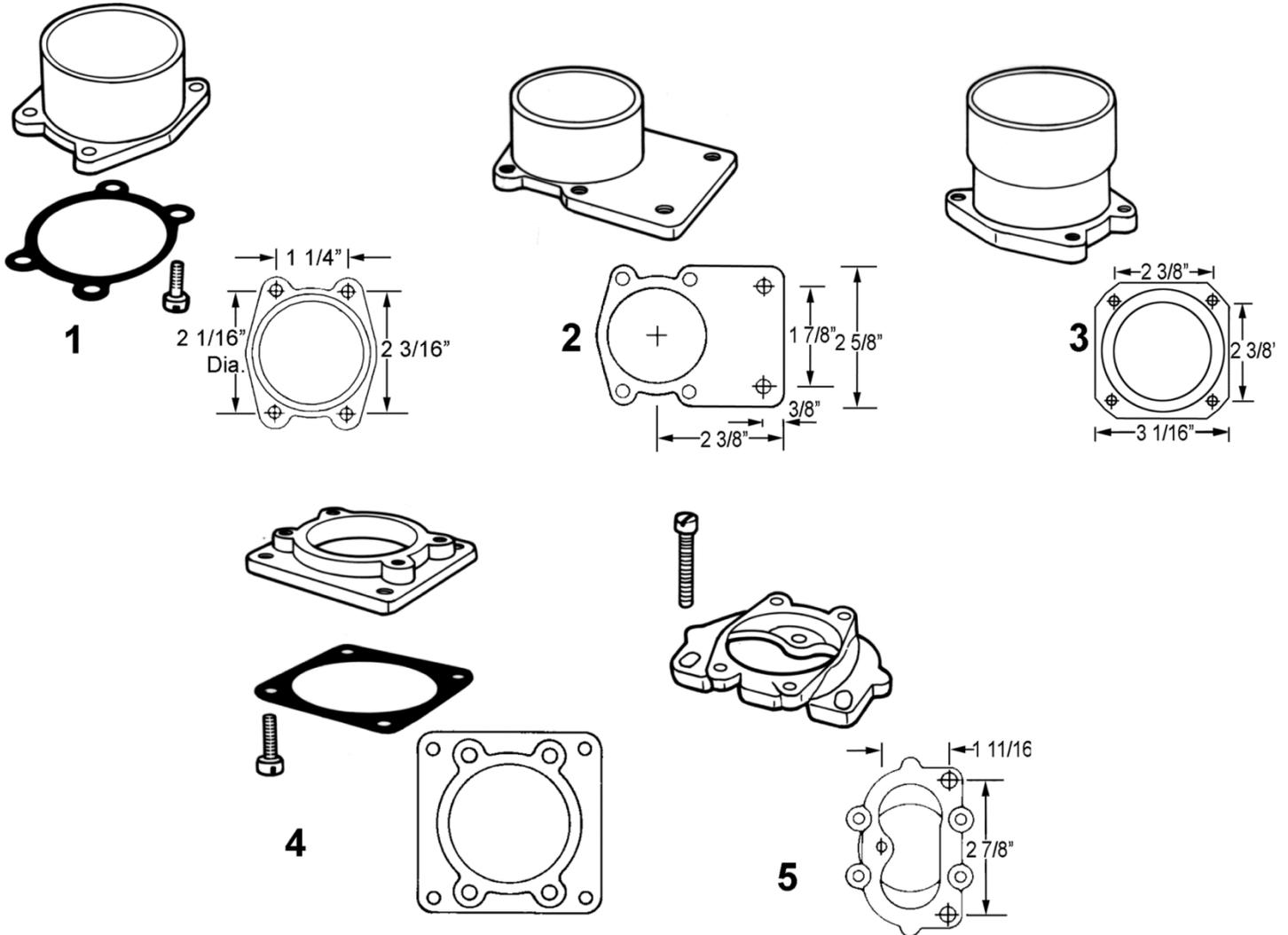
A2 Model (Air Horns)	219
A3 Model (Mixers)	220
S3 Model (Spacers).....	222
A1-61 (5-1/8" Air Horn)	223
UNIDAPT Adapter System	224
Carter Thermo Quad	226

A2 Model (Air Horns)



ITEM#	PART#	DESCRIPTION	A	B	C
1	A2-35	For Model CA55 mixer, to 1974 Toyota lift truck Air Horn			
	A2-36	For 1.5000" I.D. hose			
	A2-37	For 1.625" I.D. hose			
	A2-38	For 1.875" I.D. hose			
2	A2-39	For 2.063" I.D. hose			
	A2-41	For 2.313" I.D. hose			
	A2-61	For 63mm I.D. hose, tapped to 8mm			
4	A2-44	Adapter, Air Cleaner for CA55-500			
5	A2-60	For Datsun J-15 engine, 57.2m (2.250") dia., w/ 1/4" 20 ctr st			
	A2-7	For model 125 mixer	66.7mm (2.625")	44.5mm (1.750")	130.0mm (5.125")
	A2-8	For model 125 mixer	58.7mm (2.313")	44.5mm (1.750")	130.0mm (5.125")
	A2-9	For model 125 mixer	56.4mm (2.219")	44.5mm (1.750")	130.0mm (5.125")
	A2-33	For model 125 mixer	80.0 mm (3.150")	44.5mm (1.750")	130.0mm (5.125")
	A2-34	For model 125 mixer	54.0mm (2.126")	44.5mm (1.750")	130.0mm (5.125")
	A2-35	For model 125 mixer	70.0mm (2.765")	44.5mm (1.750")	130.0mm (5.125")

A3 Model (Mixers)

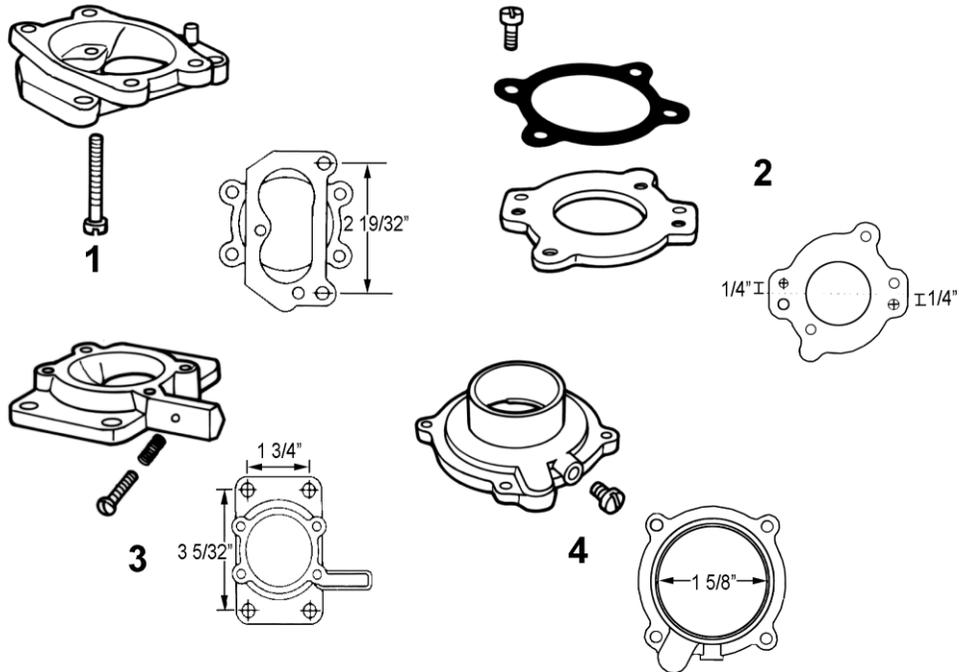


ITEM#	PART#	DESCRIPTION
1	AA3-29-1	Adapter Assy kit, 100M & 125M to 2 1/16" hose, w/ A3-29-1, G1-11, S1-19 (4)
	AA3-29-2	Adapter, Assy kit, 100M & 125M to 2 1/16" hose, tapped for 12" x 24", w/A3-29-2, S1-19 (4), G1-11
2	A3-29-3	Adapter, 100M & 125M to 2 1/16" hose, w/mounting base
3	A3-28	Adapter, 200 & 225M to 3 1/6" hose
	A3-31	Adapter, 100M & 125M to 2 1/4" hose
4	AA3-32-1	100 & 125 Mixer to 200 & 225 Throttle Body, w/A3-32-1, G1-11, S1-19 (4)
	AA3-32-2	100 & 125 Throttle Body to 200 & 225 Mixer, w/A3-32-2, G1-11, S1-19 (4)
5	AA3-49	Adapt. Assy kit, 100 and 125M to Datsun C5 & Nikki p5 throttle body, w/ A3-49, S1-62

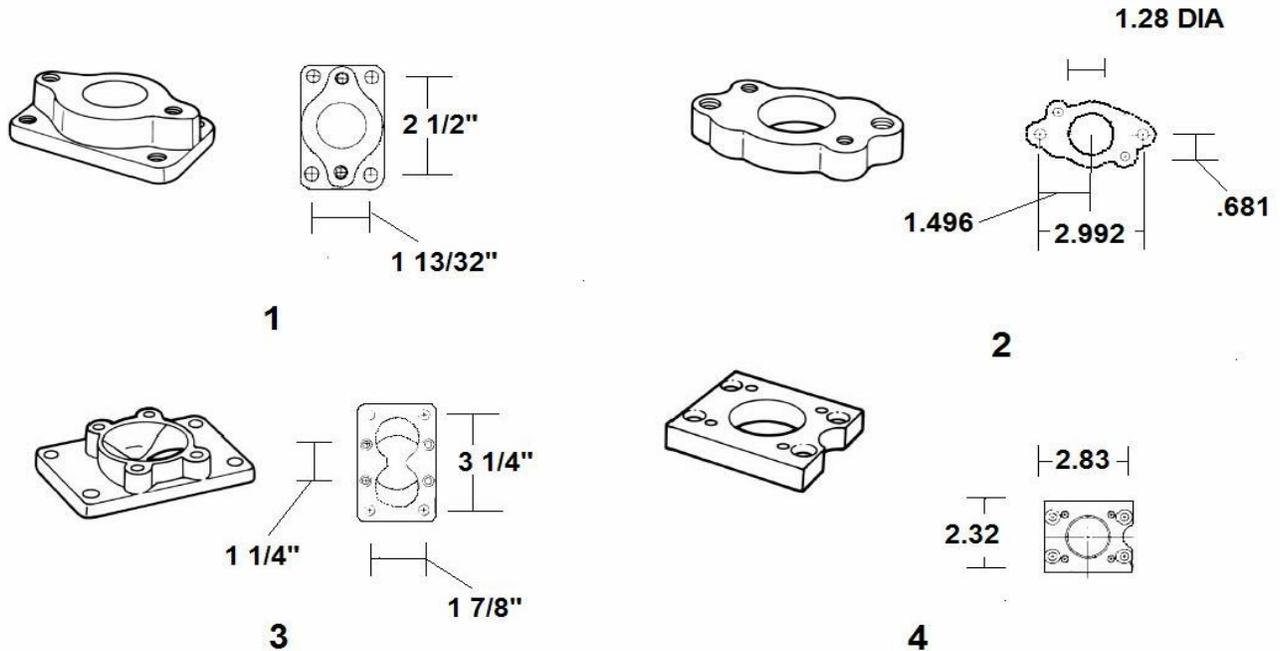
A3 Model (Mixers)



Adapters



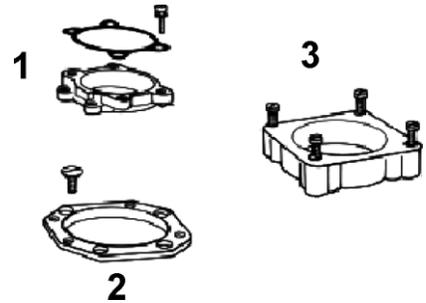
ITEM#	PART#	DESCRIPTION
1	AA3-50	Adapt. Ass'y Kit, 100 & 125M to Datsun C3 & P3 throttle body, w/A3-50, S2-23
2	AA3-67	Adapter, Assy kit, 125M Mitsubishi lift truck throttle body, w/A3-67, S1-53, S2-3, G1-126
	A3-82	Adapter 55M to 1 5/8" hose
3	A3-83	Adapter 55M to 1 7/8" hose
	A3-84	Adapter 55M to 2 1/16" hose



ITEM #	PART #	DESCRIPTION
1	A3-94	Adapter, 1" SAE flange to Datsun 4-bolt manifold flange
2	A3-113	Adapter, CA55-500 Series to Toyota 4Y intake manifold
3	A3-105	Adapter, Hyster governor, 2B to CA125 & CA100M
4	A3-124-2	Adapter, 100-125 to Solex lower throttle body

S3 Model (Spacers)

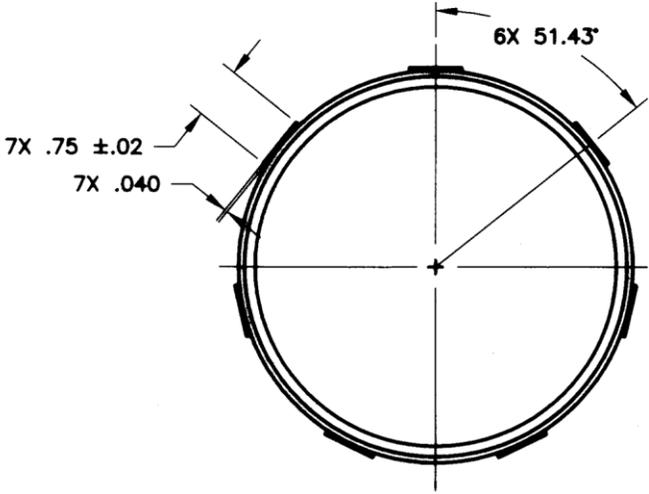
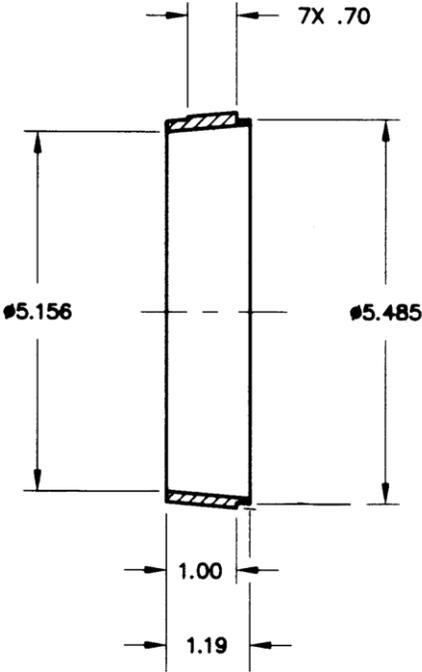
ITEM #	PART #	DESCRIPTION
1	AS3-10	Spacer ass'y, to turn CA125 Air Horn 90°, for S3-10, G1-11, & S1-19 (4)
2	AS3-43	Spacer ass'y to turn CA125 Air Horn 90°, for S3-43 G1-11, & S1-68 (4)
3	AS3-45	Spacer ass'y, 200 & 225 throttle body to mixer: S3-45, G1-21, S1-93 (4), W1-16 (4)



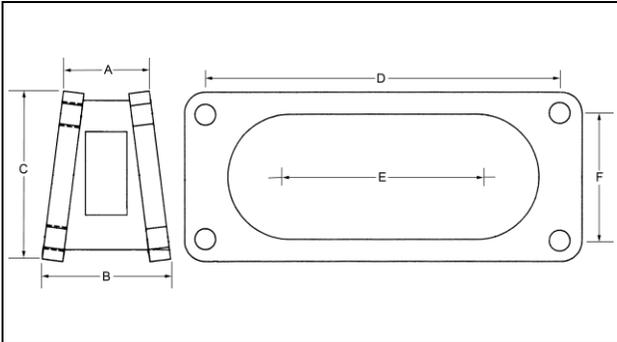
A1-61 (5-1/8" Air Horn)



DIMENSIONS



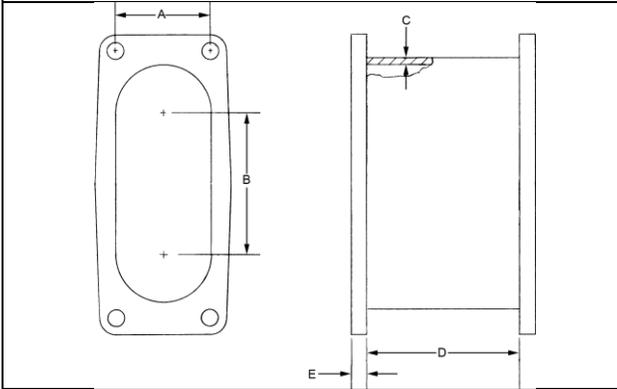
UNIDAPT Adapter System



	A	B	C	D	E	F
	WIDTH	WIDTH	FLANGE HEIGHT	CTR. TO CTR. BOLTS	OPENING CTR TO CTR	CTR TO CTR SPACING
P/N	1.0"	1.5"	1.79"	4.27" (108.5mm)	2.25" (57.15mm)	1.5" (38.1mm)
A1-59	(25.4mm)	(38.1mm)	(45.5mm)			

AA1-59

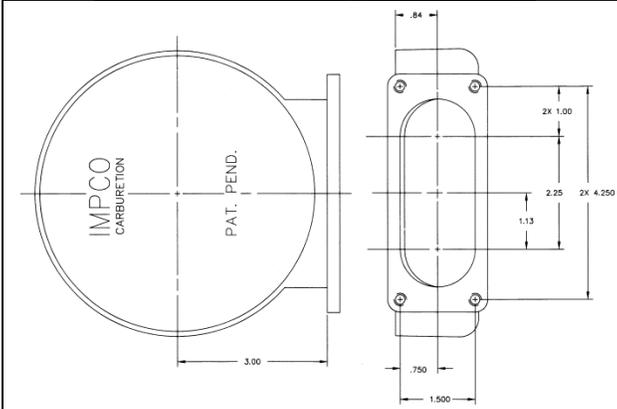
ITEM #	PART #	DESCRIPTION
1	NSS	Adapter, Unidapter Machined
2	G1-135	Unidapter Gasket
3	S1-5	Screw 1/4-20 Large Head Hex



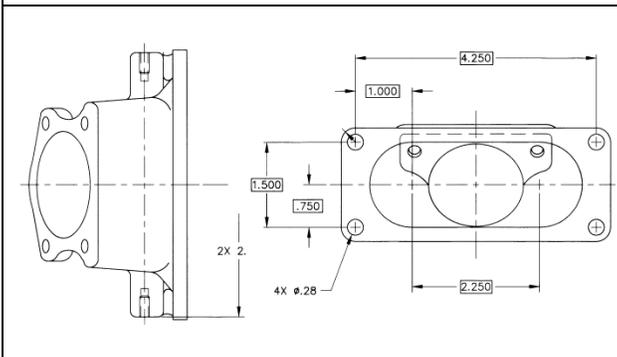
	A	B	C	D	E
	CTR. TO CTR. BOLTS	OPENING CTR TO CTR	WALL THICKNESS	WIDTH/ SPACING	FLANGE THICKNESS
P/N	1.5"	2.25"	0.10" (2.54mm)	2.44" (62.0mm)	0.25" (6.35mm)
AA1-60	(38.1mm)	(57.15mm)			

AA1-60

ITEM #	PART #	DESCRIPTION
1	NSS	Adapter, Unidapter Machined
2	G1-135	Unidapter Gasket
3	S1-5	Screw 1/4-20 Large Head Hex

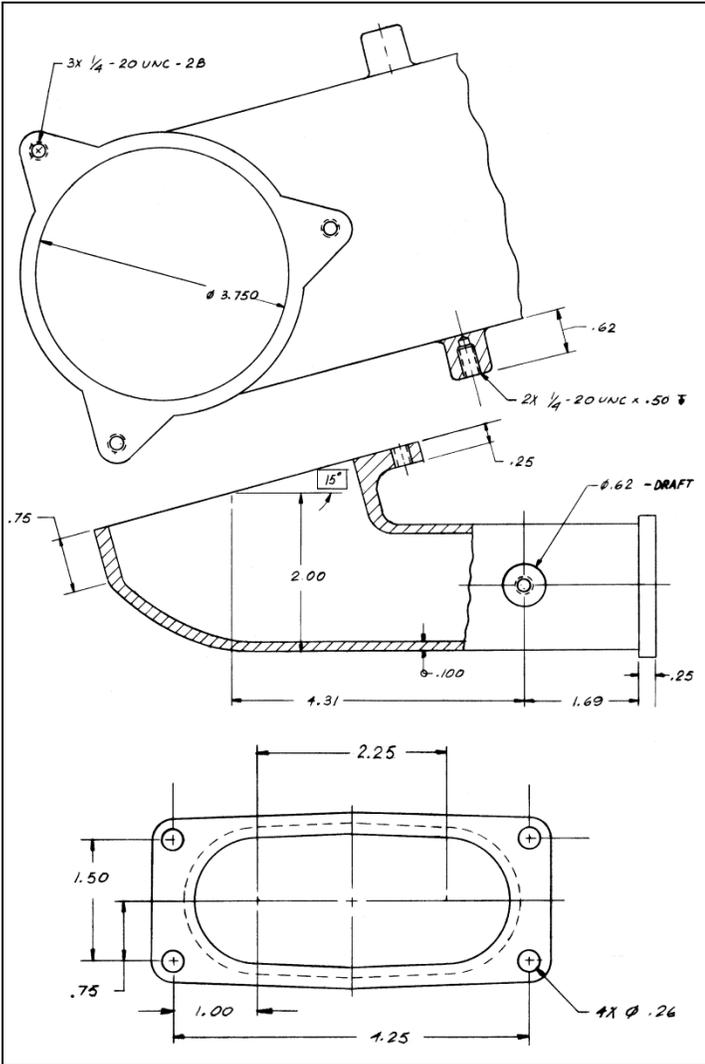


AA1-57		
ITEM #	PART #	DESCRIPTION
1	A1-57	Adapter, Unidapter Machined
2	G1-135	Unidapter Gasket
3	S1-5	Screw 1/4-20 Large Head Hex



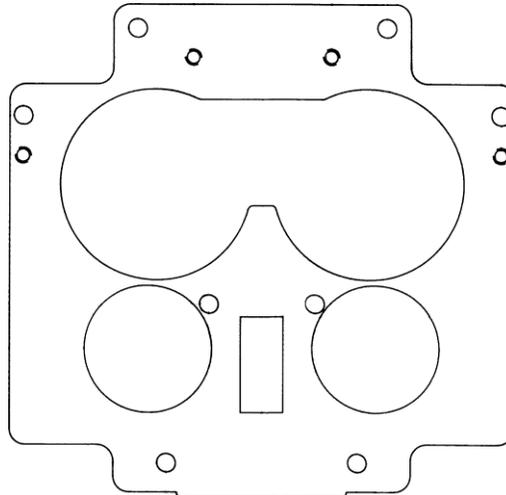
A1-53	
Adapter, 125 Series Mixers	

Adapters



A1-63
Adapter, 300A and 175 Series Mixers

Carter Thermo Quad



DIMENSIONS

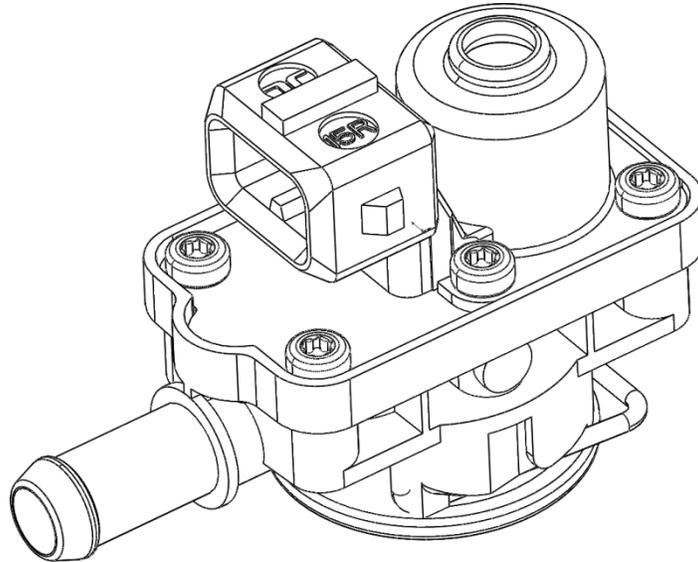
AA3-64

ITEM #	PART #	DESCRIPTION	QTY
1	A3-64	Adaptor	1
2	NSS	Adapter Cut & Drilled	1
3	G1-74	Gasket, Mixer-Adapter Mod 425	1
4	G1-75-3	Gasket, Adapter A3-37 Mod 425	1
5	S1-19	Screw 12-24X5/8 Sltdfil Stlznc	4
6	S1-35	Screw, 10-32 .38 Pnh Sltd Zn	1
7	S1-51	Screw, 10-32 1.25 Filh Sltd Zn	1
8	NSS	Screw, 10-32 1 Filh Sltd Zn	8
9	NSS	Screw 10-24X1/2 Sltdfil Stlznc	4
10	S2-15	Spring/Idle Stop	1

Fuel Injectors & Misc. Components

ES2 Fuel Injector	228
SGL Injector Regulator	231
Repair Kits	233
AL1 Model Levers	234
Throttle Stop Levers	237
AB1 / AB4 Bracket Assemblies	238
Universal Mounting Bracket	239
Air Filters	240
Fuel Filters	241
Tools & Test Equipment	243
Engine Kits & Modules	246
Turbocharger Pressure Control Valve	247
Quick Connect Fittings	248
Fitting, Ball Check Assembly	249
Needle Bearings	250
Filter Repair Kit	251
Harness Relay & Bracket	252
Fittings & Hoses	253
Port Fittings & Hardware	254

ES2 Fuel Injector



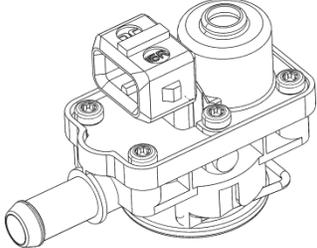
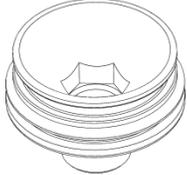
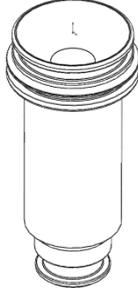
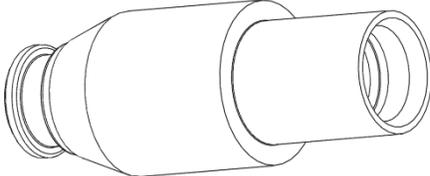
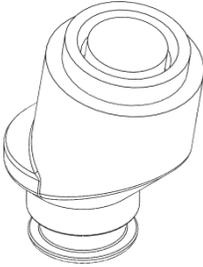
DESCRIPTION

The injector of gaseous fuel uses patented technology to accommodate the most demanding automotive and industrial applications.

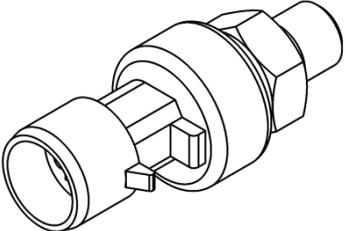
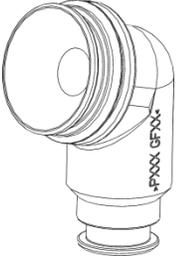
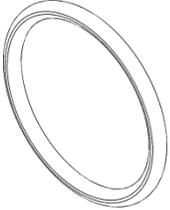
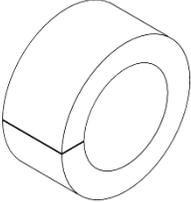
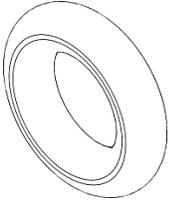
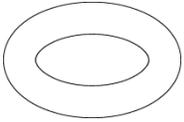
SPECIFICATIONS

Fuel Type	LPG or CNG
Operating Pressure	11.6 - 29.0psi (80 – 207 kPa)
Voltage.....	8 – 18 VDC
Coil Resistance	15 ohm
Operating Temperature Range...	4°F to +257°F (-20°C to +125°C)
Opening Time	3.0 ms
Closing Time	1.0 ms
Minimum Injection Pulse	4.0 ms
Static Flow Deviation.....	+/- 5.0%
Dynamic Flow Deviation.....	+/- 5.0%
Linearity	+/- 2.0%
Driver	Saturation
Seat Leakage.....	<15 cc/hr
Max Flow @ 200 kPa (2.25/2.75)	
Air.....	2.2/2.9 gram/sec
LPG.....	2.6/3.4 gram/sec
CNG	2.6/3.4 gram/sec
Durability	>500 million cycles
Certification	ISO 15500, ECE R67-01, ECE R110

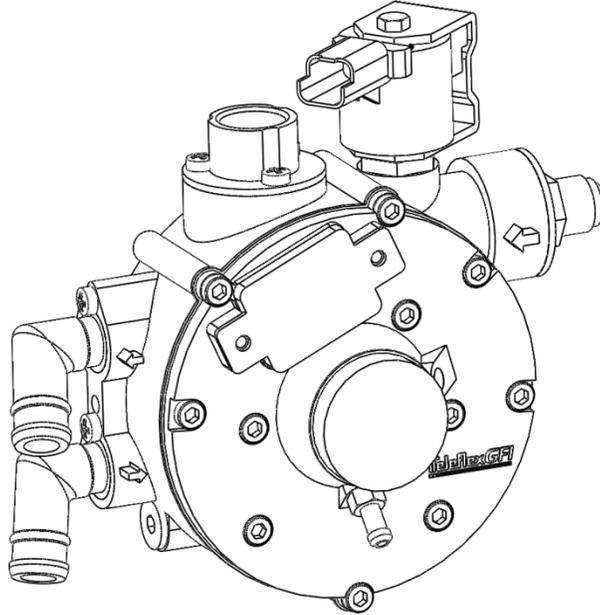
PART NUMBER & ACCESSORIES

	<p>300000-023 Injector/ A3-892 Fuel Injector EV1.3 A, CNG, Bosc</p>
	<p>300200-004 Injector Adapter M10x1</p>
	<p>A4-51981 Injector Adapter 3.0L</p>
	<p>A7-225 Gazioc Injector Adapter 2.4L</p>
	<p>A7-430 Gazioc Injector Adapter 4.3L</p>

ACCESSORIES

	<p>GMA-397 Low/Mid Pressure Sensor Fuel Rail</p>
	<p>A7-537 Injector Adapter 2.4L & 4.3L</p>
	<p>300200-005 Adapter O-Ring</p>
	<p>242100-807 Spacer O-Ring</p>
	<p>270090-109 Inlet O-Ring</p>
	<p>GMN-033 O-ring, Injector</p>

SGI Injector Regulator



P/N: A7-242 / A7-434

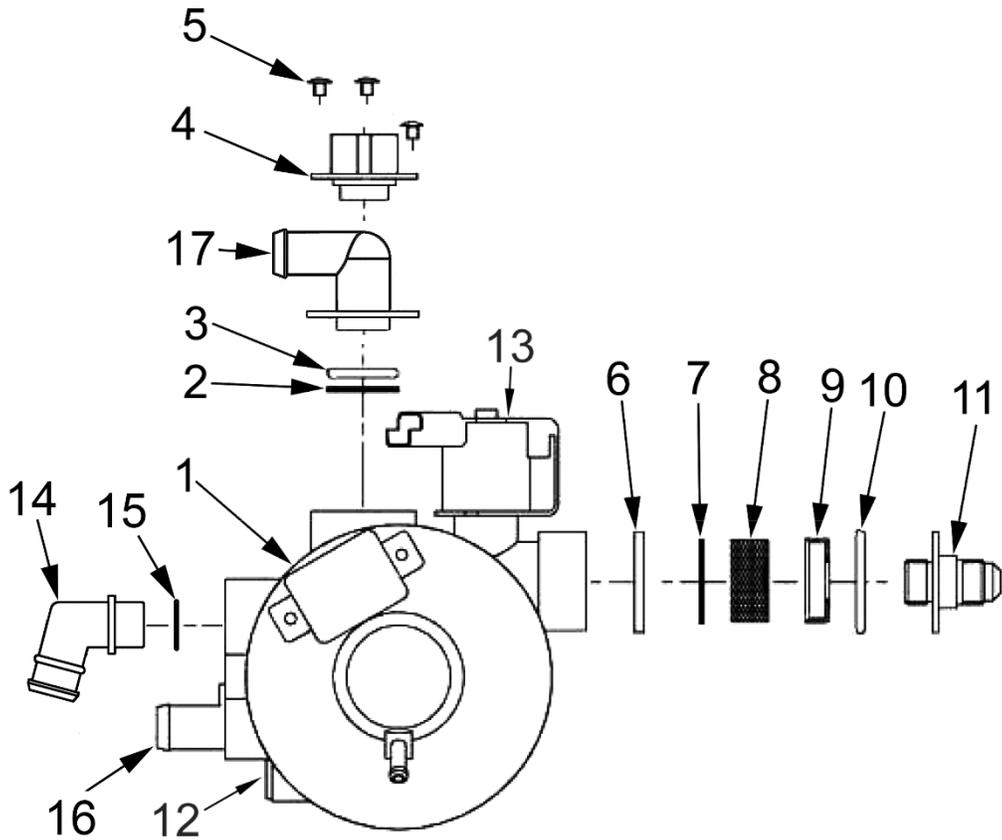
DESCRIPTION

The single stage pressure regulator uses patented technology to accommodate the most demanding automotive and industrial application for major OEMs worldwide. The regulator transforms LPG from a liquid state into a vapor state at a reference outlet pressure and features an integral liquid LPG shut-off valve, 30 micron filter and pressure relief device. MAP referencing, coolant heating, with an optional LPG absolute pressure reference.

SPECIFICATIONS

Fuel Type.....	LPG
Input Pressure.....	29 - 290psi (200 – 2,000 kPa)
Outlet Pressure.....	11.6 - 12.3 psi (80-85kPa) Usually MAP referenced
Operating Temperature Range...	4°F to +257°F (-20°C to +125°C)
Voltage.....	12 VDC (11 W)

COMPONENTS



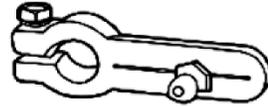
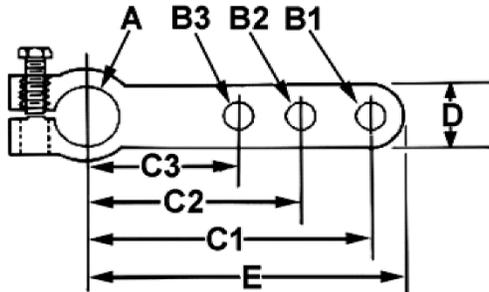
Item #	Description	Qty	IMPCO Part Number
1	Regulator (Fully Assembled with all parts, includes 4 &16)	1	A7-242
	Regulator (Fully Assembled with all parts, includes 4 &14)		A7-434
	Filter Kit (Includes 2, 6, 7, 8, 9)	1	A7-170
	Outlet Fitting Service Kit (Includes 3 & 4)	1	A7-172
5	Screw Kit (Includes 3 screws)	1	A7-176
	Inlet Fitting w/O-Ring (Includes 10 & 11)	1	A7-171
12	Drain Plug & O-ring Kit (Includes 12 & O-ring)	1	A7-173
13	Lock-Off Assembly	1	A7-175
14	Coolant Hose Fitting (105 Degree)	1 or 2	GFA221019A0
15	O-ring, NBR (fits both straight and 105 degree fittings)	2	GFA003050A0
16	Coolant Hose Fitting (Straight)	1 or 2	GFA600019AD
17	Fitting, 90 Degree 16mm	1	GFN100029B
18	Regulator Repair Kit (not shown)	1	A7-182

Repair Kits

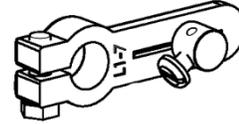
See www.impcotechnologies.com/repair-kits for most up to date listing of repair kits.

RK Part #	Description	RK Part #	Description
A7-182	Repair Kit, Regulator (Fuel Injection)	RK-ET98	ET98 w/Filter Installation & Maintenance Instructions
039-99	KN Regulator Repair Service Instructions	RK-FT150	FT150 Repair Instructions
074-99	Repair Kit, Model S2	RK-J	Repair Kit, Model J, Hydrin Diaphragm, Instructions
083-99	Repair Kit, Model 083	RK-J-2	Repair Kit, Model J, Silicone Diaphragm, Instructions
1459717	Repair Kit, Model Cobra, Instructions (OEM) (RK-C-717)	RK-J-200	Repair Kit, Model J, Hydrin Diaphragm, Instructions (OEM)
1501-RK	1501-L Repair Kit Instructions	RK-J-3	Repair Kit, Model J, Fluorosilicone Diaphragm, Instructions
1-7011	Repair Kit, C250A-2, 4, H-4	RK-J-632	Repair Kit, Model J, Hydrin Diaphragm, Instructions (OEM)
1-7012	Repair Kit, C250A,3,9,H	RK-J-71	
50ERK	Kit, Repair Model 50	RK-J-C	Repair Kit, Model J, Check Valve, Hydrin Diaphragm, Instructions
52-RBK	Kit, Repair Model 52	RK-J-C-3	Repair Kit, Model J, Check Valve, Fluorosilicone Diaphragm, Instructions
AF1-10	Repair Kit, VFF30 (Gasket and Filter Only)	RK-JC-734	Repair Kit, Model J, Check Valve, Hydrin Diaphragm, Instructions (OEM)
AF1-10-001		RK-L	Repair Kit, Model L, Hydrin Diaphragm
FCV-50757	Fuel Control Valve Upgrade	RK-L-2	Repair Kit, Model L, Silicone Diaphragm
SA2330-2	Repair Kit, Algas 60 Diaphragm Service Assy	RK-PE	Repair Kit, Model PE, Hydrin Diaphragm, Instructions
SA2553-2	Repair Kit, Algas 80 Diaphragm Service Assy	RK-PEV	Repair Kit, Model PEV, Hydrin Diaphragm, Instructions
R11-27	Repair Kit, Model 11A17-001, Instructions	RK-PEV-2	Repair Kit, Model PEV, Silicone Diaphragm, Instructions
RK300MA-1/20	Model 300 Rebuild Instructions	RK-PJ	PJ Repair Kit Instructions
RK300MA-1/20-2		RK-PT	Wire Harness Repair Kit for Spectrum III
RK300MA-50/70-2		RK-TE	Repair Kit, Model E Turbo, Silicone Diaphragm, Instructions
RK300MI-1/20		RK-TPEV	Repair Kit, Model E Turbo, Fluorosilicone Diaphragm, Instructions
RK300MI-1/20-2		RK-VFF30	Repair Kit, VFF30 (Standard Hydrin Diaphragm)
RK300MI-50/70-2		RK-VFF30-2	Repair Kit, VFF30 (Silicone Diaphragm)
RK-30796-001		RK-30796-001 Repair Kit	RK-VFF30-3
RK-30796-002	Export Fuel Service Mixer Kit	RK-VFF30-958	
RK-CA55	Model 55 Repair Kit Instructions	T60-RBK	Repair Kit, Model T60, Instructions (Major)
RK-CA55-2		T60-RK	Repair Kit, Model T60, Instructions (Minor)
RK-COBRA	Repair Kit, Model Cobra, Instructions	BEARING SEAL REPAIR KITS	
RK-GMAX-001	Genius Max Repair Kit Instructions		
RK-GMAX-002		RK Part #	Description
RKD1-20-3	Repair Kit RKD1-20-3 FOR 600 Diaphragm	RK-B2-11	Repair Kit, Bearing Seal 1/4"
RKD1-20-3B		RK-B2-12	Repair Kit, Bearing Seal 5/16"
RK-E	Repair Kit, Model E, Hydrin Diaphragm, Instructions	RK-B3-42-1	Repair Kit, Bearing Seal Housi
RK-E-2	Repair Kit, Model E, Silicone Diaphragm, Instructions	RK-B3-43	Repair Kit, Bearing Seal 1/2"
RK-E-3	Repair Kit, Model E, Fluorosilicone Diaphragm, Instructions	RK-B3-43-1	Repair Kit, Bearing Seal Housi
RK-EPR-3		RK-B3-44	Repair Kit, Bearing Seal 7/16"
RK-EPR-4	EPR Repair Kit	RK-B3-479	Repair Kit (includes bearing, seal & sleeve)
RK-EPR-5			

AL1 Model Levers



(AL1-7-2 W/Stud Shown)



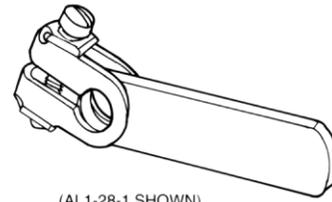
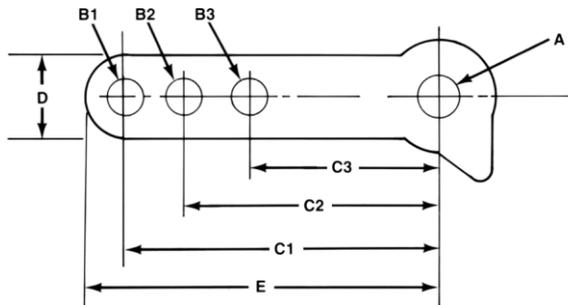
(AL1-7-4 W/Swivel Shown)

LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)	B1	C1	B2	C2	B3	C3	NOTES
AL1-7-1	11.1MM (0.438")	14.3mm (0.563")	44.5mm (1.750")							
AL1-7-2	11.1MM (0.438")	14.3mm (0.563")	44.5mm (1.750")	4.8mm (0.188")	28.6mm (1.125")					
AL1-7-3	11.1MM (0.438")	14.3mm (0.563")	44.5mm (1.750")							Stud S3-31
AL1-7-4	11.1MM (0.438")	14.3mm (0.563")	44.5mm (1.750")	6.0mm (0.234")	28.6mm (1.125")					Stud S3-15
AL1-7-5	11.1MM (0.438")	14.3mm (0.563")	44.5mm (1.750")	4.8mm (0.188")	28.6mm (1.125")					Stud S3-40
AL1-9-1	12.7mm (0.500")	15.9mm (0.625")	58.7mm (2.313")							
AL1-9-1A	14.3mm (0.562")	15.9mm (0.625")	58.7mm (2.313")							
AL1-9-2	12.7mm (0.500")	15.9mm (0.625")	58.7mm (2.313")	6.4mm	28.6mm (1.125")					
AL1-12-1	15.9mm (06.25")	15.9mm (0.625")	77.8mm (3.063")							
AL1-12-3	15.9mm (06.25")	15.9mm (0.625")	58.7mm (2.313")							
AL1-34	7.94mm (3.125")									

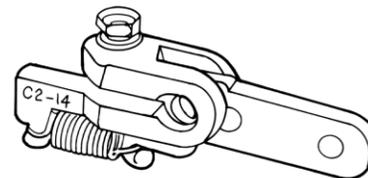
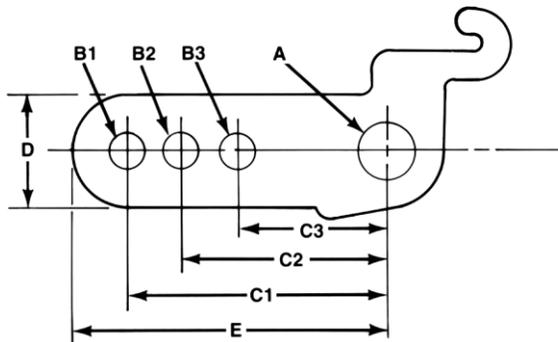
SWIVELS

PART#	DESCRIPTION
AS3-15	Swivel, Boden Wire
AS3-40	Swivel, Boden Wire

Floating Levers

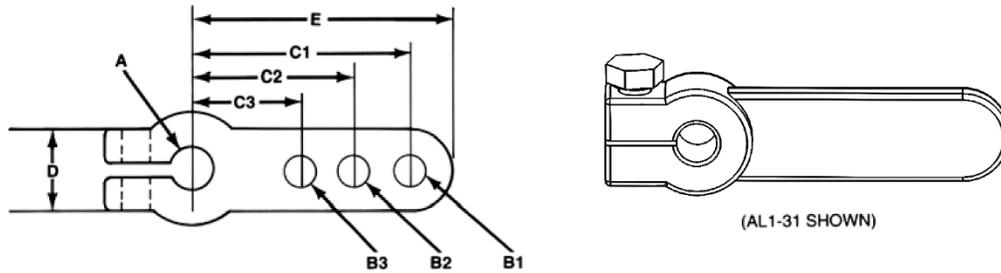


LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)			B1	C1	B2	C2	B3	C3	NOTES
AL1-26-1	6.4 mm (0.250")	12.7 mm (0.500")	54.0 mm (2.125")									
AL1-26-2	6.4 mm (0.250")	12.7 mm (0.500")	54.0 mm (2.125")	6.0 mm (0.234")	28.6mm (1.125")							
AL1-26-401	6.4 mm (0.250")	12.7 mm (0.500")	31.8 mm (2.125")	6.4 mm (0.250")	25.4mm (1.000")							
AL1-27-1	7.9 mm (0.313")	12.7 mm (0.500")	54.0 mm (2.125")									



LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)			B1	C1	B2	C2	B3	C3	NOTES
AL1-26-1	6.4 mm (0.250")	12.7 mm (0.500")	54.0 mm (2.125")									
AL1-26-2	6.4 mm (0.250")	12.7 mm (0.500")	54.0 mm (2.125")	6.0 mm (0.234")	28.6mm (1.125")							
AL1-26-401	6.4 mm (0.250")	12.7 mm (0.500")	31.8 mm (2.125")	6.4 mm (0.250")	25.4mm (1.000")							
AL1-27-1	7.9 mm (0.313")	12.7 mm (0.500")	54.0 mm (2.125")									

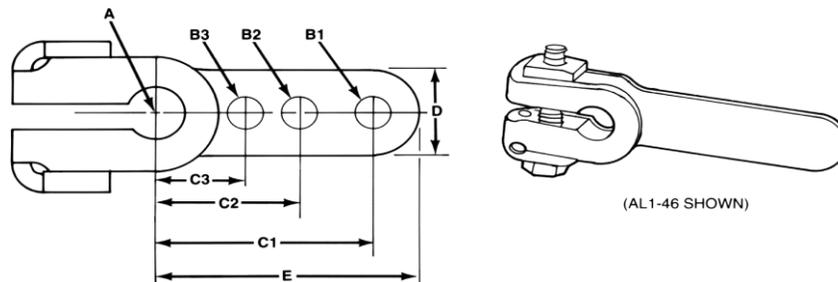
SHAFT CLAMP LEVERS



LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)							NOTES
			B1	C1	B2	C2	B3	C3		
AL1-31	6.4 mm (0.250")	14.3 mm (0.563")	49.2 mm (1.938")							
AL1-31-124	6.4 mm (0.250")	14.3 mm (0.563")	30.2 mm (1.188")	2.4 mm (0.094") OFF CTR.	23.8mm (0.938")	6.4 mm (0.250")	17.5MM (0.688")			
AL1-31-138	6.4 mm (0.250")	14.3 mm (0.563")	49.2 mm (1.938")	3.2 mm (0.125")	42.9mm (1.688")	6.0MM (0.234")	23.0MM (0.906")			
AL1-31-191	6.4 mm (0.250")	14.3 mm (0.563")	48.4mm (1.906")							
AL1-33	7.9 mm (0.313")	14.3 mm (0.563")	49.2MM (1.938")							
AL1-33-76	7.9 mm (0.313")	14.3 mm (0.563")	48.4mm (1.906")	3.2mm (0.125")	44.5mm (1.750")	6.0MM (0.234")	19.1mm (0.750")			
AL1-33-358	7.9 mm (0.313")	14.3 mm (0.563")	33.3mm (1.313")	6.4mm (0.250")	25.4mm (1.000")					
AL1-7-5	6.4 mm (0.250")	14.3 mm (0.563")	19.1mm (0.750")	6.4mm (0.250")	12.7mm (0.500")					

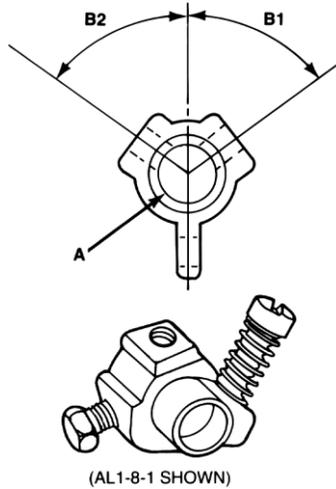
*Variation of the AL1-33 can be made form the standard AL1-33 lever.

Stamped Steel Throttle Clamp Levers



LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)							NOTES
			B1	C1	B2	C2	B3	C3		
AL1-46	7.9 mm (0.313")	12.7 mm (0.500")	47.6 mm (1.875")							

Throttle Stop Levers

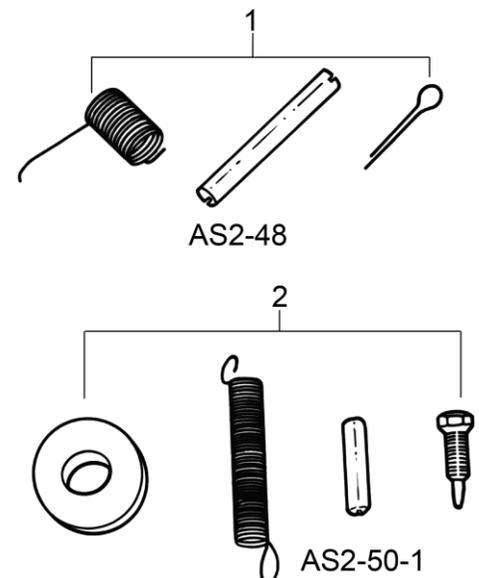


LEVER	MT. HOLE I.D. (A)	WIDTH (D)	USABLE LENGTH (E)	ANGLE	
				B1	B2
AL1-8-1	6.4MM (0.250")	9.5MM (0.375")	19.1MM (0.750")	50°	50°
AL1-8-2	7.9MM (0.313")	9.5MM (0.375")	19.1MM (0.750")	50°	50°
AL1-10	9.5MM (0.375")	11.1MM (04.38")	22.2MM (08.75")	54°	54°
AL1-11-1	11.1MM (04.38")	11.1MM (04.38")	25.4MM (1.000")	57°	57°

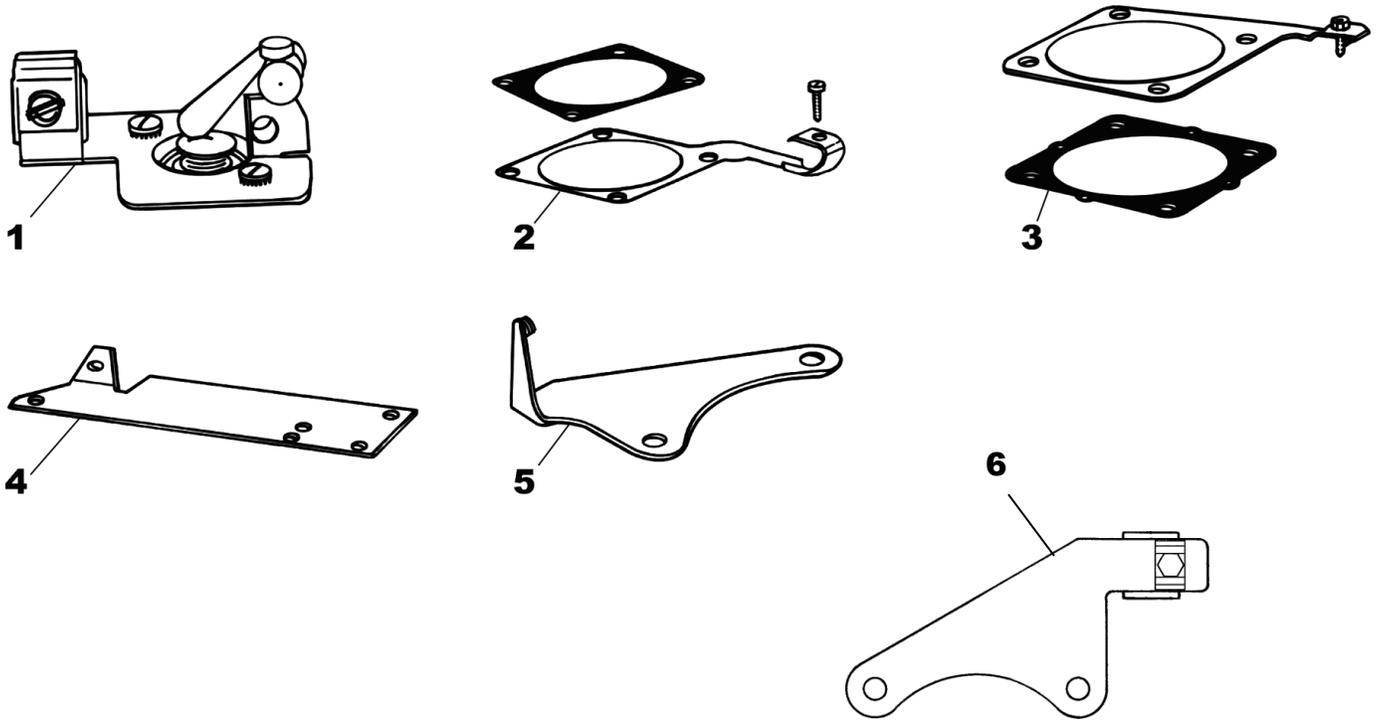
Dimensions given are subject to change without notice

AS2 MODEL THROTTLE RETURN SPRING KITS

ITEM#	PART#	DESCRIPTION
1	AS2-50-1	Spring Assy, throttle return, 6.4mm (0.250") shaft
	AS2-50-2	Spring Assy, throttle return, 7.9mm (0.313") shaft
2	AS2-50-3	Spring Assy, throttle return, 9.5mm (0.3750") shaft
	AS2-50-4	Spring Assy, throttle return, 6.4mm (0.438") shaft
3	S2-50	Spring Assy, throttle return (CA55, CA100 & CA125)
4	S2-50-2	Spring Assy, throttle return (CA100 & FT60)



AB1 / AB4 Bracket Assemblies



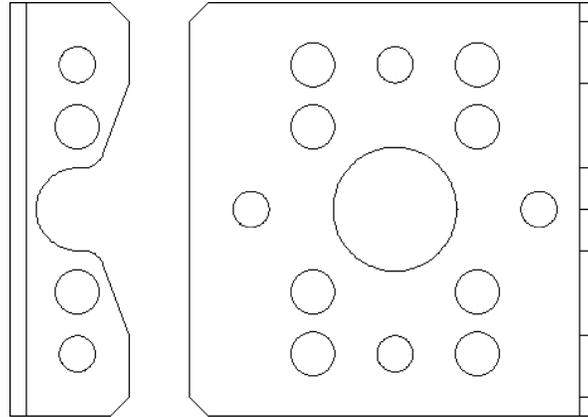
ITEM#	PART#	DESCRIPTION
1	AB1-28	Primer, manual, E & J Series Converters
2	AB4-1	Bracket Assy Boden Wire, 200 & 225
	AB4-2	Bracket Assy Boden Wire, CA100 & CA125
3	AB4-4	Bracket Assy Boden Wire for use w/AT2-7, AT2-8
4	AB4-13	Bracket Assy Boden Wire, CA55
5	AB4-23	Bracket Assy, Boden Wire CA55
Not Shown	B4-15682	Bracket, Regulator, LPG-Toyota

Universal Mounting Bracket

Fuel Injectors & Misc. Components



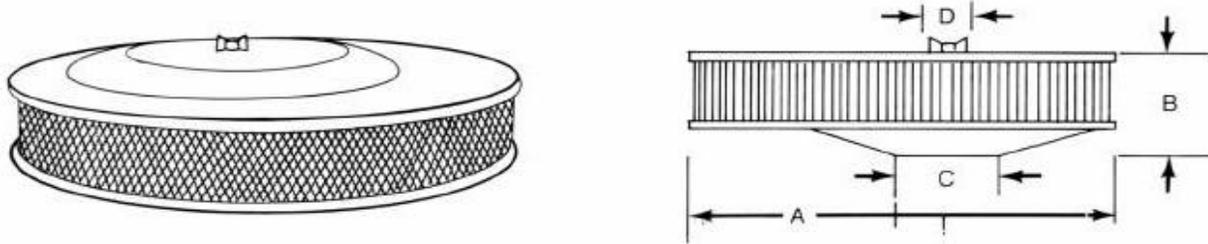
Universal Mounting Bracket



BRACKETS

PART #	DESCRIPTION
AP-1507	Bracket, Mounting Ass'y

Air Filters



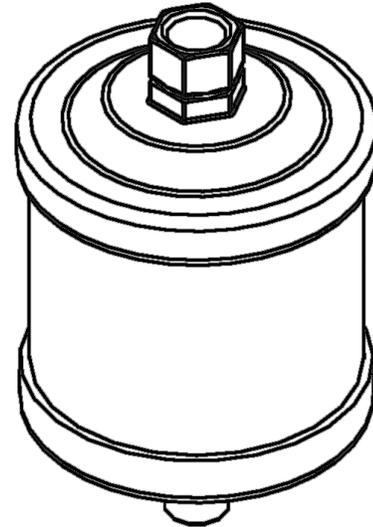
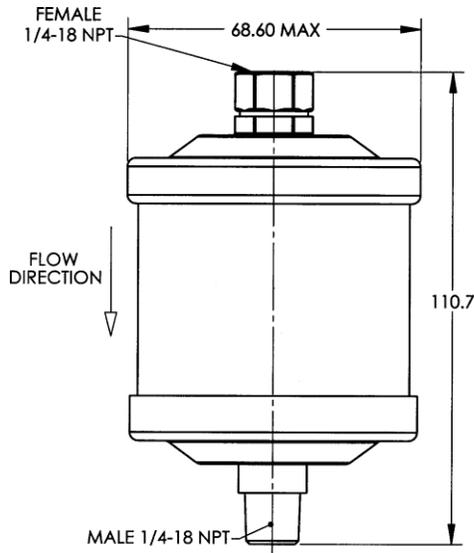
ASSY PART#	FLOW RATE	APPLICATION	FILTER PART#	COVER PART #	BASE PART#	STUD PART#	A	B	C	D
AF1-1	165 L/s (350 CFM)	CA300A	F1-1	C1-4	N/A	N/A	251.0mm (9.88")	69.9mm (2.75")	N/A	192.0mm (7.56")
AF1-5	71 L/s (150 CFM)	CA125	F1-5	C1-28	N/A	AS3-33	172mm (6.750")	60.3mm (2.375")	N/A	127.0mm (5.0")
AF1-7	260 L/s (550 CFM)	Various	F1-7*	C1-60	A2-55	AS3-52	357.4mm (14.07")	105.4mm (4.15")	148mm (5.84")	295.1mm (11.62")
AF1-8	118 L/s (250 CFM)	CA125	F1-8	C1-48	A2-47	AS3-33	233.4mm (9.19")	55.9mm (2.2")	128.5mm (5.06")	168.1mm (6.62")
AF1-14	236 L/s (500 CFM)	CA125/CA425	F1-14	C1-48	A2-47	AS3-51	233.4mm (9.19")	168.1mm (6.62")	128.5mm (5.06")	168.1mm (6.62")
AF1-15	189 L/s (400 CFM)	CA425	F1-15	C1-28	N/A	AS3-32	173.0mm (6.81")	168.1mm (6.62")	N/A	127.0mm (5.0")
AF1-16-2	260 L/s (550 CFM)	CA425	F1-9	C1-60	A2-54	AS3-41	357.4mm (14.07")	105.4mm (4.15")	128.5mm (5.06")	295.1mm (11.62")
AF1-16-3	260 L/s (550 CFM)	CA425	F1-7*	C1-60	A2-54	AS3-41	357.4mm (14.07")	105.4mm (4.15")	128.5mm (5.06")	295.1mm (11.62")
AF1-17-2	165 L/s (350 CFM)	CA225	F1-9	C1-60	A2-55	AS3-52	357.4mm (14.07")	105.4mm (4.15")	148mm (5.84")	295.1mm (11.62")

*UL Recognized

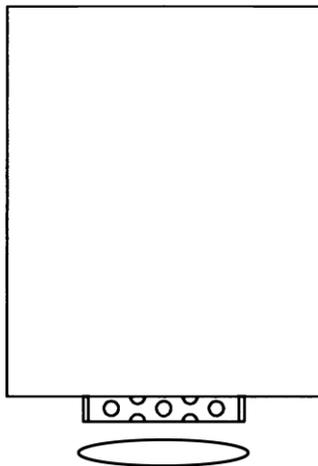
Studs

PART #	DESCRIPTION
AS3-28	Stud Ass'y, 1/4 -20 x 5 - 1/4" Long
AS3-29	Stud Ass'y, 1/4 -20 x 3 - 1/8" Long
AS3-32	Stud Ass'y, 1/4 -20 x 4 - 1/8" Long
AS3-33	Stud Ass'y, 1/4 -20 x 1 - 1/8" Long
S3-31	Stud, 10-32
S3-34	Stud, 1/4-28

Fuel Filters



P/N: F1-30869-001
Filter Ass'y, LPG 1/4" x 1/4" NPT
UL (MH17720)



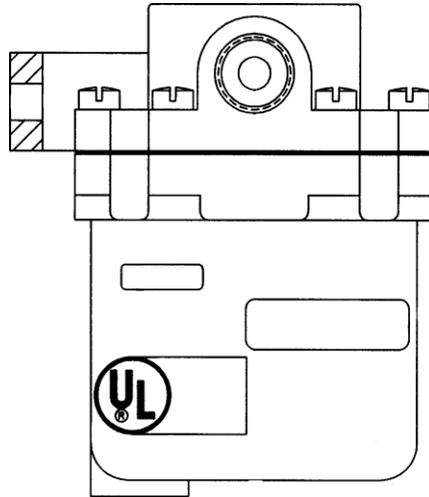
P/N: F-108 (Not Shown)
Filter Ass'y, LPG Inline 1/4" x 1/4" NPT
UL (AU1502) Inquire for specific ECE approval

P/N: F-201 (Not Shown)
Filter Ass'y, LPG Inline 1/4" x 1/4" NPT

P/N: 20B13 (Not Shown)
Filter Flat Mount

P/N: 701
Filter Kit, ELF1, EF5, BFF2

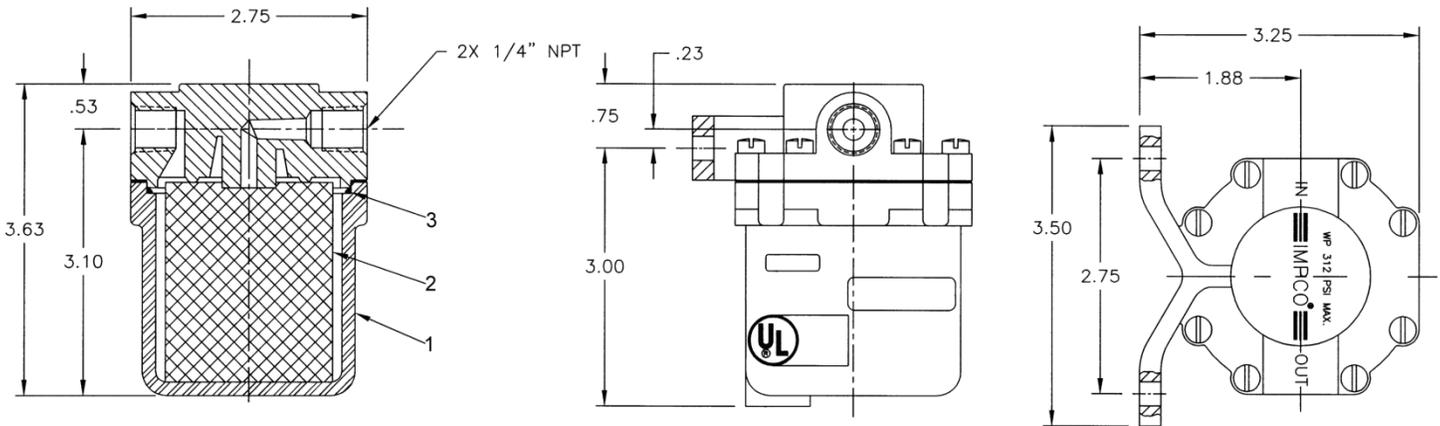
Fuel Filters (Continued)



P/N: F-830

UL Certified (AU1502). Inquire for specific ECE approval

DIMENSIONS



ITEM #	PART#	DESCRIPTION	QTY
1	2313	Filter Bowl	1
2*	688	Filter Element	1
3*	S3-1524-015	O-Ring	1
4	2314-1	Filter Cover	1
5	S1-3	Screw 10-24 .62 LG Slot	8
Not Shown	701	F-830 Repair Kit, Incls 2 & 3	1

Tools & Test Equipment

TEST EQUIPMENT

PART#	DESCRIPTION
FSA-1000	Fuel system analyzer, shows O2 sensor voltage & duty cycle, used to calibrate closed-loop systems
G2-2	Gauge, used to set lever height, included in ITK-1

TAMPER RESISTANT COMPONENTS

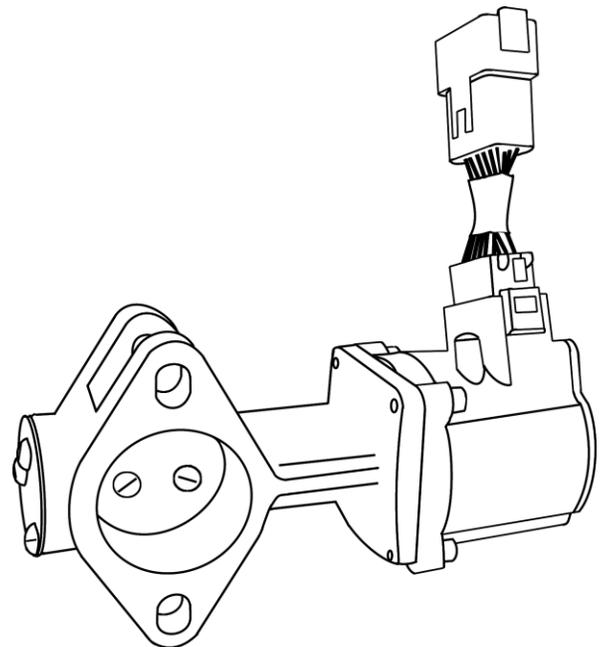
PART#	DESCRIPTION
P3-17956-10	Plug, Expansion
P3-17956-8	Plug, Expansion

HARNESS

PART#	DESCRIPTION
7380640	Harness, LCS Programming, Early Style



FSA-1000

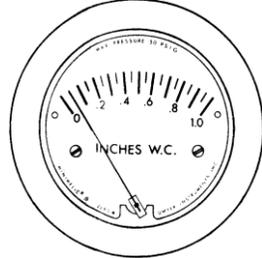


LCS Controller Shown with Electrical Adapter

ITK-1 & ITK-4 Components



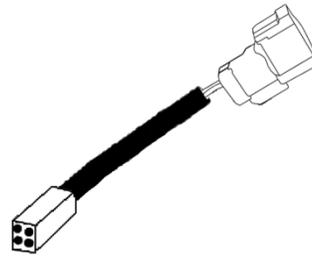
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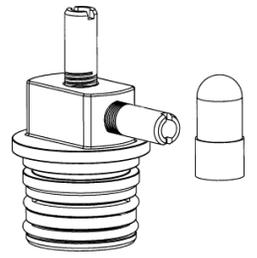
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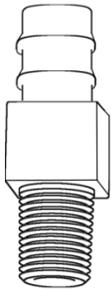
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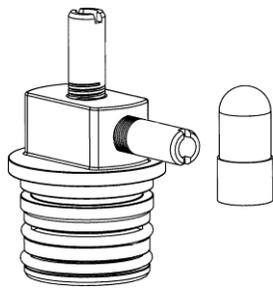
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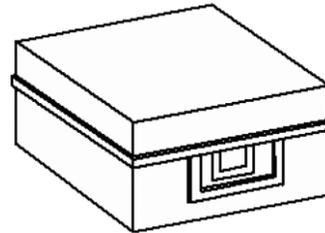
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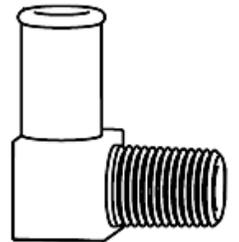
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8



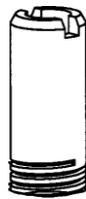
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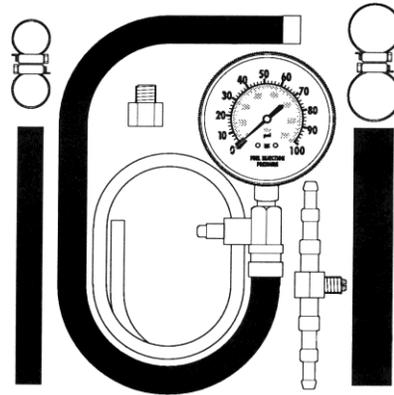
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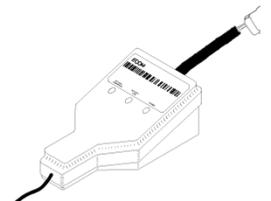
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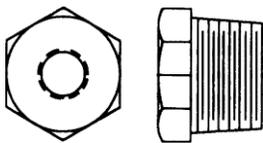
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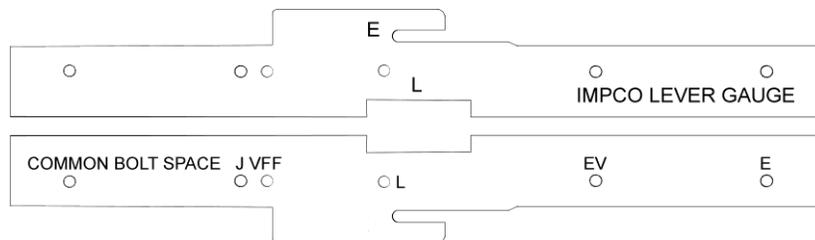
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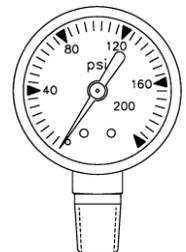
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16



17

Tool Kit ITK-1



Tool Kit ITK-4



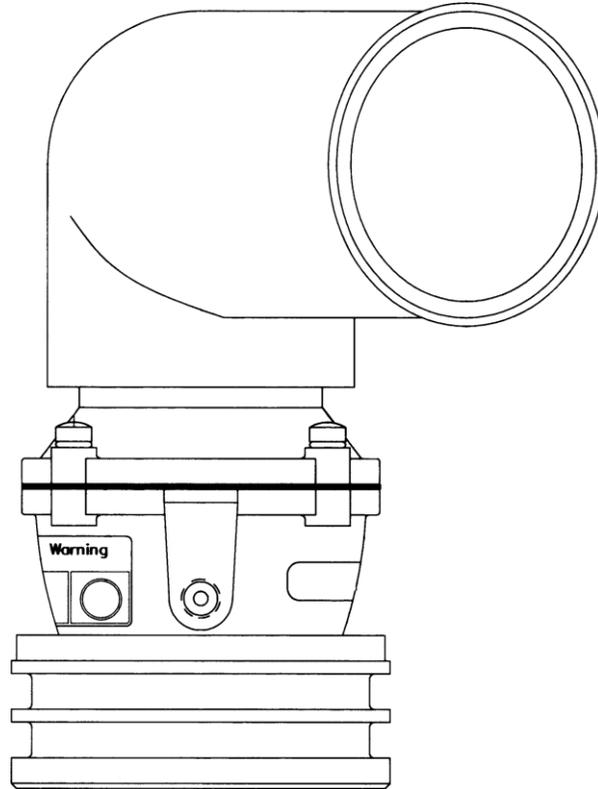
ITEM#	DESCRIPTION	QTY	PART#
1	Test Kit Gauge 0-5Psi(2-5205)	1	TG-005
2	Test Kt-Gage 0-10"Wc(2-5010)	1	TG-010
3	Hose, 3/16"Id Vacuum Bulk	8'	H1-18
6	Fitting, 1/8Npt 3/16Hs Nip Brs	1	F4-4
9	Case Plastic 12X8X3.5	1	C9-25849-003
10	Fitting, 1/8Npt 1/4Hs El Nylon	1	F4-8
12	Fitting, 1/4Unf 1/4Hs Vac Nip	1	F4-2
15	Fitting, 1/2Npt 1/8 Bushing	1	B3-26
16	Gauge, Lever Height	1	G2-2
17	Test Kit Gauge	1	TG-0200

ITEM#	DESCRIPTION	QTY	PART#
1	Test Kit Gauge 0-5 PSI (2-5205)	1	TG-005
2	Test Kit-Gage 0-10" WC (2-5010)	1	TG-010
3	Hose, 3/16" Id Vacuum, Bulk	1.5'	H1-18
4	Harness, Adapter Gen 2 DLC to Gen Fitting Assembly, Test Cap (System	1	E1557400
5	II LPR Secondary Pressure Test Adapter)	1	AF4-31105
6	Fitting, 1/8 NPT 3/16Hs Nip Brass	2	F4-4
7	Assembly, Fitting Test Cap 3/4	1	AF4-50254-002
8	Pin, Retainer	10	P1-30559
9	Case, Metal, 14.25 x 9 x 4.25	1	C9-50724-001
10	Fitting, 1/8 NPT 1/4Hs El Nylon	2	F4-8
11	Tool, 20IPR Torx-Plus Bit	1	T7-50172
12	Fitting, 1/4 UNF, 1/4 HS Vac Nip	1	F4-2
13	Gauge, Test Gasoline Fuel System	1	TG-31119-001
14	ASM, CAN Dongle (ECOM Cable)	1	E2046012

Engine Kits & Modules

PART#	DESCRIPTION
BP-4T	Upgrade kit, Toyota, 4Y and 4P Engine
BP-8H	Upgrade kit, Hyster, Mazda 2L, OL
MD-K8521AK	Kit, Komatsu, AX/BX LPG Series

Turbocharger Pressure Control Valve



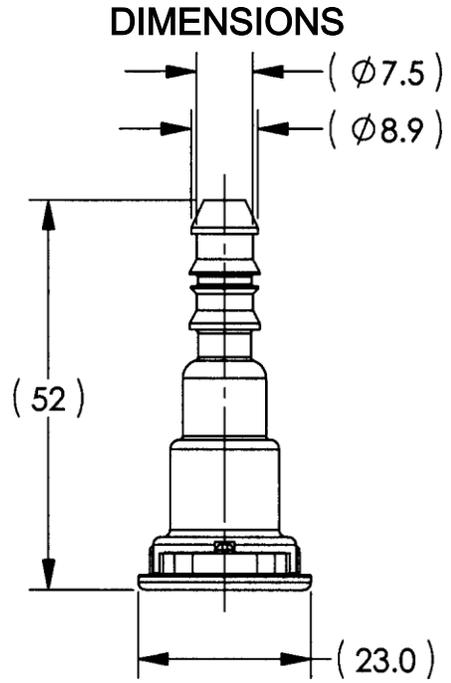
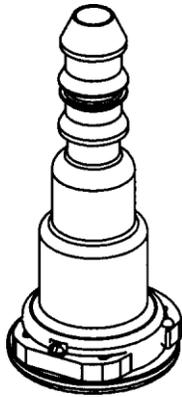
P/N: TC2-9-C1

DESCRIPTION

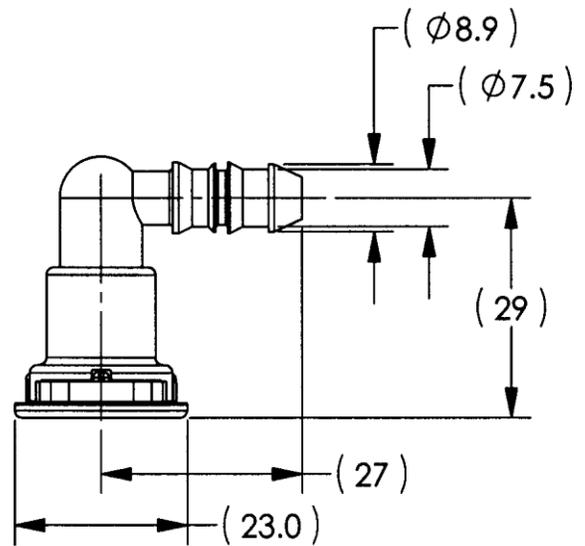
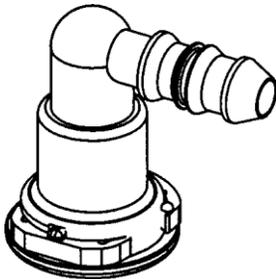
The TC2 valve allows control of boost pressure without power reducing inlet or outlet restrictions. The TC2 operates in the cool environment of the air intake while allowing the turbo to operate at 100% efficiency of the turbine up to the point of control intercept. It allows a quick throttle response and optimum horsepower production at the desired RPM range and eliminates run away pressure and potential damage to the engine.

Quick Connect Fittings

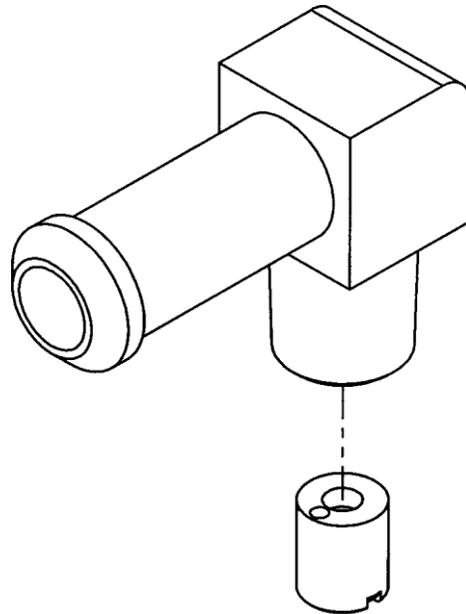
P/N: F4-30759-001



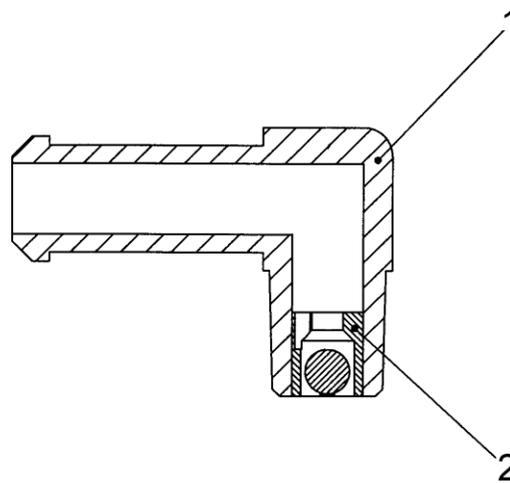
P/N: F4-30761-001



Fitting, Ball Check Assembly



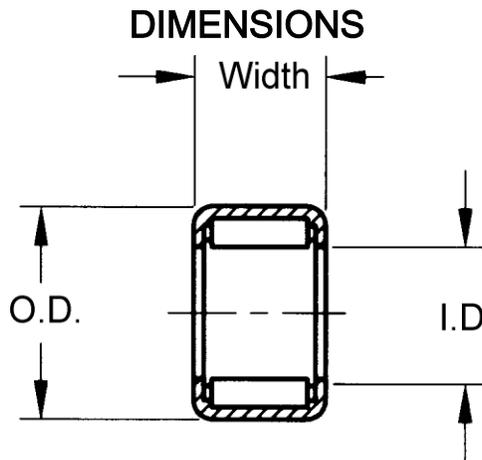
COMPONENTS



AF4-14883

ITEM #	PART#	DESCRIPTION	QTY
1	F4-14885	Fitting, Hose	1
2	AH1-4-2	Valve, Ball Check	1

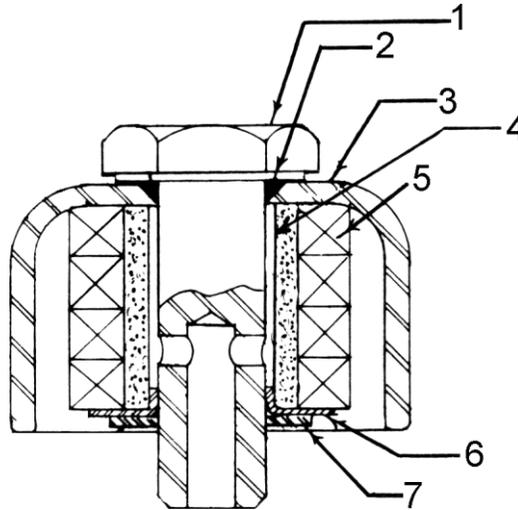
Needle Bearings



PART#	DESCRIPTION	O.D.	I.D.	WIDTH
B2-16	Bearing, Needle .687X500X625	.687	0.5	0.625
B2-6	Bearing, Needle .438X250X312	.438	0.25	0.312
B2-7	Bearing, Needle .500X312X312	.500	0.312	0.312
B2-8	Bearing, Needle .562X375X500	.562	0.375	0.5
B2-9	Bearing, Needle .625X4375X50	.625	0.437	0.5

Filter Repair Kit

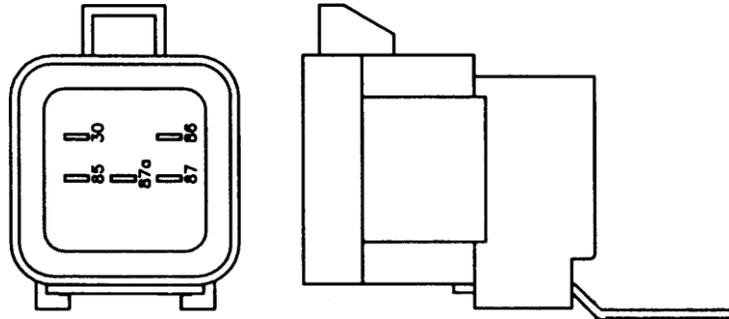
Minor 20 Model



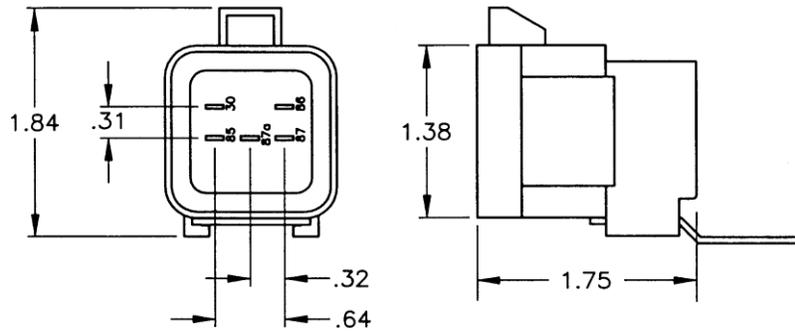
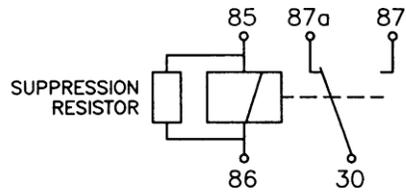
P/N: R20-11

ITEM#	PART#	DESCRIPTION	QTY
1	NSS	Tie Bolt	1
2*	NSS	O-ring	1
3	NSS	Bowl	1
4*	NSS	Felt Element	4
5*	NSS	Bronze Element	1
6*	NSS	Retaining Washer	1
7*	NSS	Lower Washer Gasket	1
Not Shown*	NSS	Base Gasket	1

Harness Relay & Bracket



SPECIFICATIONS



IMPCO P/N	PACKARD P/N	TYPE	COLOR	TEMP RANGE	VOLTAGE	CURRENT RATING	COIL RESISTANCE	TRANSIENT SUPPRESSOR RESISTOR
R3-17147	1235000	SPDT	BLACK	-40°C TO +125°C	10 TO 16V	NO 30A NC 20A	70-90 ohms	680 ohms

Fittings & Hoses

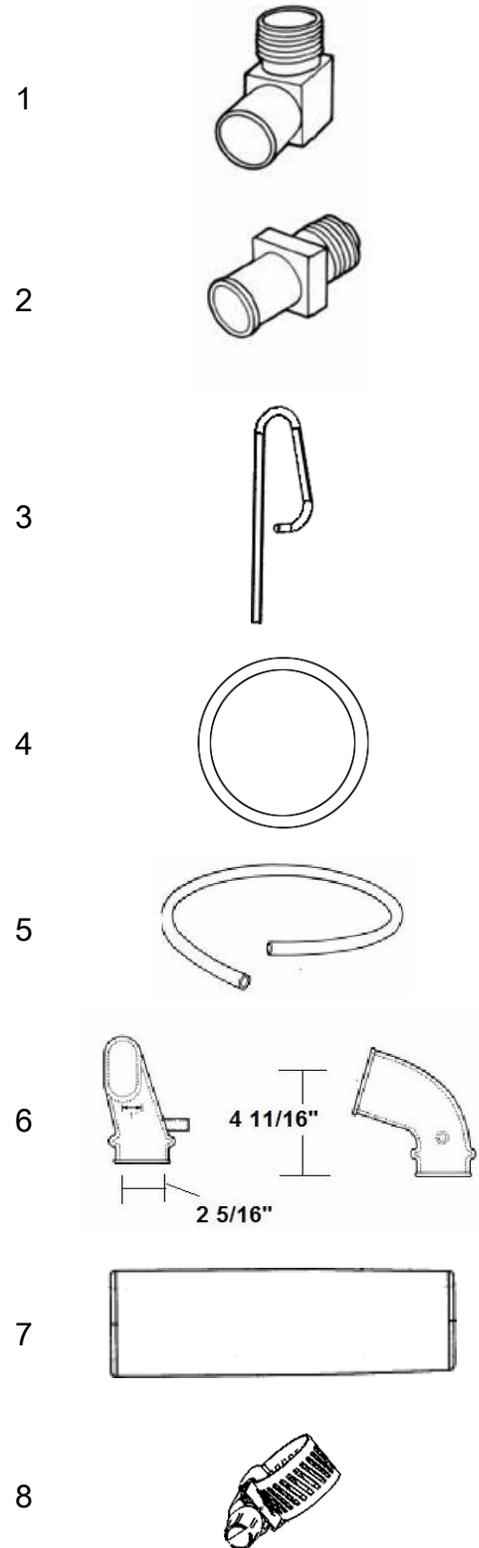
F4 SERIES FITTINGS

ITEM #	PART #	DESCRIPTION
1	F4-12	Fitting, 1/8 NPT - 3/8" Hose 90°L Nylon
	F4-17	Fitting, 3/8 NPT - 5/8" Hose 90°L Nylon
	F4-8	Plastic 1/4" I.D. hose 1/8 NPT 90°L
	F4-23	Plastic 3/4" I.D. hose 3/8 NPT 90°L
2	F4-24	Fitting, 3/8 NPT - 3/4" Hose Str. Nylon
	F4-2	Fitting, 1/4"UNF - 1/4" Hose Vac. Nip.
3	P1-30559	Pin, Lock O-ring Fittings
4	S3-30563-001	O-ring, for Fittings #306

HOSES/TUBES/CLAMPS

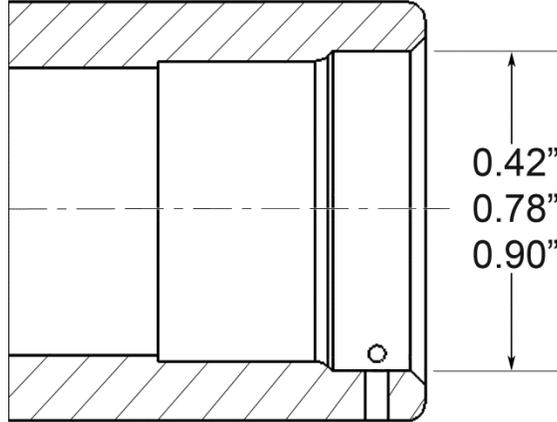
ITEM #	PART #	DESCRIPTION
5	H1-5*	Hose, 7/32" O.D. for 1/4" fittings
	NSS*	Hose, 5/8" I.D. Fuel Vapor
6	AH1-13	Hose ass'y, 2-5/16" ID w/Spacer
7	T1-7	Tube, .188" O.D. .035" Wall .63" L
8	C2-16664-1	Clamp, Hose .69 OD

*Note: Indicate length desired as quantity.



Port Fittings & Hardware

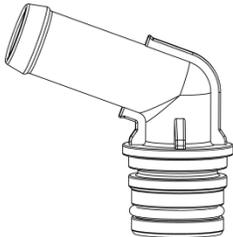
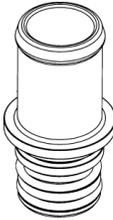
IMPCO uses several types of fittings with O-ring seals designed to fit into one of two port sizes. To determine the diameter of the fitting refer to the illustration below:

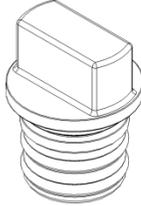


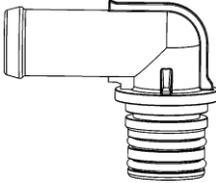
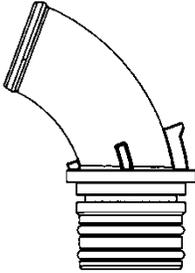
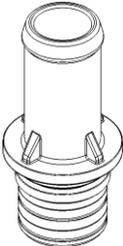
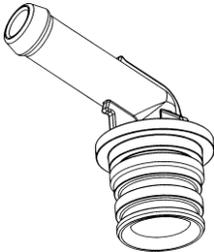
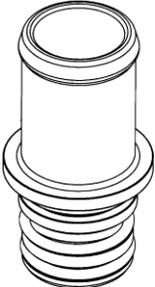
Sample Port Cross Section (design may differ by application).

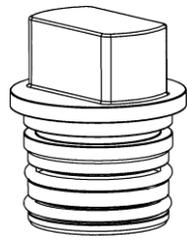
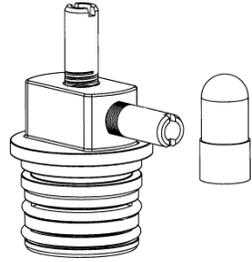
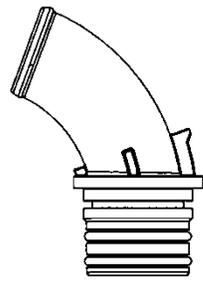
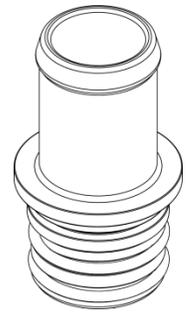
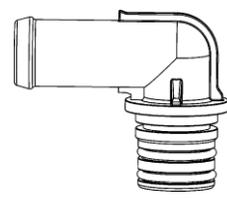
Note: All port fittings include the O-ring(s).

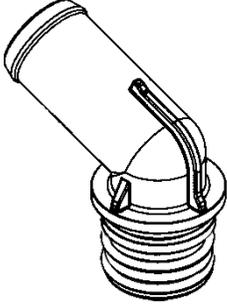
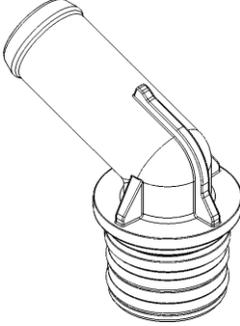
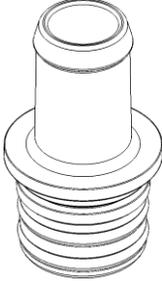
Fits .42" Port (single O-ring included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-50471-001	Plug	N/A	
AF4-50739-001	Straight	3/8"	

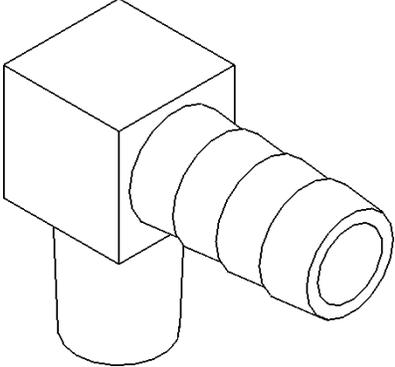
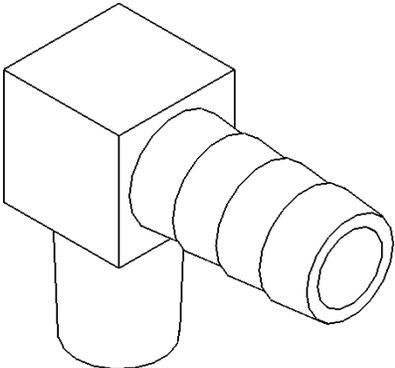
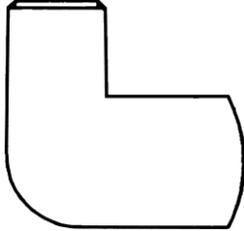
Fits .78" Port (single O-ring included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-54533-001	45° Angle	1/2"	
AF4-54338-001	70° Angle	1/2"	
AF4-54334-001	Straight	1/2"	

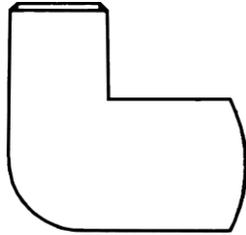
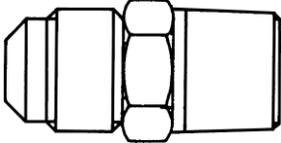
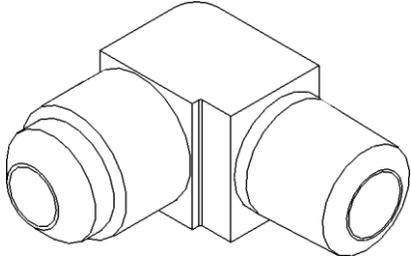
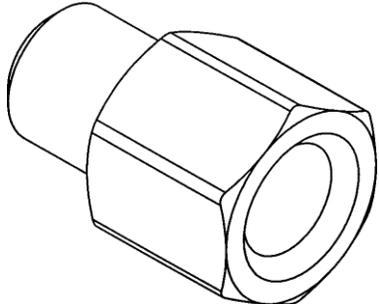
Fits .78" Port (double O-rings included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-30613	Cap	N/A	
AF4-30614	70° Angle	5/8"	

Fits .78" Port (double O-rings included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-50733-001	90° Angle	5/8"	
AF4-50430-001	Swept 70°	3/4"	
AF4-30615	Straight	5/8"	
AF4-30614-002	70° Angle	10mm or 3/8"	
AF4-50045-001	Straight	3/4"	

Fits .90" Port (double O-rings included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-50254-001	Plug	N/A	
AF4-50254-002	Test Cap (For Intermittent Pressure Testing Only)	1/4"	
AF4-50044-001	Swept 70°	3/4"	
AF4-31193-001	Straight	3/4"	
AF4-52930-001	90° Angle	5/8"	

Fits .90" Port (double O-rings included)			
Assembly P/N	Description	Hose ID	Illustration
AF4-31197-001	70° Angle	3/4"	
AF4-31259-001	70° Angle	5/8"	
AF4-31260-001	Straight	5/8"	

Assembly P/N	Description	Dimensions	Illustration
401-02	90 Elbow Brass	1/8" NPT 3/8" Hose	
401-04	90 Elbow Brass	1/4" NPT 3/8" Hose	
417-03	90 Elbow Brass	3/8" NPT Male/Female	

Assembly	Description	Dimensions	Illustration
F4-14184-002	Elbow, brass, 90 degree	¼" NPT Male/Female	
F4-14220	Fitting, Flare, brass #6 SAE 3/8"	¼" NPT 3/8"	
F4-25	Fitting, 90 degree Elbow #6 SAE	¼" NPT 3/8" Flare	
F4-30953-001	Fitting, Adapter, Brass	¼" NPT	

Assembly	Description	Dimensions	Illustration
2F-137	Fitting, Brass	See Illustration	
2F-158P	Fitting, Brass	See Illustration	
C2-30500-002	Cap, Vacuum 3/6"		
181-09	Fitting, Idle		
F4-18	Fitting, straight	3/8 NPT 5/8 Nip Nylon	

Spectrum Series II

(2004 - 2006)



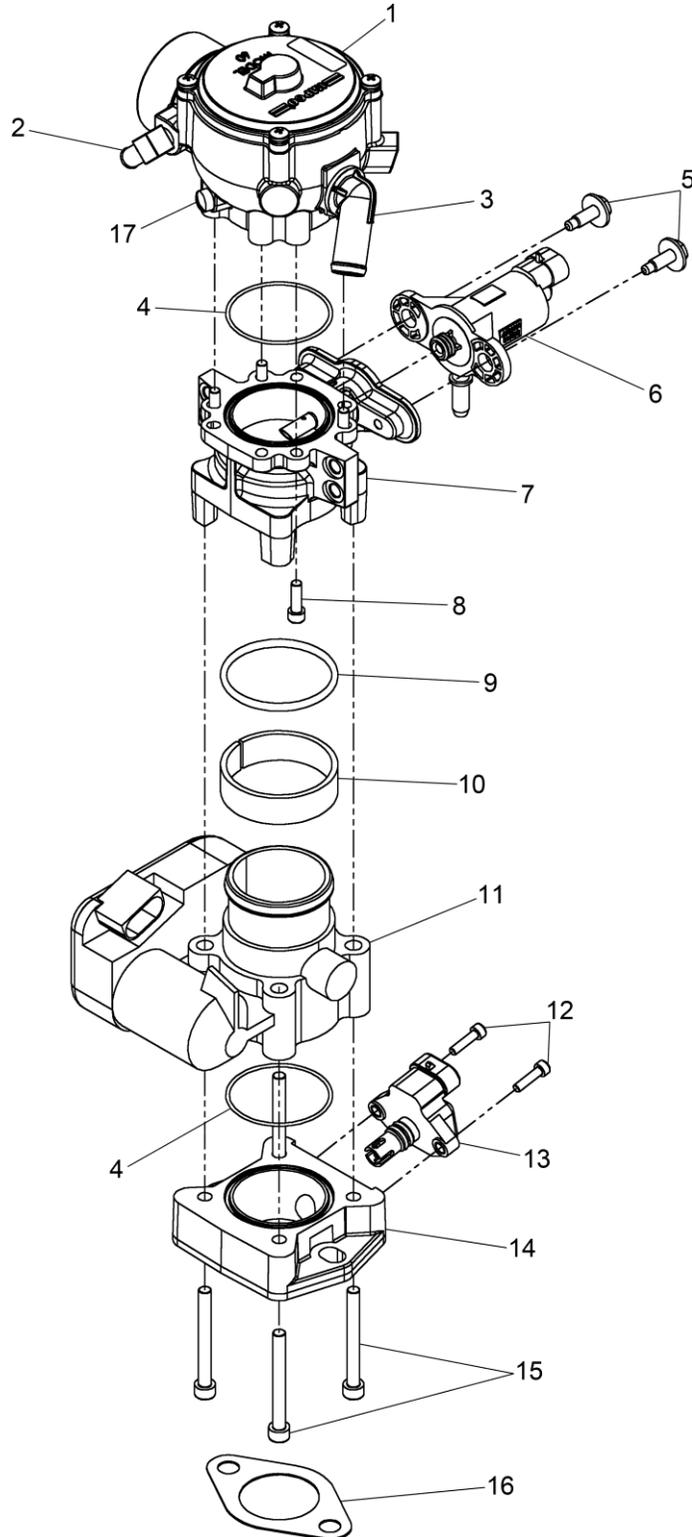
IMPCO technologies offers factory replacement fuel system components for the Spectrum Series II certified engine systems. These components are only available through authorized IMPCO distributors.

Factory service manuals, repair procedures, and TSBs must be acquired and used through the OEM parts network. IMPCO Technologies is not able to supply these materials.

2.0-2.4L Mitsubishi Lift Trucks	263
3.0L LPG Lift Trucks	278
3.0L Gasoline Lift Trucks	291
4.3L LPG Lift Trucks	300
4.3L Gasoline Lift Trucks	319
4.3L Dual Fuel Lift Trucks	332

2.0-2.4L Mitsubishi Lift Trucks

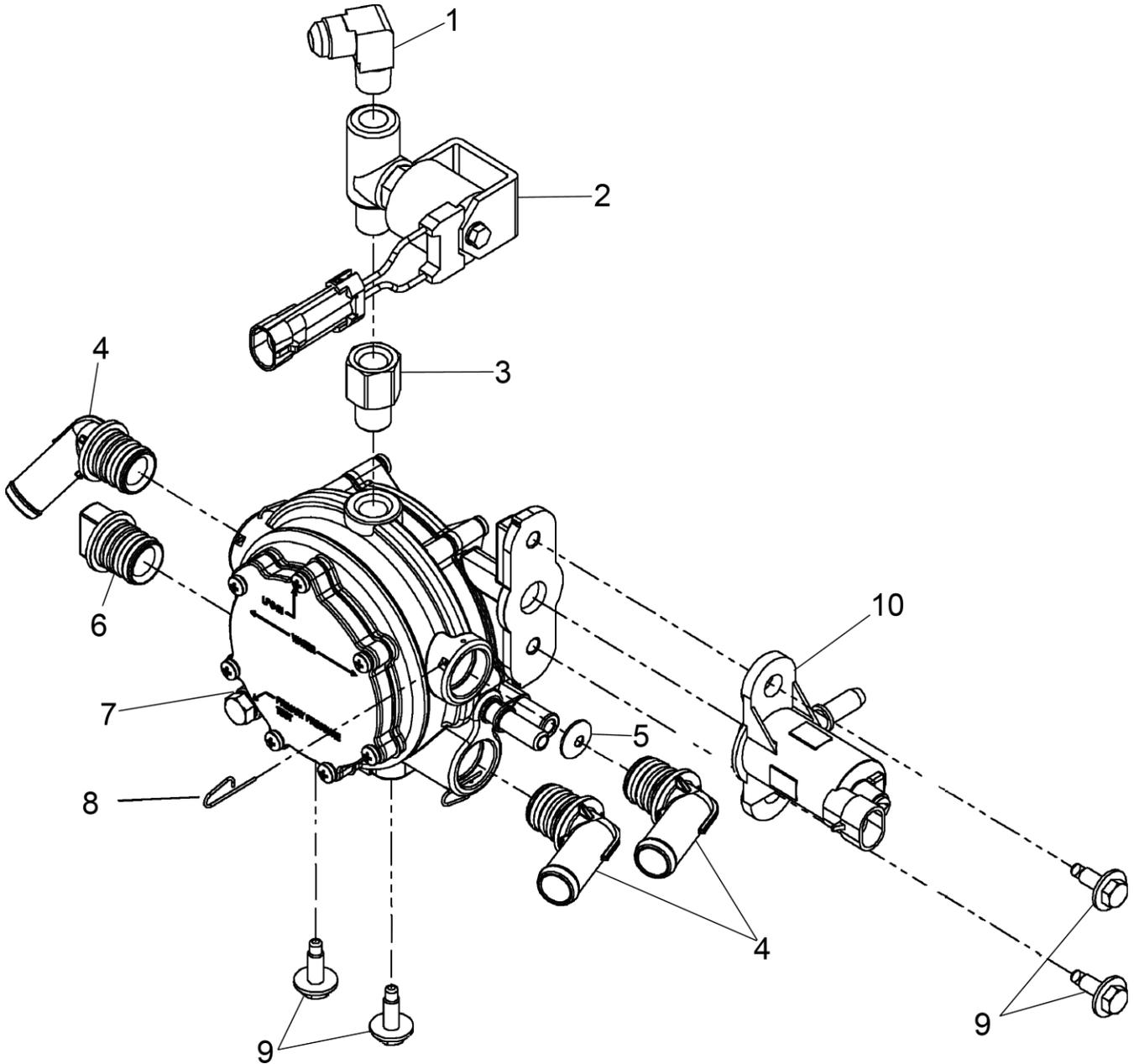
LPG MIXER AND THROTTLE BODY ASSEMBLY



LPG MIXER AND THROTTLE BODY ASSEMBLY

Item Number	Description	Qty	IMPCO Part Number
1	Assembly, Mixer FT 60	1	FT60M-30741-52-001
2	Fitting, 90 Degree	1	F4-12
3	Fitting, 70 D	1	AF4-30614
4	O-ring, Hydrogenated Nitrile	2	S3-1524-003
5	Bolts, FTV Mounting	2	S1-30283-0620
6	Valve, Fuel Trim	1	V3-30270-277
7	Adapter, Assy. FTV	1	AA3-30952-001
8	Screw, Adapt to Mixer	4	S1-30295-0516
9	O-ring, FTV to Throttle Control	1	S3-1524-004
10	Sleeve, Plastic	1	S6-30976-001
11	Control, Throttle Bosch	1	E1312100
12	Screw, TMAP	2	S1-30295-0416
13	Sensor, TMAP	1	S8-30862-001
14	Adapter, Throttle to Manifold	1	A3-30875-001
15	Bolts, Throttle Body to Adapter	2	S1-30295-0655
16	Gasket, Adapter to Manifold	1	G1-18
17	Screw, Mixer	1	S1-69
Not Shown	Fitting, ¼ Vac Nipple	1	F4-2
Not Shown	Pin, Retainer Fitting	1	P1-30559
Not Shown	Plug, Mixer	1	P3-16699-001

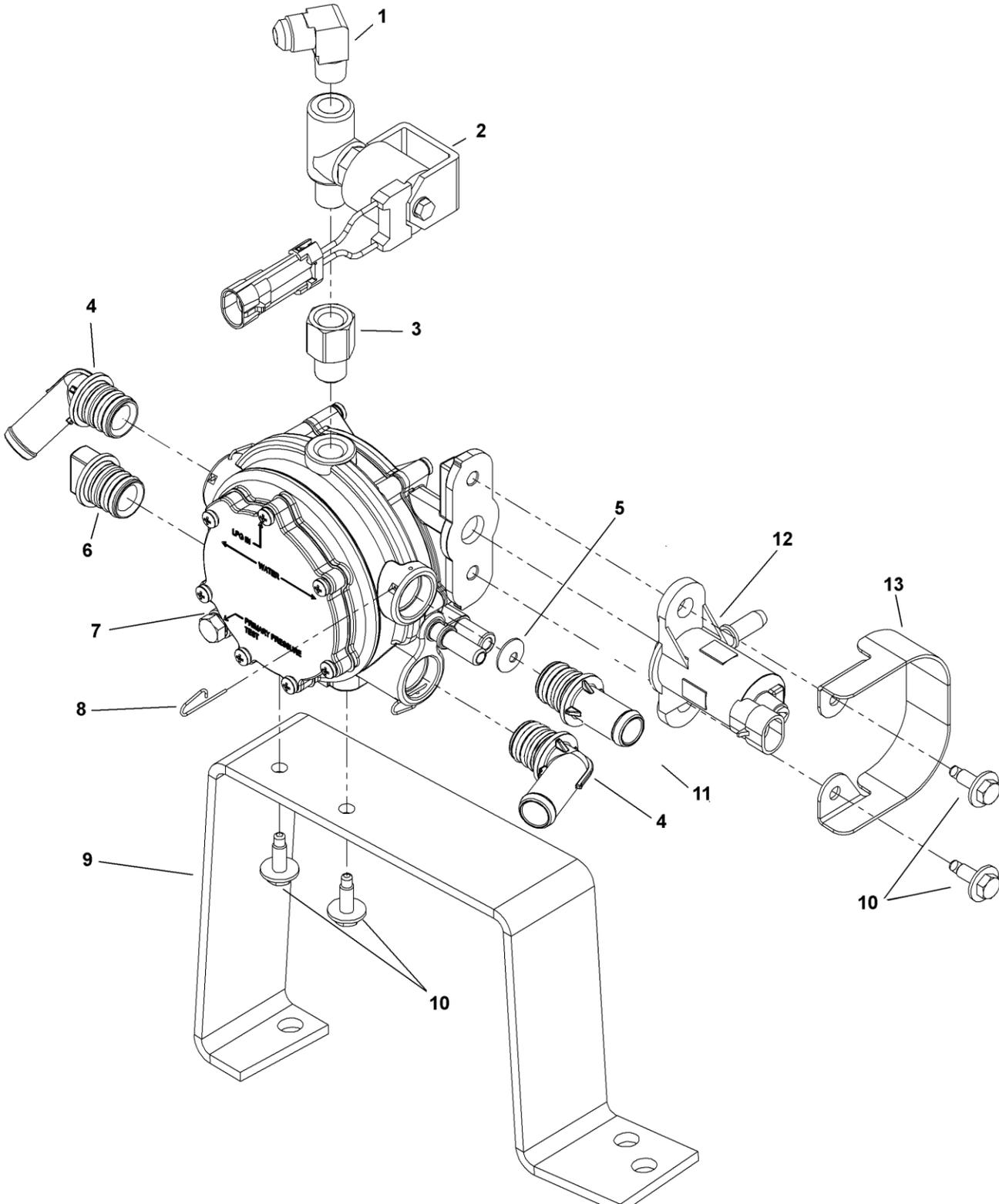
LPG REGULATOR ASSEMBLY (HHI)



LPG REGULATOR ASSEMBLY (HHI)

Item Number	Description	Qty	IMPCO Part Number
1	Fitting, 90 Degree Elbow	1	F4-25
2	Valve, Lock off Ass'y	1	ET98-30515-001
3	Fitting, Adapter ¼ NPT	1	F4-30953-001
4	Fitting, 70 Degree	3	AF4-30614
5	Jet, Coolant Restrictor	1	J1-30872-047
6	Fitting, Cap	1	AF4-30613
7	Regulator, Low Pressure	1	CS4-30772-004
8	Pin, Fitting Retainer	4	P1-30559
9	Bolt, Regulator, PTV Mnt	4	S1-30283-0620
10	Valve, Pressure Trim	1	V3-30270-277

LPG REGULATOR ASSEMBLY (MCFA)

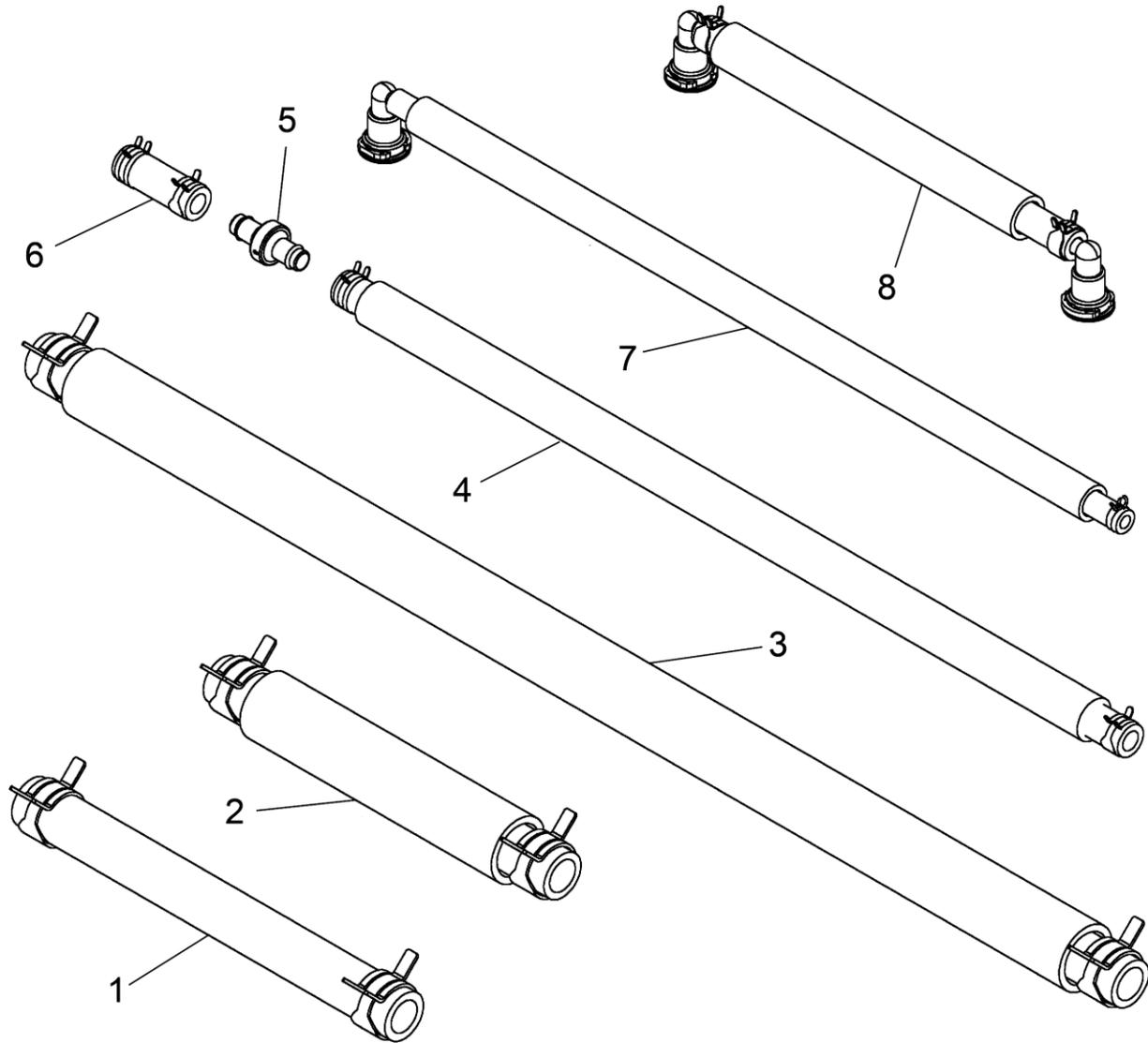




LPG REGULATOR ASSEMBLY (MCFA)

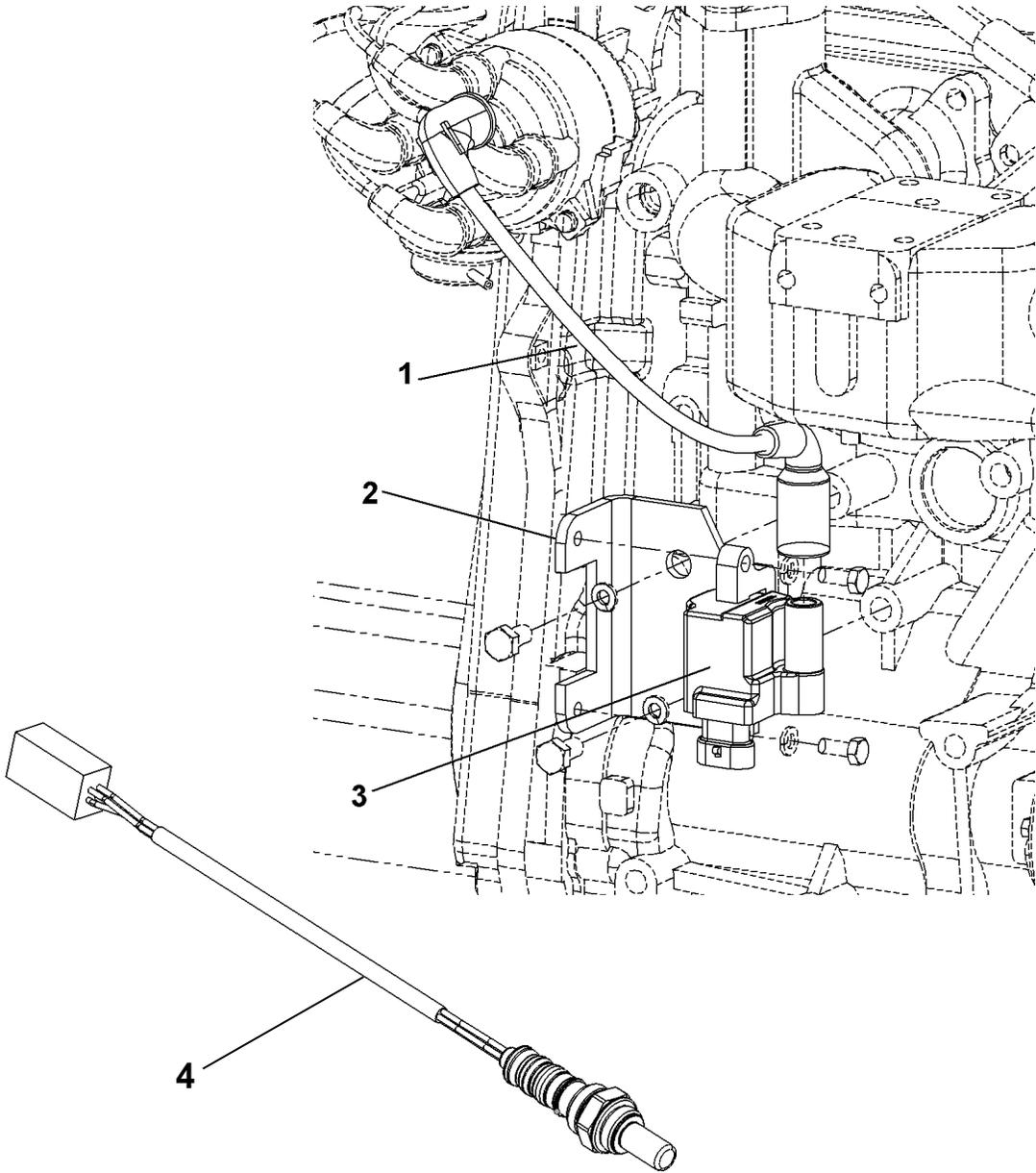
Item #	Description	Qty	IMPCO Part Number
1	Fitting, 90 Degree Elbow	1	F4-25
2	Valve, Lock off Ass'y	1	ET98-30515-001
3	Fitting, Adapter ¼ NPT	1	F4-30953-001
4	Fitting, 70 Degree	2	AF4-30614
5	Jet, Coolant Restrictor	1	J1-30872-047
6	Fitting, Cap	1	AF4-30613
7	Regulator, Low Pressure	1	CS4-30772-004
8	Pin, Fitting Retainer	4	P1-30559
9	Bracket, Regulator Mnt	1	B4-30991-001
10	Bolt, Regulator, PTV Mnt	4	S1-30283-0620
11	Fitting, Straight	1	AF4-30615
12	Valve, Pressure Trim	1	V3-30270-277
13	Guard, PTV	1	G4-30894-001

HOSES



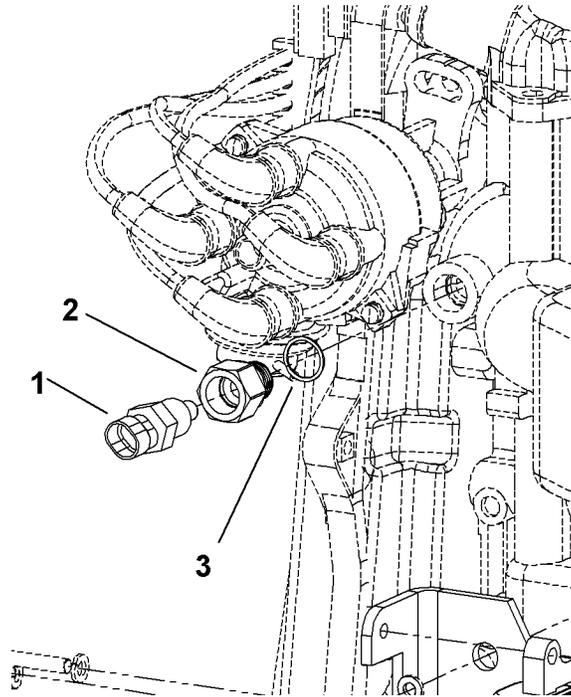
Item Number	Description	Qty	IMPCO Part Number
1	Ass'y, Hose Reg to Manif	1	AH1-30853-009
2	Assembly, Dry Gas Supply	1	AH1-30853-015
3	Ass'y, Hose Reg to w/ Pump	1	AH1-30853-006
4	Ass'y, Bal Hose Check to Reg	1	AH1-30853-013
5	Valve, Check	1	V3-30958
6	Ass'y, Bal Hose Check to Mix	1	AH1-30853-004
7	Assembly, Hose PTV	1	AH1-30852-010
8	Assembly, Hose FTV	1	AH1-30852-005

IGNITION COIL & HEGO



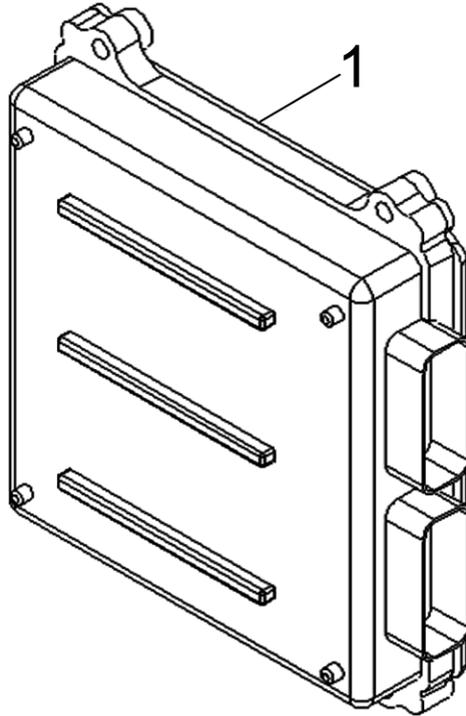
Item #	Description	Qty	Part Number	GM Part Number
1	Wire, Ignition Coil	1	7245160	
2	Bracket, Ignition Coil	1	7245130	
3	Coil, Ignition	1		12558693
4	HEGO, Pre-Catalyst	1		12559850

ENGINE COOLANT TEMPERATURE SENSOR (ECT)



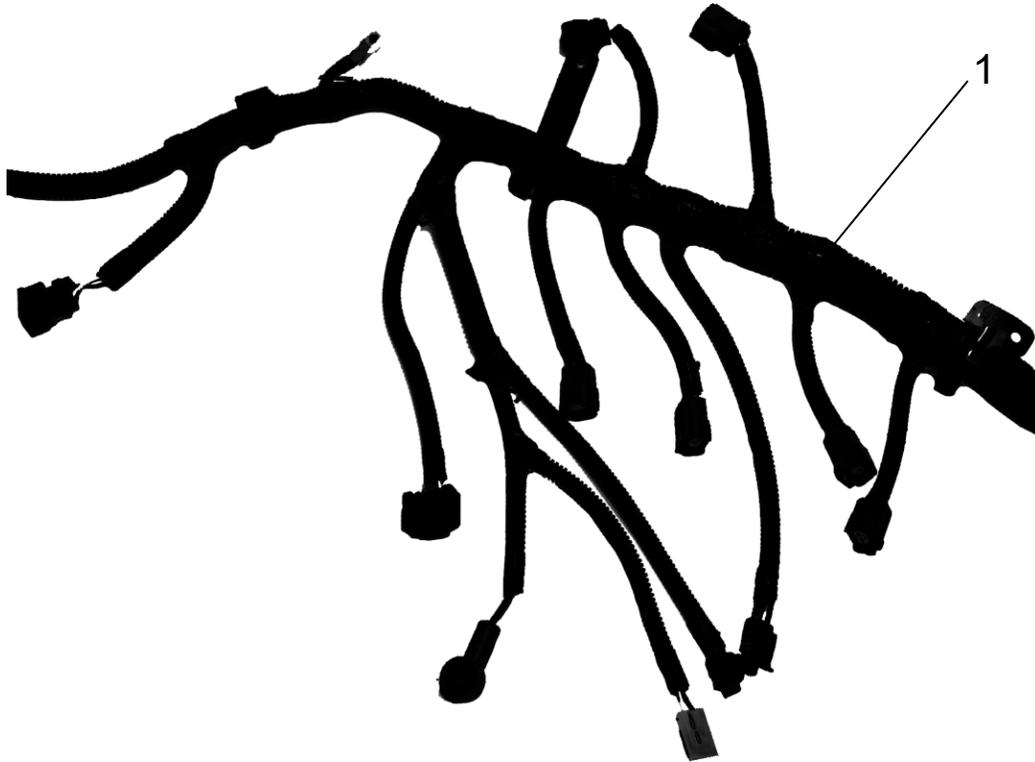
Item Number	Description	Qty	IMPCO Part Number	GM Part Number
1	Sensor, Engine Temp	1		15326386
2	Adapter, ECT	1	F4-31076-001	
3	Seal, Copper Face	1	S3-30887-002	

ENGINE CONTROL UNIT



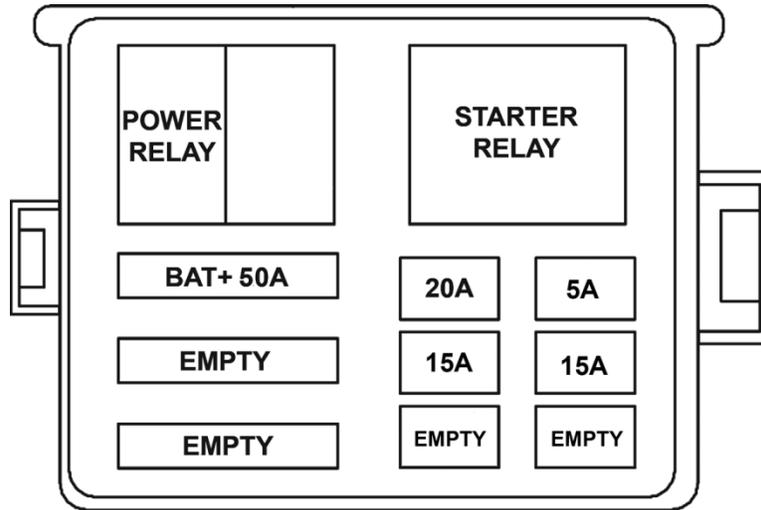
Item #	Description	Qty.	Part Number
1	NMHG/NACCO/Hyster/Yale 2067796 Cush Truck	1	0529801
	2.0L MCFA 21FN-20020		1427701
	2.0L HHI/MCFA		1427801
	2.4L MCFA 21FK-20020, 9356501200		1527701
	2.4L MCFA/HHI 21FK-20020		1527801

WIRE HARNESS ENGINE ELECTRICAL



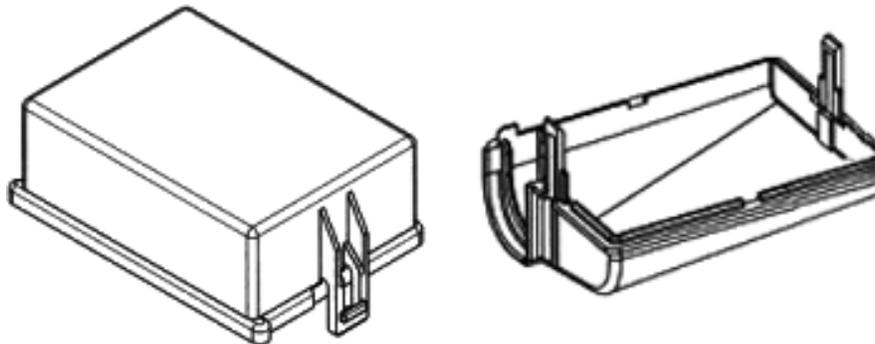
Item #	Description	Qty	Part Number
1	Harness, Engine Electrical DBW	1	E1503000

WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX



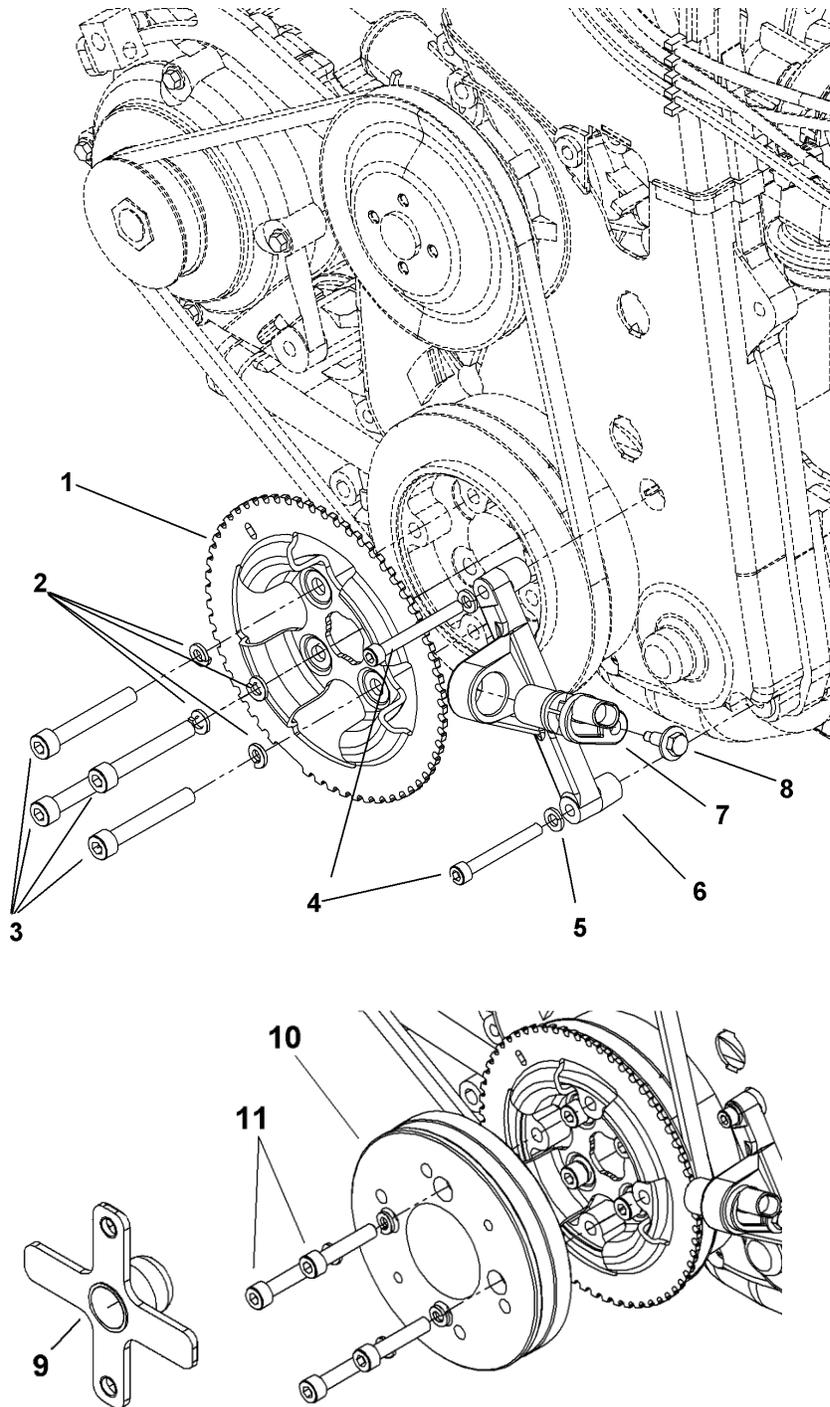
Layout may vary depending on application

Fuse Box Covers



Item #	Description	Qty	IMPCO Part Number
Power Relay	Power Relay	1	885014
Starter Relay	Starter Relay	1	7381290
Alternator 50A Fuse	50A Maxi Fuse	1	7381280
5A Fuse	5A Minifuse	1	7380660
15A Fuse	15A Minifuse	1	7381220
20A Fuse	20A Minifuse	1	7381270
	Fuse Box Cover (Top) w/Label	1	E-6131-1
	Fuse Box Cover (Top) w/o Label	1	E-6131
	Fuse Box Cover (Bottom)	1	E-6132

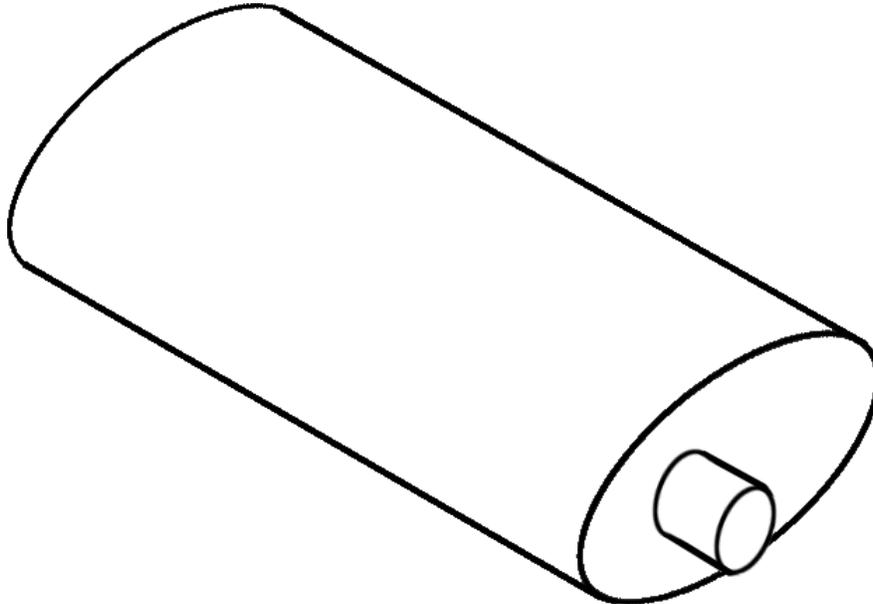
FRONT TIMING WHEEL ASSEMBLY



FRONT TIMING WHEEL ASSEMBLY

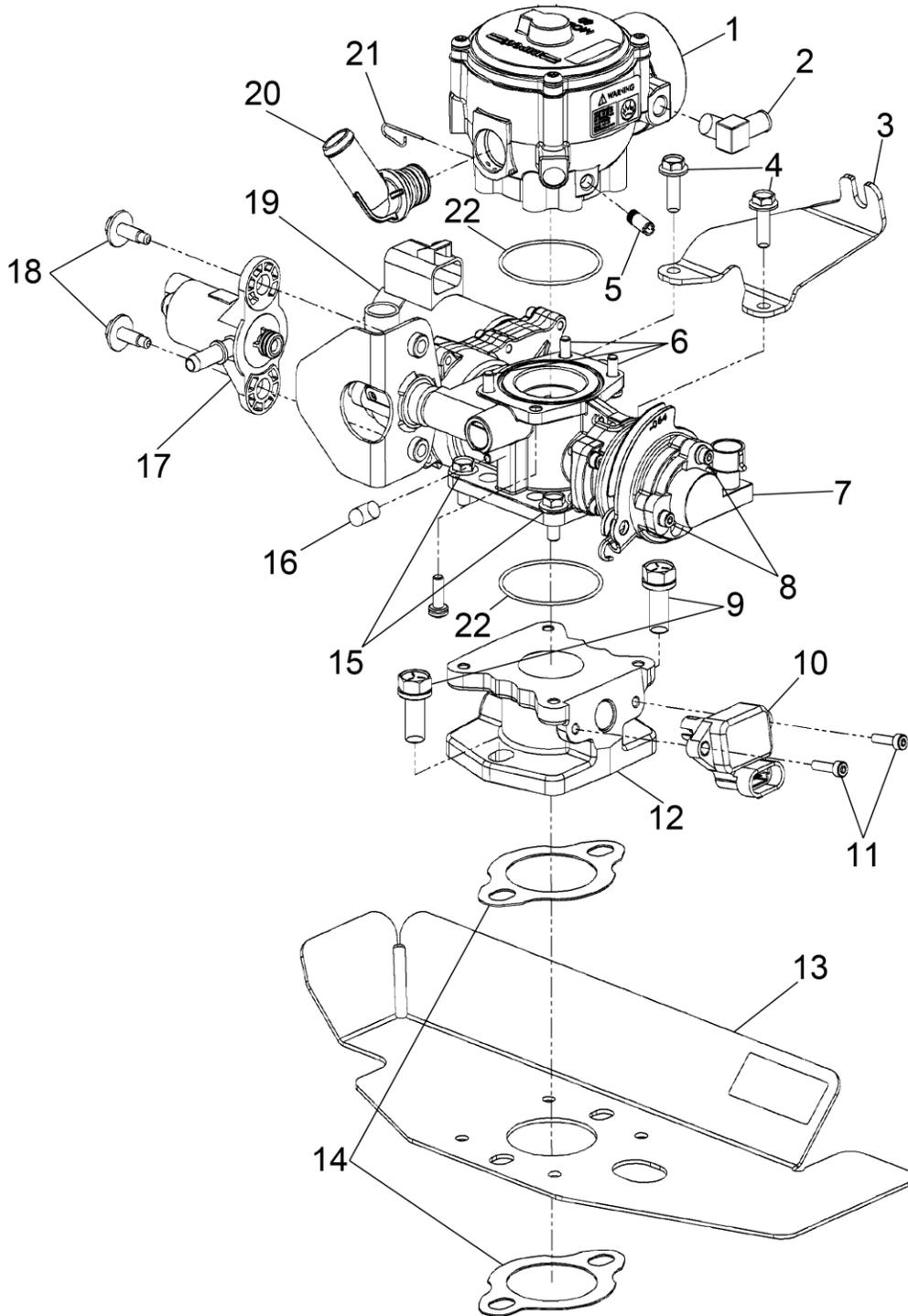
Item Number	Description	Qty	IMPCO Part Number	GM Part Number
1	Wheel, Timing	1	7180500	
2	Washer, Split Lock M8	4	W1-31135-008	
3	Bolt, Tmg wheel to Pulley	4	S1-30295-0855	
4	Bolt, Sensor Bracket	2	S1-30295-0650	
5	Washer, Split Lock M6	2	W1-1988-001	
6	Bracket Sensor Timing	1	NSS	
7	Sensor, Crankshaft	1		12567712
8	Bolt, Crank Sensor	1	S1-30283-0620	
9	Tool, install Tmg Wheel	1	7180501	
10	Pulley, Fan 4G6X HHI	1	7071820	
11	Screw, SCK HD	4	S1-30295-0840	

THREE WAY CATALYTIC MUFFLER



Description	Application	Qty	Part Number
Muffler, Three Catalytic LPG	HLFC15-5	1	7332500
Muffler, Three Catalytic LPG	HLF15-5	1	7332510
Muffler, Three Catalytic LPG	HLFC18-5	1	7332500
Muffler, Three Catalytic LPG	HLF18-5	1	7332510
Muffler, Three Catalytic LPG	HLF20-5	1	7332490
Muffler, Three Catalytic LPG	HLF25-5	1	7332490
Muffler, Three Catalytic LPG	HLF30-5	1	7332490
Muffler, Three Catalytic LPG	MMC 2 & 3 Ton	1	7332410
Muffler, Three Catalytic LPG	MMC 1 Ton	1	7332420

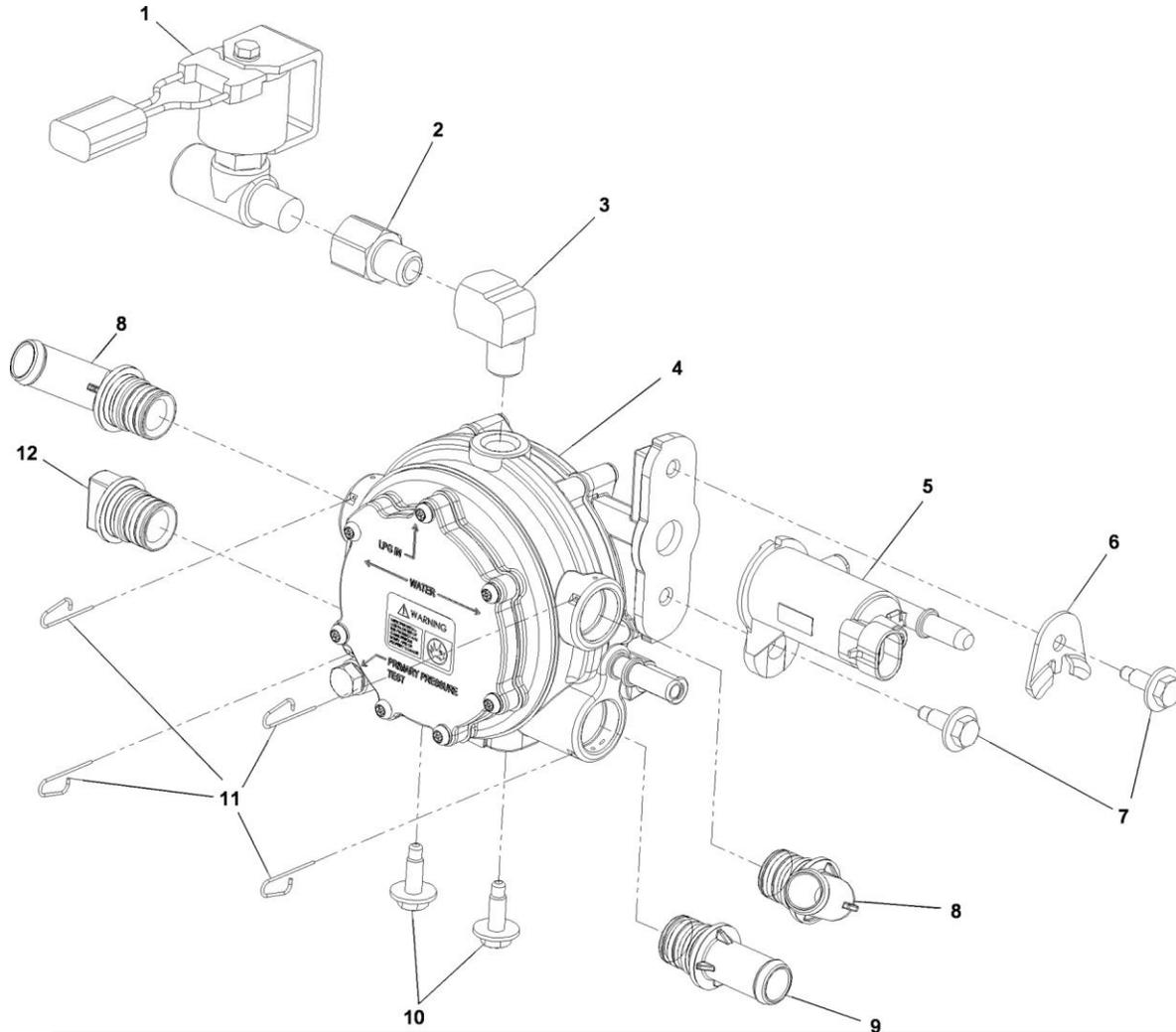
3.0L LPG Lift Trucks THROTTLE BODY & MIXER



THROTTLE BODY & MIXER

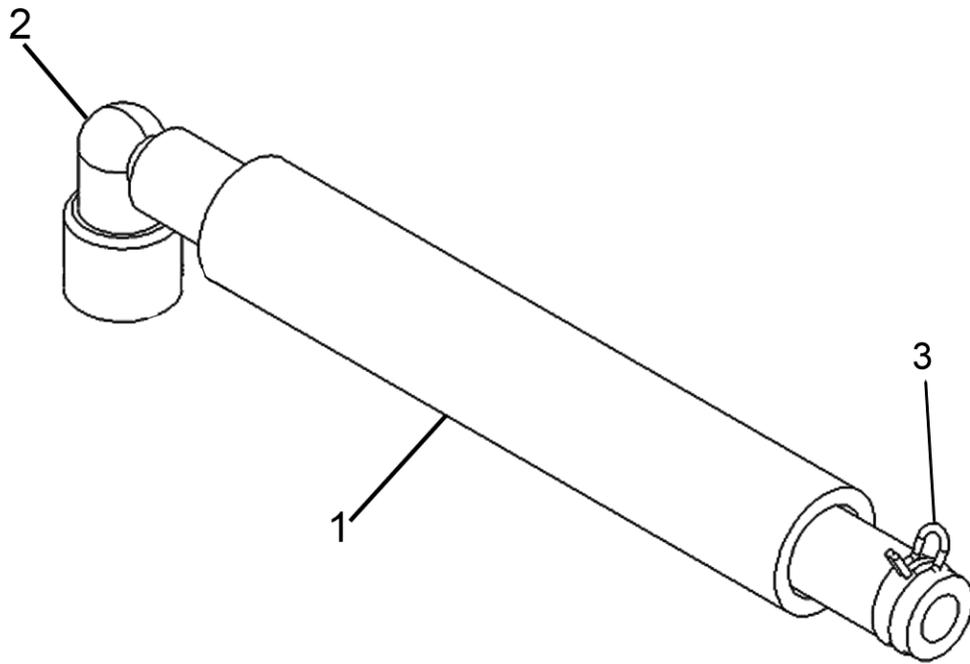
Item#	Description	Qty	Part Number
1	Assembly, Mixer FT 60	1	FT60M-30741-52-002
2	Fitting, 90 Degree	1	F4-12
3	Bracket, Throttle Cable	1	B4-30867-001
4	Bolts, Throttle Body to Adapter	2	S1-30871-02-0616
5	Fitting, Brass Vacuum	1	F4-2
6	Screws, Throttle Body to Mixer Retaining	4	S1-30047-001
7	Sensor, Foot Pedal Position (FPP)	1	S8-30237-001
8	Screw, Retaining FPP	2	S1-30295-0416
9	Bolts, Adapter to Manifold	2	S1-34
10	Sensor TMAP	1	S8-30862-001
11	Screws, TMAP Retaining	2	S1-30295-0416
12	Adapter, Throttle Body to Manifold	1	A3-30323-001
13	Shield, Heat	1	G4-30978-001
14	Gasket, Manifold	2	G1-19
15	Bolts, Throttle Body to Adapter	2	S1-30871-02-0616
16	Cap, Vacuum	1	C2-30500-002
17	Valve, FTV	1	V3-30270-277
18	Bolts FTV Retaining	2	S1-30283-0620
19	Assembly, Throttle Body Drive By Cable	1	ATGC-30312-32-25-64
20	Fitting, Mixer Inlet	1	AF4-30614
21	Pin, Fitting Retaining	1	P1-30559
22	O-ring, Throttle Body	2	S3-1524-003
23	Sensor Throttle Position (TPS)	1	S8-30703

LPG REGULATOR ASSEMBLY



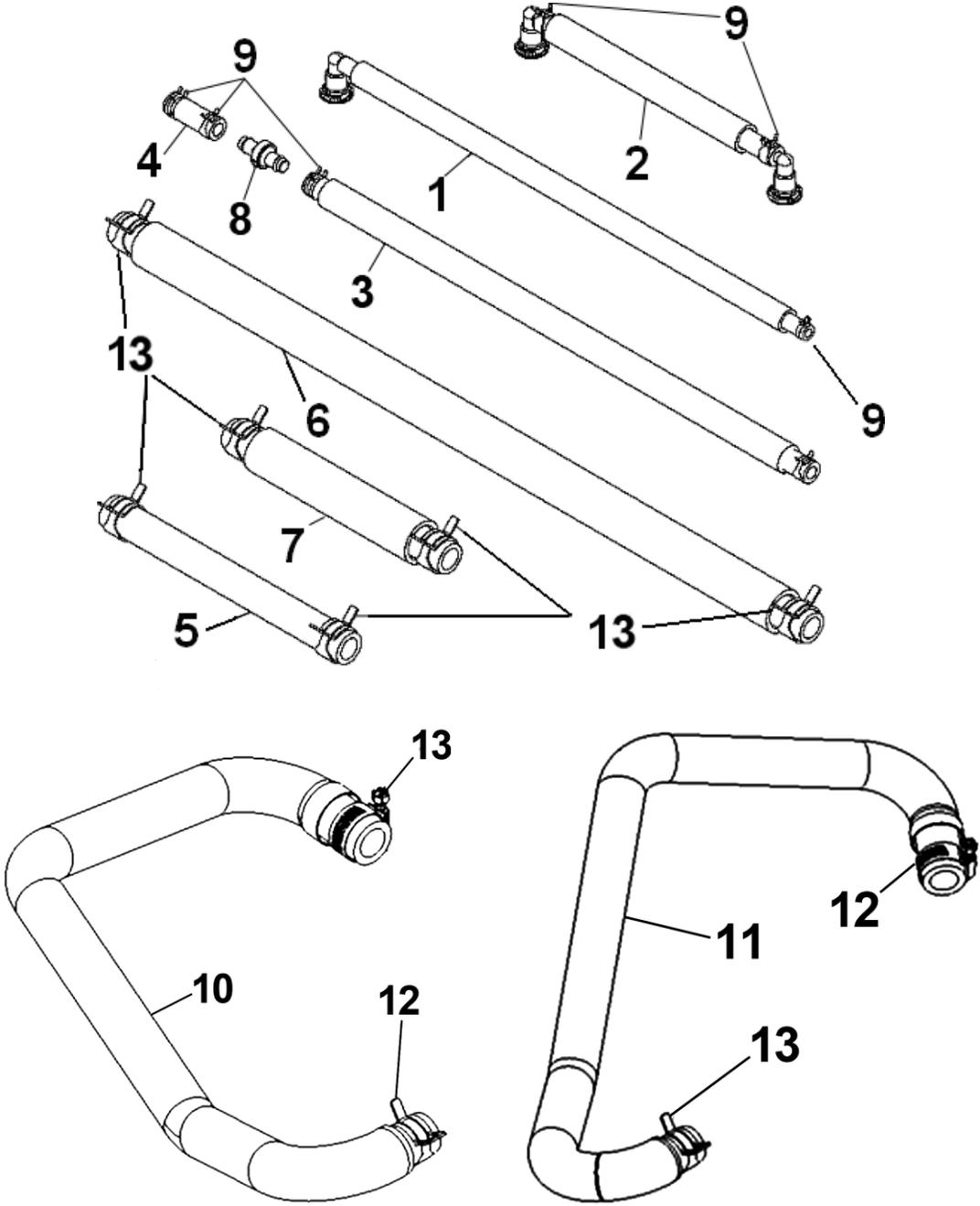
Item #	Description	Qty	Part Number
1	Assembly Lock Off 12 V	1	ET98-30515-001
2	Fitting Brass Adapter	1	F4-30953-001
3	Fitting 90 Degree Elbow	1	F4-14184-002
4	Assembly Regulator	1	CS4-30772-004
5	Valve, Pressure Trim	1	V3-30272-279
6	Clamp, PTV Retaining	1	C2-30267-001
7	Bolt, PTV Retaining	2	S1-30283-0620
8	Fitting, Coolant	2	AF4-30614
9	Fitting Vapor Outlet	1	AF4-30615
10	Bolts, Mounting	2	S1-30283-0620
11	Pin, Retaining	4	P1-30559
12	Cap, Regulator	1	AF4-30613
13	Jet, Coolant Restrictor	1	J1-30872-047

PCV HOSE ASSEMBLY



Item #	Description	Qty	Part Number
1	Hose Assembly, PCV	1	AH1-30853-019
2	Valve, PCV	1	6487779
3	Clamp Hose PCV	1	C2-16664-1

HOSE ASSEMBLIES: COOLANT / VACUUM / FUEL / PCV

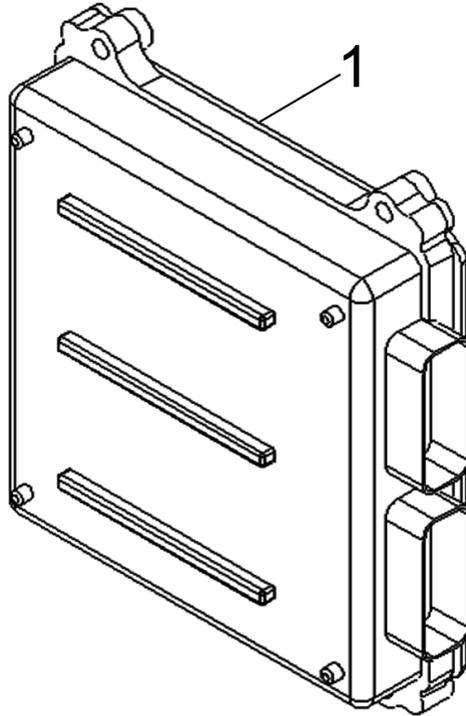




HOSE ASSEMBLIES: COOLANT / VACUUM / FUEL / PCV

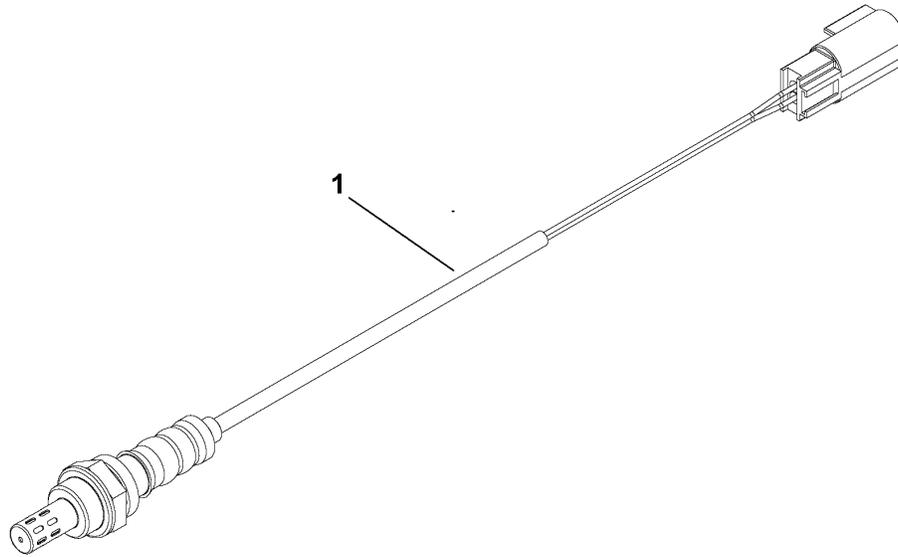
Item#	Description	Qty	Part Number
1	Assembly, Hose PTV	1	AH1-30852-007
2	Assembly, Hose FTV	1	AH1-30852-001
3	Assembly, Hose Balance line Long	1	AH1-30853-004
4	Assembly, Balance Short	1	AH1-30853-001
5	Assembly, Dry Gas Supply	1	AH1-30853-017
6	Assembly, Hose Coolant 750MM	1	NSS
7	Assembly, Hose Coolant 450 MM	1	AH1-30853-008
8	Valve check Balance Line	1	V3-30958
9	Clamp, hose	2	C2-16664-1
10	Ass'y Hose LPR Return Molded	1	AH1-30884-001
11	Ass'y, Hose LPG Supply Molded	1	AH1-30885-001
12	Clamp, Hose Worm	1	C2-14106-006
13	Clamp, Hose Pinch	1	C2-16664-2

ENGINE CONTROL MODULE



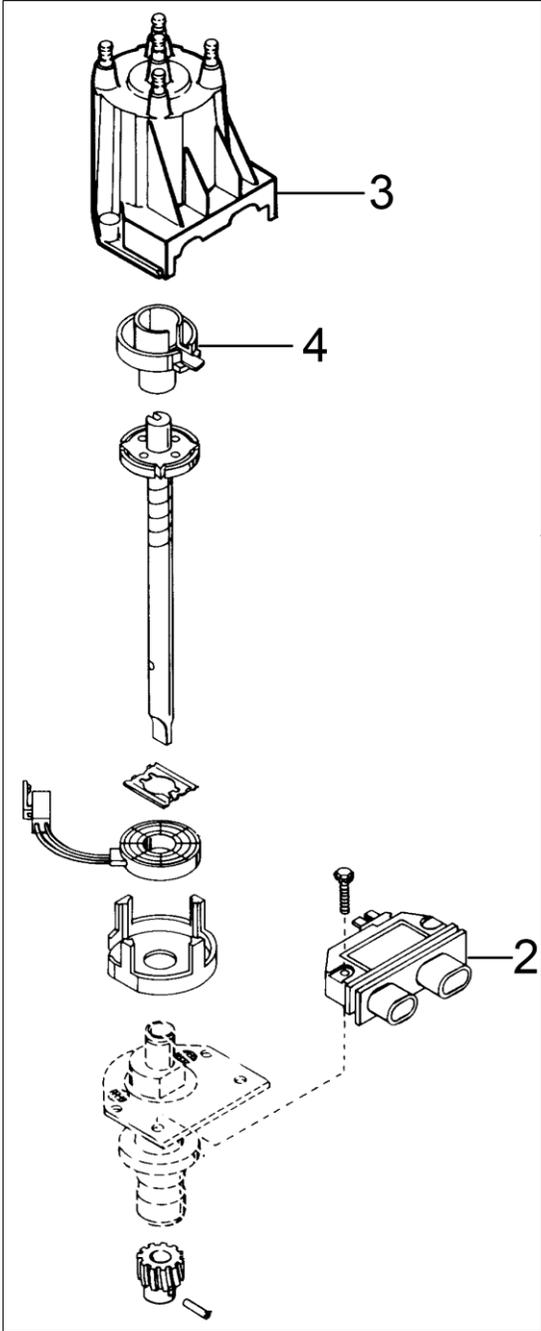
Item#	Description	Qty	Part Number
1	Tennant	1	0424951
	Tailift		0528701
	NMHG/NACCO/Hyster/Yale Cush Truck 580048986, 8525227		0528801
	NMHG/NACCO/Hyster/Yale 2076083		0528802
	NMHG/NACCO/Hyster/Yale 2067796 Cush Truck		0529801
	NMHG/NACCO/Hyster/Yale Cush 2076149; Pneumatic 2076083		0529802

HEATED EXHAUST GAS OXYGEN SENSOR



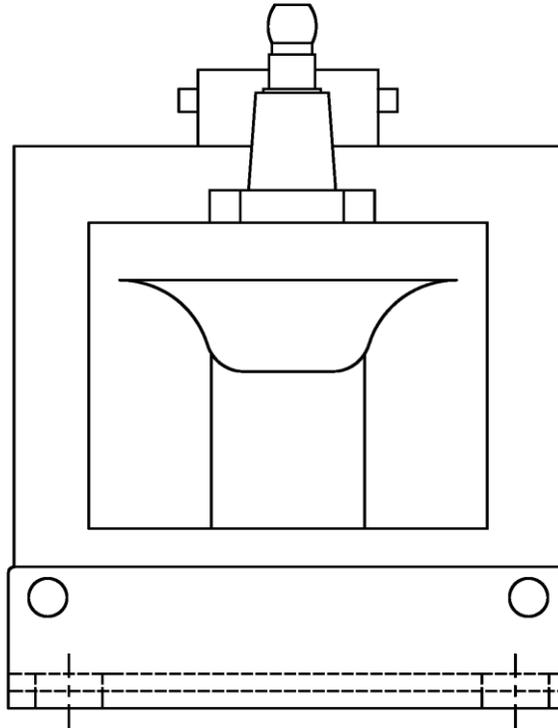
Item#	Description	Qty	GM Part Number
1	Sensor, Heated Exhaust Gas Oxygen	1	12559850

DISTRIBUTOR

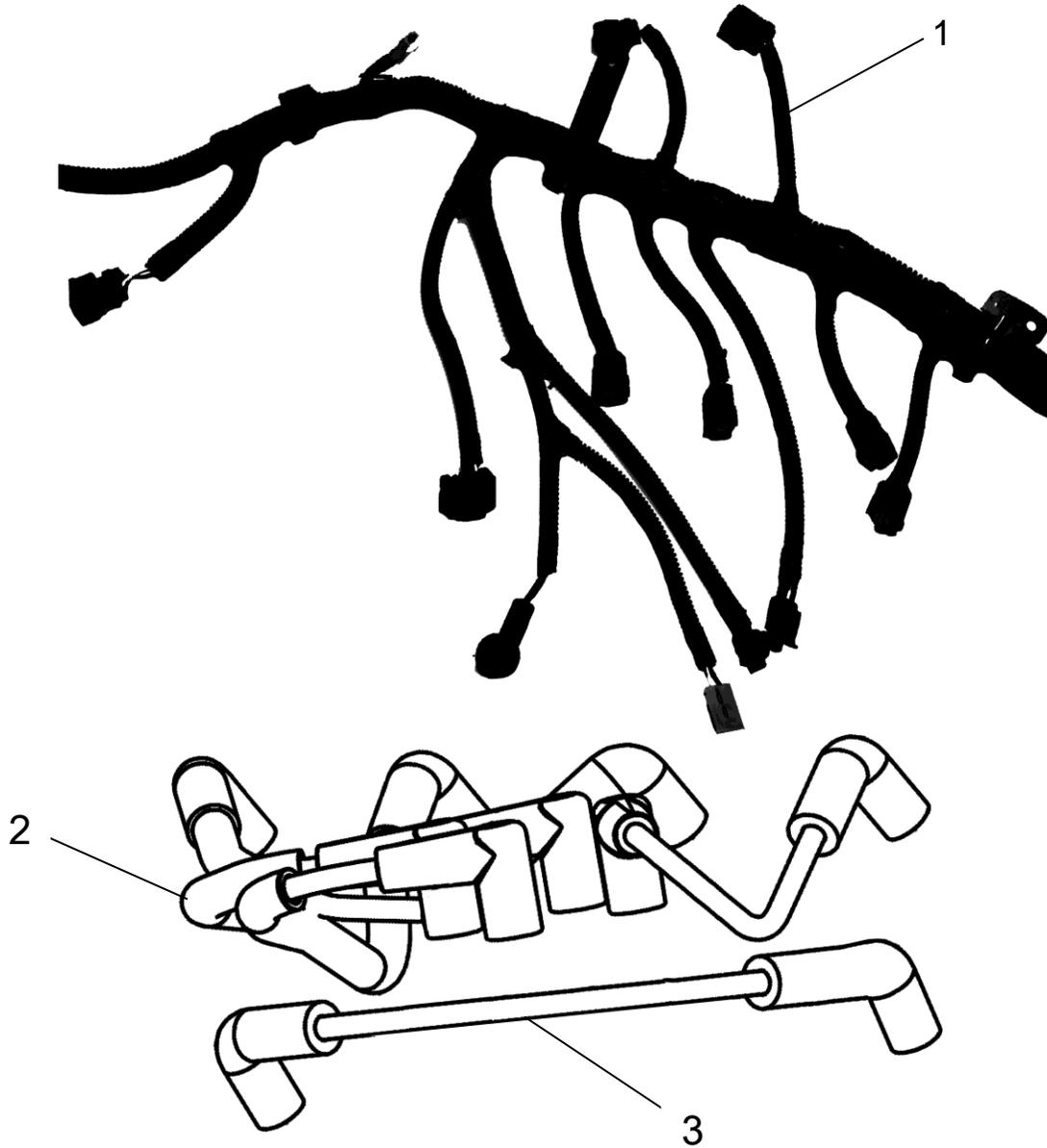


Item#	Description	Qty	GM Part Number
1	Distributor Ass'y (Complete)	1	1103782
2	Module, Ignition Coil	1	10483099
3	Cap Distributor	1	10476237
4	Rotor, Distributor	1	10467546

IGNITION COIL

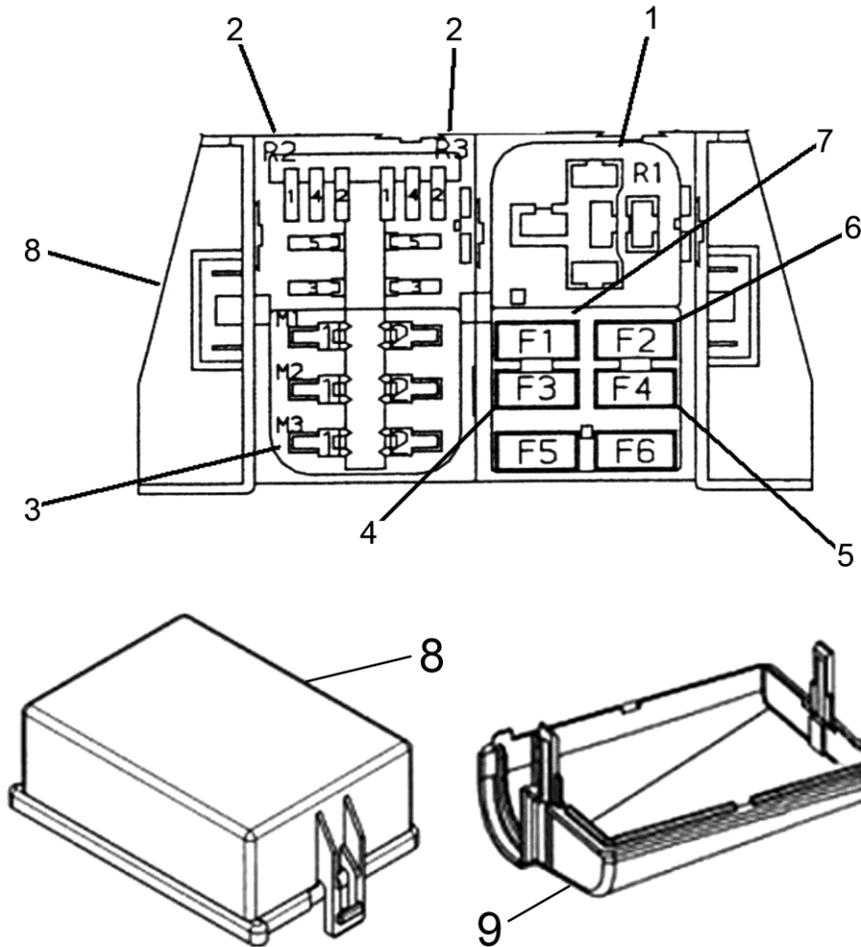


Item#	Description	Qty	GM Part Number
1	Ignition Coil	1	01115491

WIRE HARNESS ENGINE ELECTRICAL


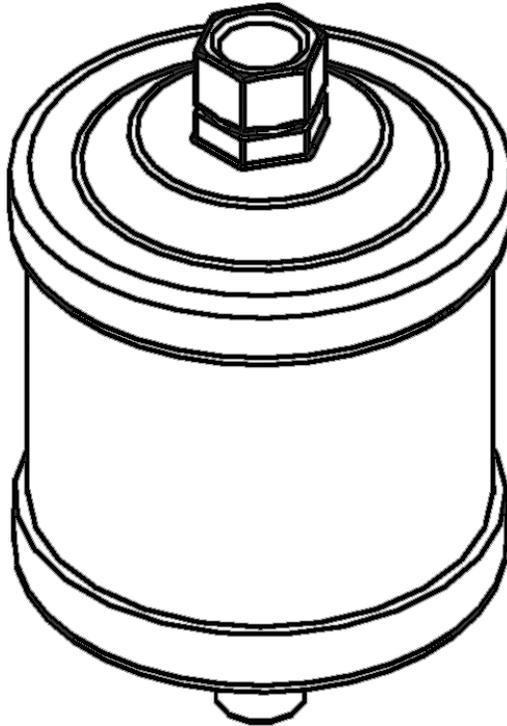
Item #	Description	Qty	Part Number	GM Part Number
1	Harness, Engine Electrical	1	E1350020	
Not Shown	Harness, LPG Jumper Harness	1	E1478100	
2	Spark Plug Wire Set (Without Ignition Coil Wire)	1		93430078
3	Ignition Coil Wire	1		93430079

FUSE BOX



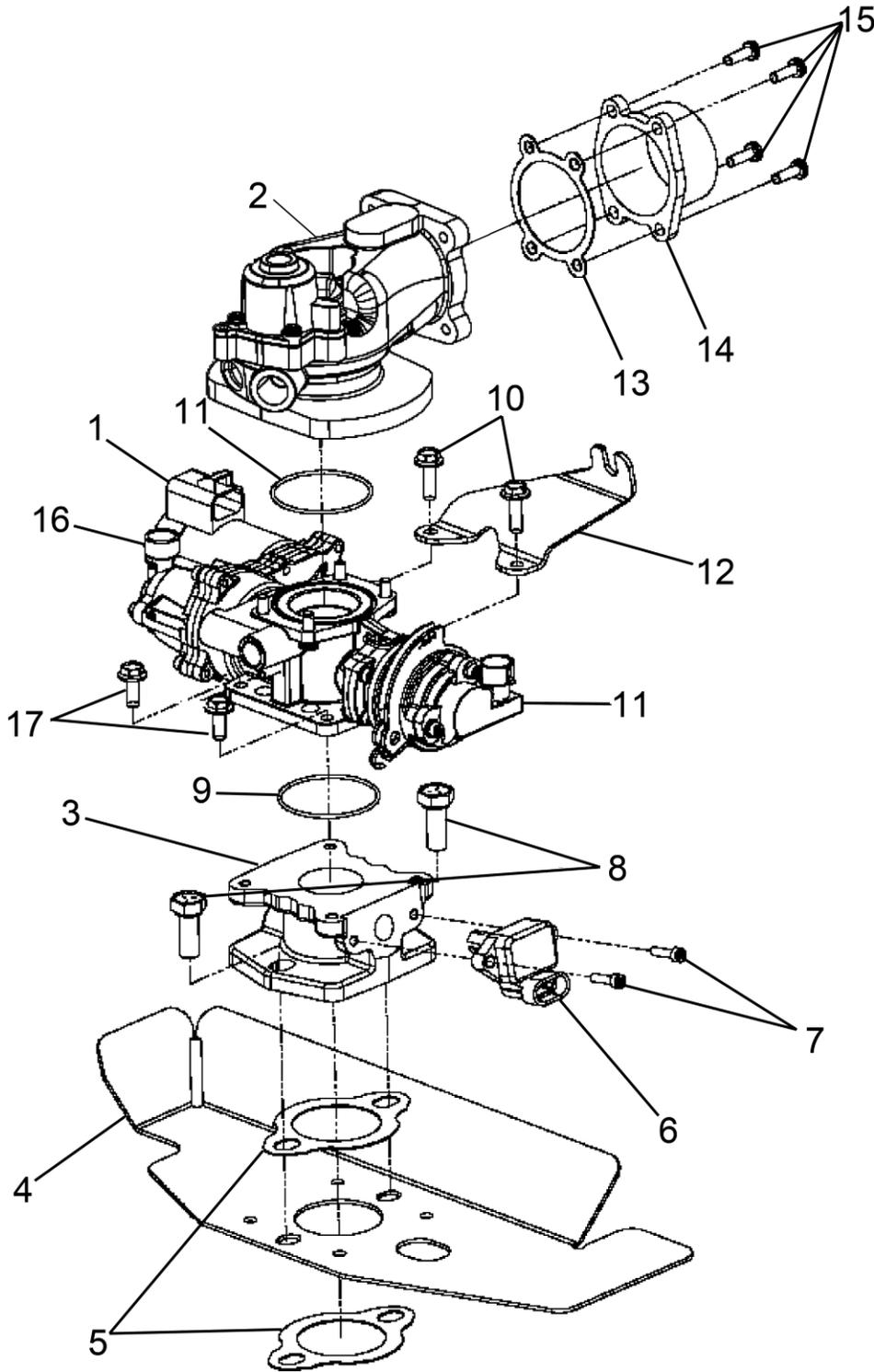
Item #	Description	Qty	Part #
1	Relay, Starter 40/30 A	1	7381290
2	Relay, Power & Fuel Pump	2	885014
3	Fuse, Maxi 50 A	1	7381280
4	Fuse, 15 A	1	7381220
5	Fuse, 15 A	1	7381220
6	Fuse, 5 A	1	7380660
7	Fuse 20 A	1	7381270
8	Fuse Box Cover (Top) w/o Label	1	E-6131
9	Fuse Box Cover (Bottom)	1	E-6132
Not Shown	Label GM Engines	1	7060720

FUEL FILTER ASSEMBLY



Item #	Description	Qty	Part Number
1	Filter, LPG Assembly	1	F1-30869-001

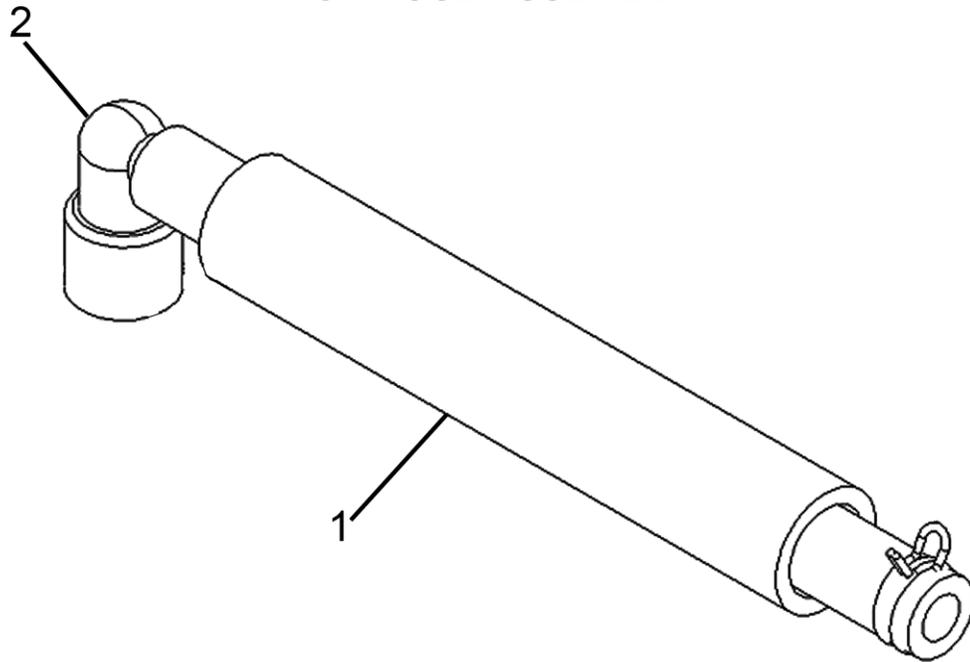
3.0L Gasoline Lift Trucks THROTTLE BODY



THROTTLE BODY

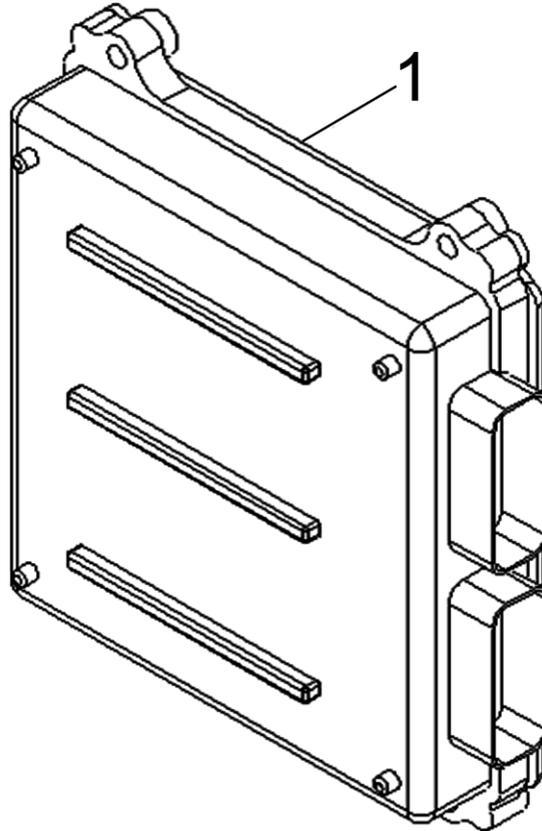
Item#	Description	Qty	Part Number
1	Assembly Throttle Body Injector assembly with DBC throttle control complete	1	ATGN-30312-32-25-64
2	Assembly, TBI Assembly	1	(E1422003) w/o Sensor Mtg
3	Adapter, Throttle Control assembly to Manifold	1	A3-30323-001
4	Shield, Heat	1	G4-30978-001
5	Gasket, 2 Bolt Manifold	2	G1-19
6	Assembly, TMAP	1	S8-30862-001
7	Screws, TMAP retaining	2	S1-30295-0416
8	Bolts Retaining, Throttle Assembly to Manifold	2	S1-34
9	O-ring, Throttle Control seals	2	S3-1524-003
10	Bolts Retaining, Throttle Control Assembly to Adapter	2	S1-30871-02-0620
11	Sensor, Foot Pedal Position FPP	1	S8-30237-001
12	Bracket, Throttle Cable	1	B4-30867-001
13	Gasket, Air Inlet to TBI Adapter	1	G1-11
14	Inlet, Air	1	A3-29-1
15	Screws Retaining, Air Inlet to Adapter	4	S1-30047-001
16	Sensor Throttle position (TPS)	1	S8-30703
17	Bolts Retaining, Throttle Control Assembly to Adapter	2	S1-30871-02-0616

PCV HOSE ASSEMBLY



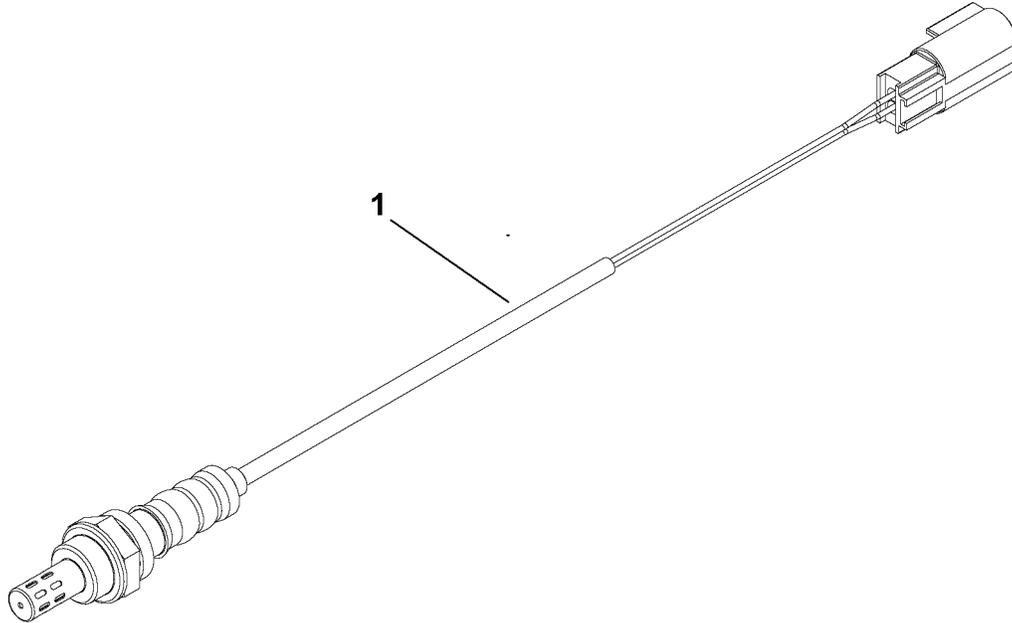
Item #	Description	Qty	Part Number	GM Part Number
1	Hose Assembly, PCV	1	AH1-30853-019	
2	Valve, PCV	1		6487779

ENGINE CONTROL MODULE



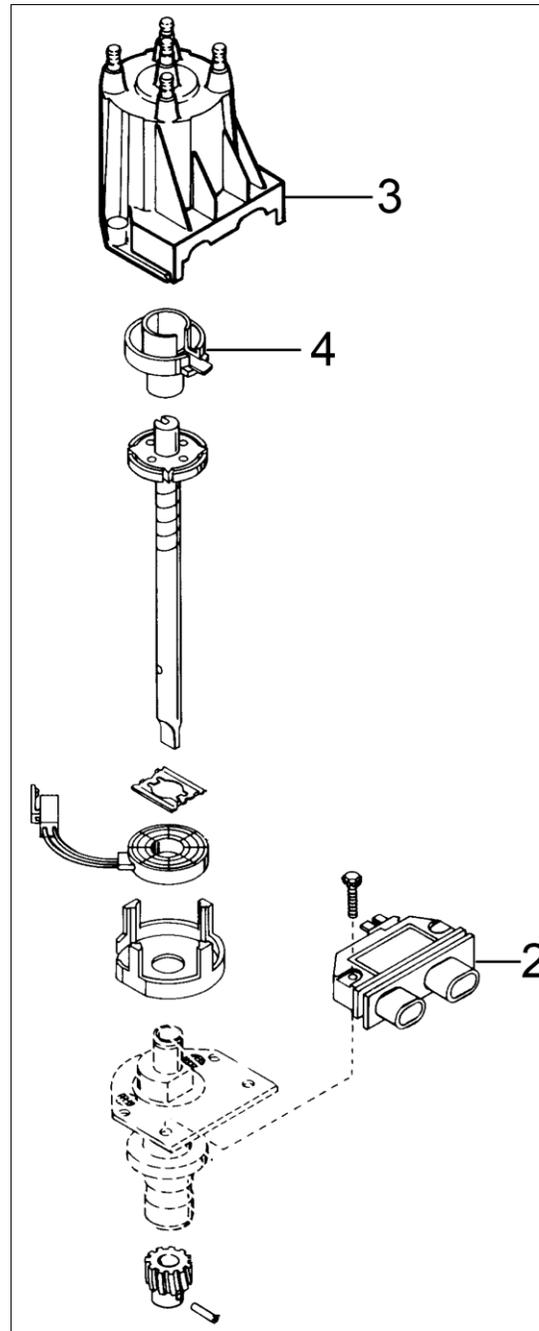
Item#	Description	Qty	Part Number
1	Tennant	1	0424951
	Tailift		0528701
	NMHG/NACCO/Hyster/Yale Cush Truck 580048986, 8525227		0528801
	NMHG/NACCO/Hyster/Yale 2076083		0528802
	NMHG/NACCO/Hyster/Yale 2067796 Cush Truck		0529801
	NMHG/NACCO/Hyster/Yale Cush 2076149; Pneumatic 2076083		0529802

HEATED EXHAUST GAS OXYGEN SENSOR



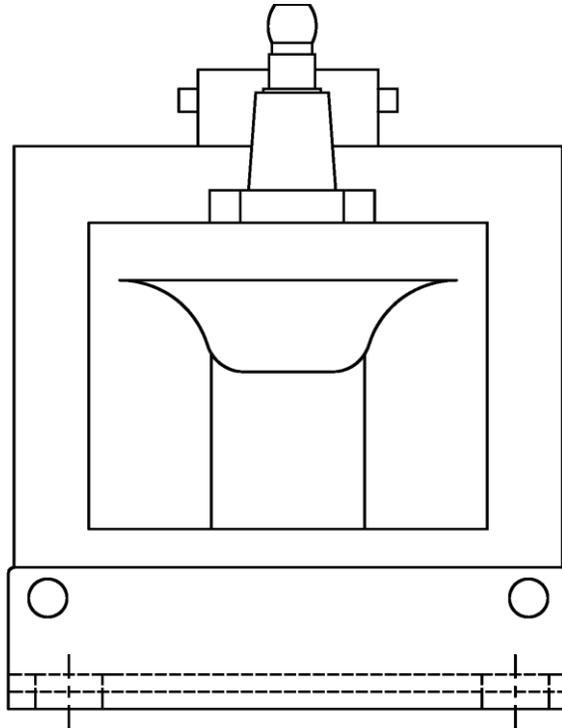
Item#	Description	Qty	GM Part Number
1	Sensor, Heated Exhaust Gas Oxygen	1	12559850

DISTRIBUTOR

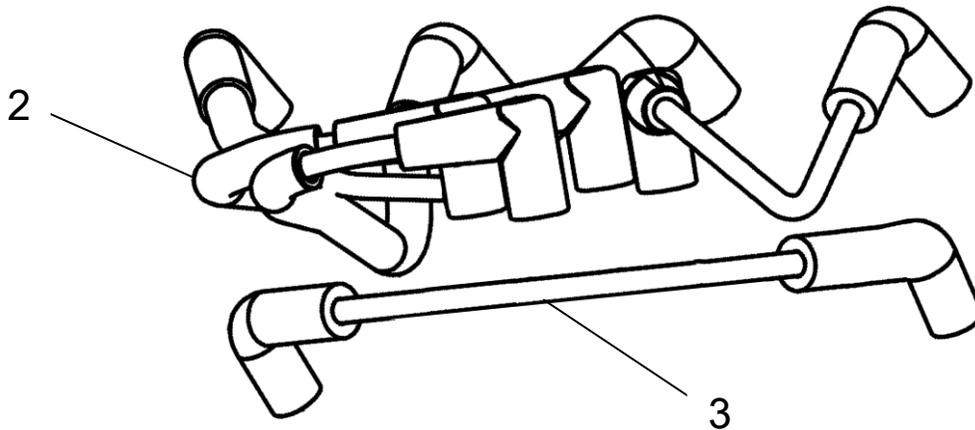
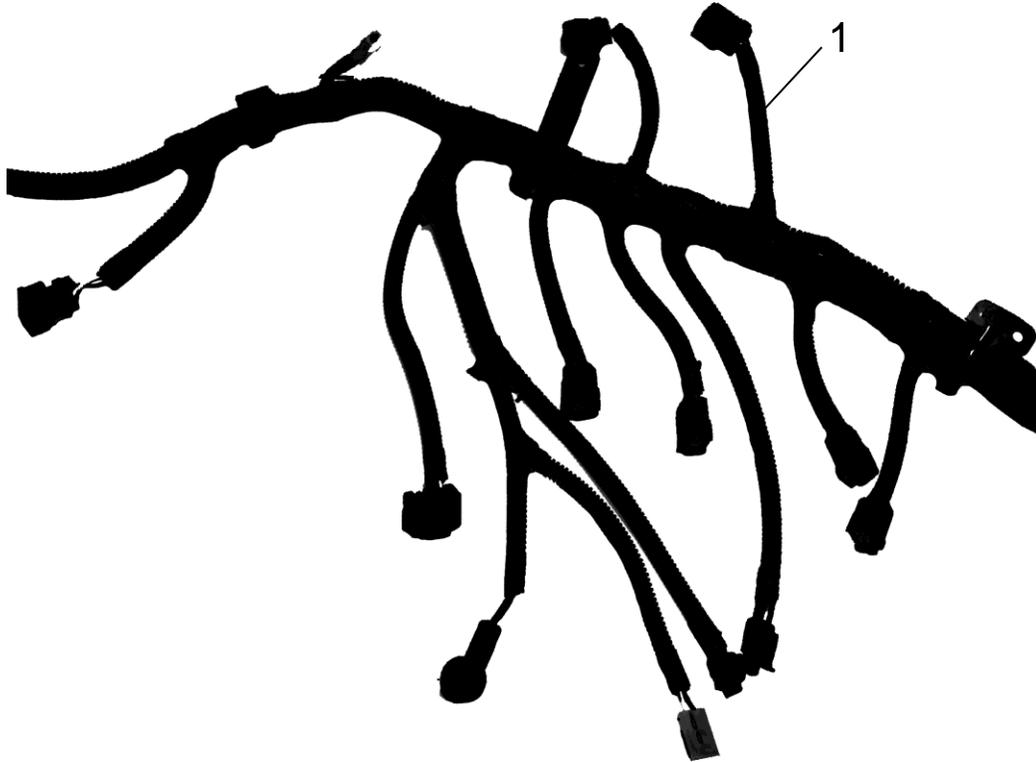


Item#	Description	Qty	GM Part Number
1	Distributor Ass'y (Complete)	1	1103782
2	Module, Ignition Coil	1	10483099
3	Cap Distributor	1	10476237
4	Rotor, Distributor	1	10467546

IGNITION COIL

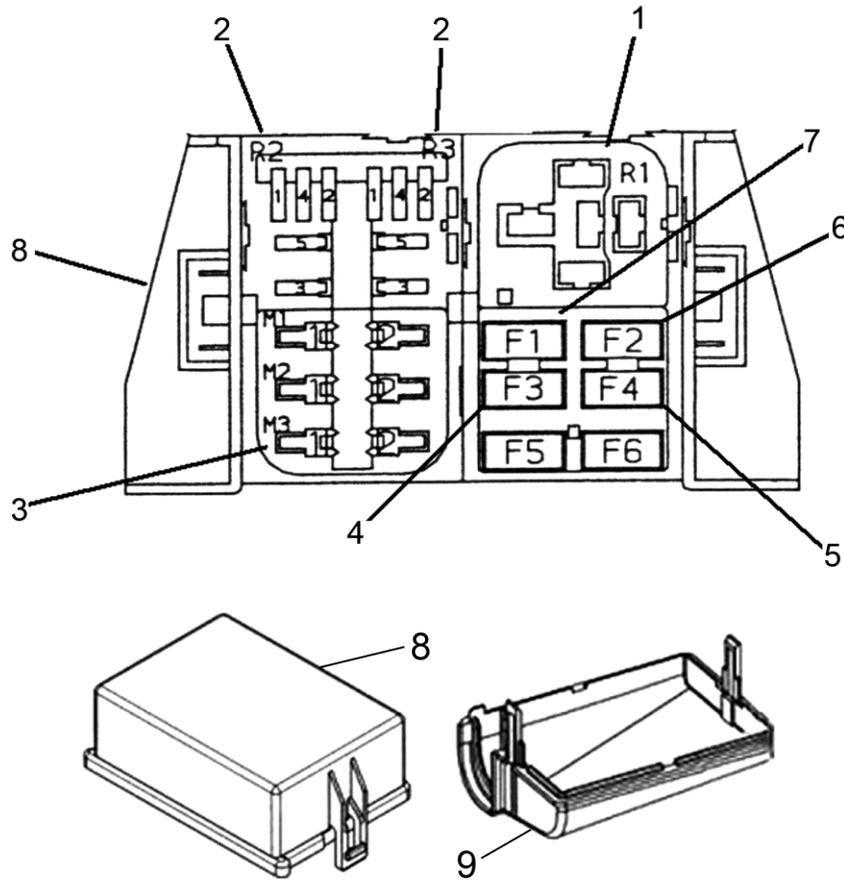


Item#	Description	Qty	GM Part Number
1	Ignition Coil	1	01115491

WIRE HARNESS ENGINE ELECTRICAL


Item #	Description	Qty	Part Number	GM Part Number
1	Harness, Engine Electrical	1	E1350020	
Not Shown	Harness, Gas Injector Jumper	1	E1477100	
2	Spark Plug Wire Set (Without Ignition Coil Wire)	1		93430078
3	Ignition Coil Wire	1		93430079

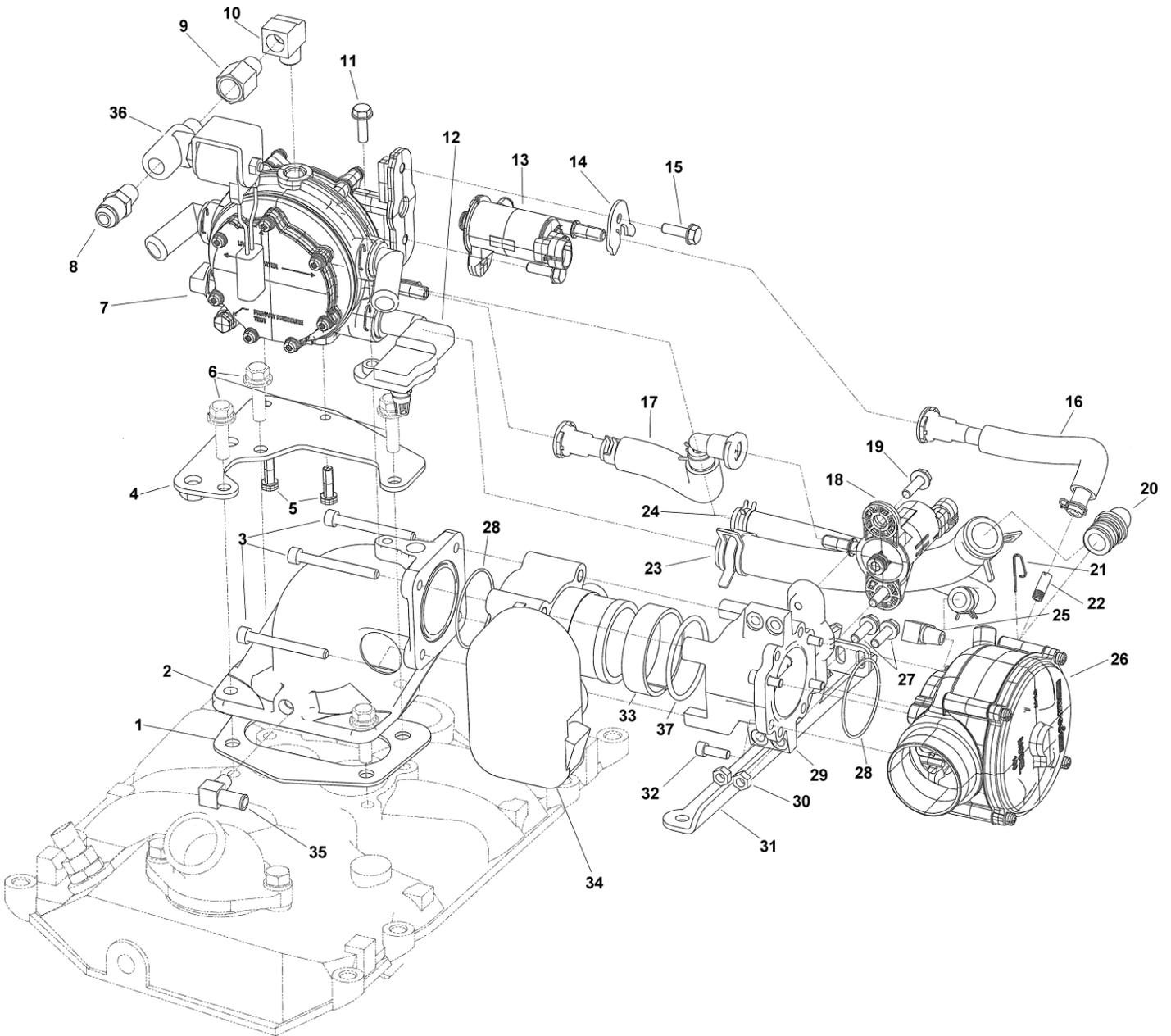
FUSE BOX



Item #	Description	Qty	Part #
1	Relay, Starter 40/30 A	1	7381290
2	Relay, Power & Fuel Pump	2	885014
3	Fuse, Maxi 50 A	1	7381280
4	Fuse, 15 A	1	7381220
5	Fuse, 15 A	1	7381220
6	Fuse, 5 A	1	7380660
7	Fuse 20 A	1	7381270
8	Fuse Box Cover (Top) w/o Label	1	E-6131
9	Fuse Box Cover (Bottom)	1	E-6132
Not Shown	Label GM Engines	1	7060720

4.3L LPG Lift Trucks

DBW LPG MIXER AND THROTTLE BODY ASSEMBLY



4.3L LPG Lift Trucks

Spectrum Series II



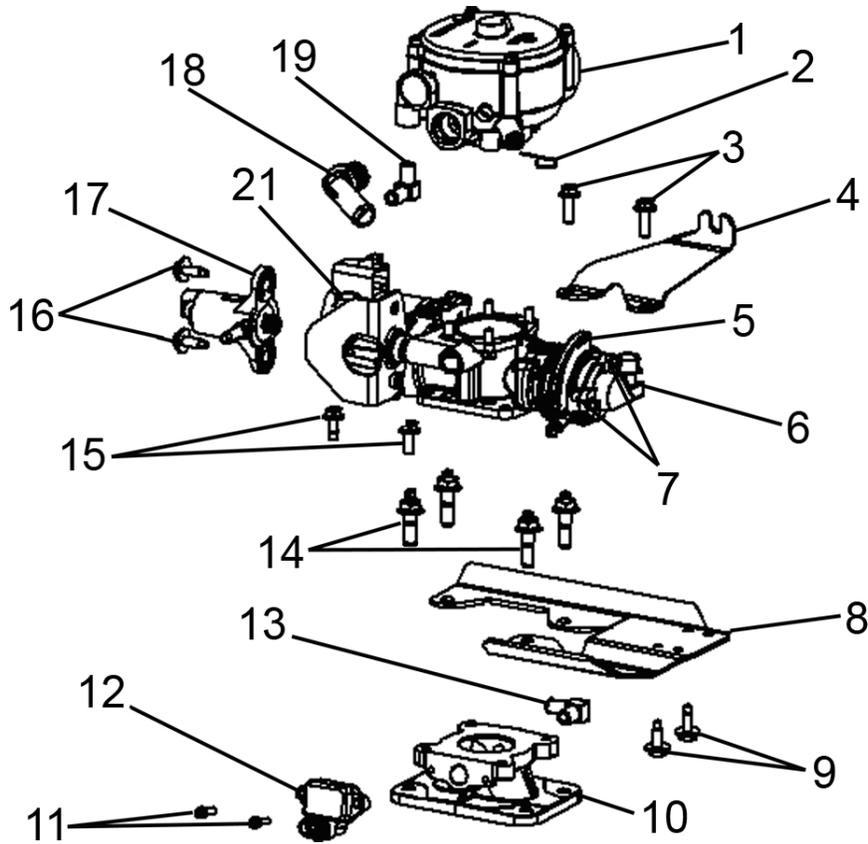
DBW LPG MIXER AND THROTTLE BODY ASSEMBLY

Item #	Description	Qty	Part Number	GM Part Number
1	Gasket Manifold to Adapter	1	G1-25667	
2	Adapter, Elbow, intake	1	A3-30946-001	
3	Bolt, Adapter to ETC	4	S1-30295-0655	
4	Bracket, LPR to Eng	1	B4-30947-001	
5	Bolt, LPR to Bracket	2	S1-30283-0620	
6	Bolt, Adapt to Manifold	4	90205125	
7	Regulator, Low Pressure	1	CS4-30772-004	
8	Fitting, Fuel inlet to LPL	1	F4-14220	
9	Adapter, Fitting LPL	1	F4-30953-001	
10	Fitting, Elbow LPL to LPR	1	F4-14184-002	
11	Bolt, TMAP	1	S1-30047-001	
12	Sensor, TMAP	1	E1466001	
13	Valve, Pressure Trim	1	V3-30272-279	
14	Clip, PTV retainer	1	C2-30267-001	
15	Bolt, PTV retaining	2	S1-30283-0620	
16	Hose, Ass PTV Vac	1	AH1-30852-008	
17	Hose, Ass FTV Fuel Inlet	1	AH1-30852-003	
18	Valve, Fuel Trim	1	V3-30270-277	
19	Bolt, FTV Retaining	2	S1-30283-0620	
20	Fitting Fuel Inlet Mixer	1	AF4-30615	
21	Pin Retaining Ftg In Mix	1	P1-30559	
22	Fitting, Vac PTV Hose Ass'y	1	F4-2	
23	Hose, Vapor Inlet Mix	1	AH1-30853-014	
24	Hose, Bal. Line	1	AH1-30853-001	
25	Fitting, Bal. Line Mix	1	F4-12	
26	Mixer, Ass'y	1	FT100M-30828-52-001	
27	Bolt, FTV Brake Mount	2	S1-30871-02-0620	
28	O-ring, Intake Seals	2	S3-1524-003	
29	Adapter, FTV inlet	1	AA3-30952-001	
30	Nut, FTV Mnt Bolt	2	5N-001	
31	Support, FTV Mnt Adapter	1	B4-30980-001	
32	Screw, FTV Adapter to Mix	4	S1-31083-1224-075	
33	Collar, Seal ETC Inlet	1	S6-30976-001	
34	Electronic Throttle Control	1	E1312100	
35	Fitting, Adapter	1	401-02	
36	Lock Off Electric, LPG	1	ET98-30515-001	
37	O-Ring,	1	S3-1524-004	

DBW LPG MIXER AND THROTTLE BODY ASSEMBLY

Item #	Description	Qty	Part Number	GM Part Number
Not Shown	Hose Ass'y, Coolant	1	AH1-30853-008	
Not Shown	Fitting, ½ Nptx5/8 hose	1	7171440	
Not Shown	Bolt, M8-1.25x20 mm	3	98333020	
Not Shown	Washer, Lock M8	3	93930000	
Not Shown	Fuel Line LPG	1	7176420	
Not Shown	Retainer Coolant Sensor Wire	1		12052037
Not Shown	Bolt Fuel Line	1		9440034
Not Shown	Washer, lock Fuel Line	1	93300000	
Not Shown	Nut, FTV Brkt to Eng	2	95200000	
Not Shown	Washer, lock 5/16	6	93200000	
Not Shown	Washer Lock 5/16	4	92200000	
Not Shown	Clamp, Blc Hos	1		2024136

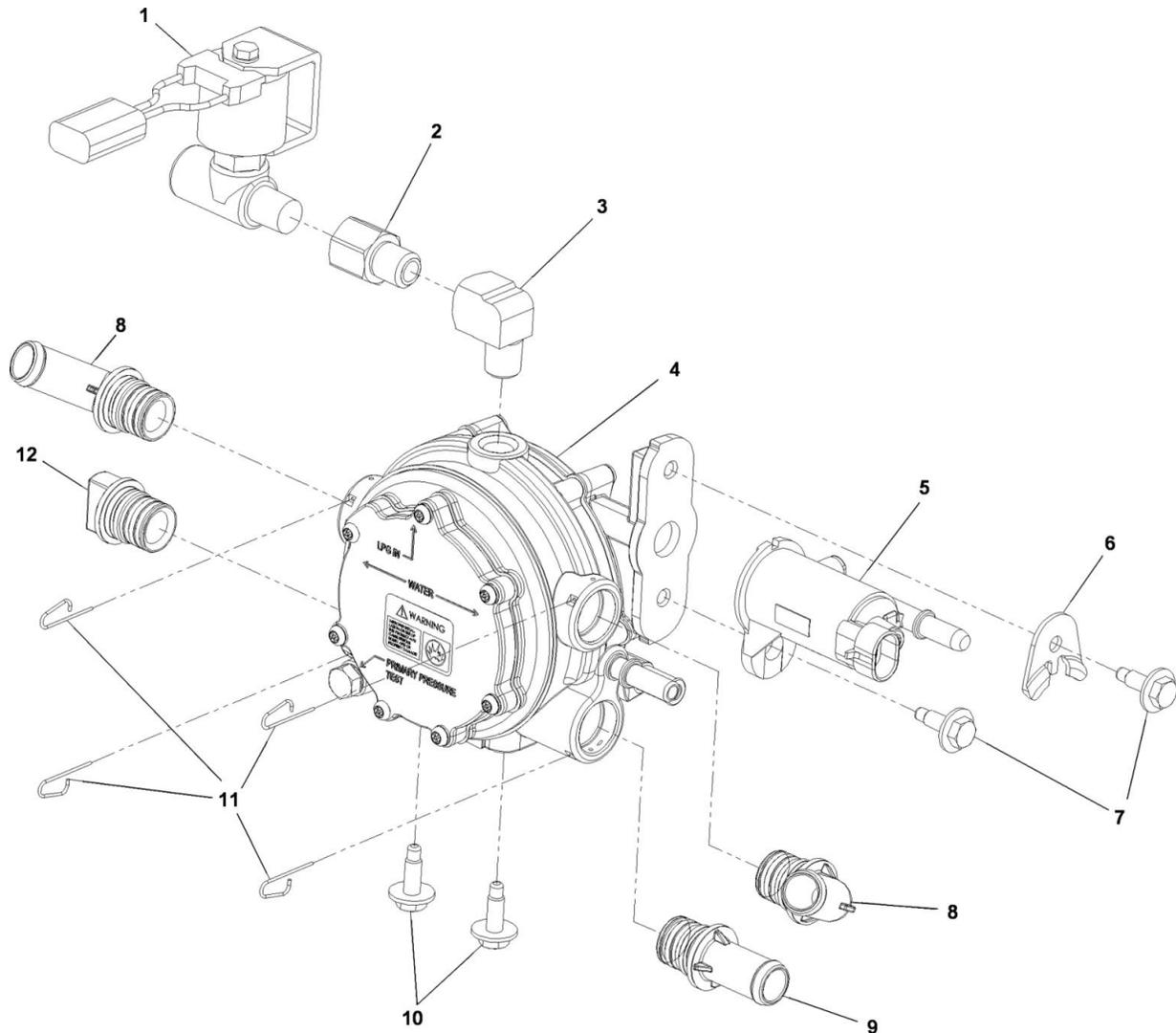
DBC LPG MIXER AND THROTTLE BODY ASSEMBLY



DBC LPG MIXER AND THROTTLE BODY ASSEMBLY

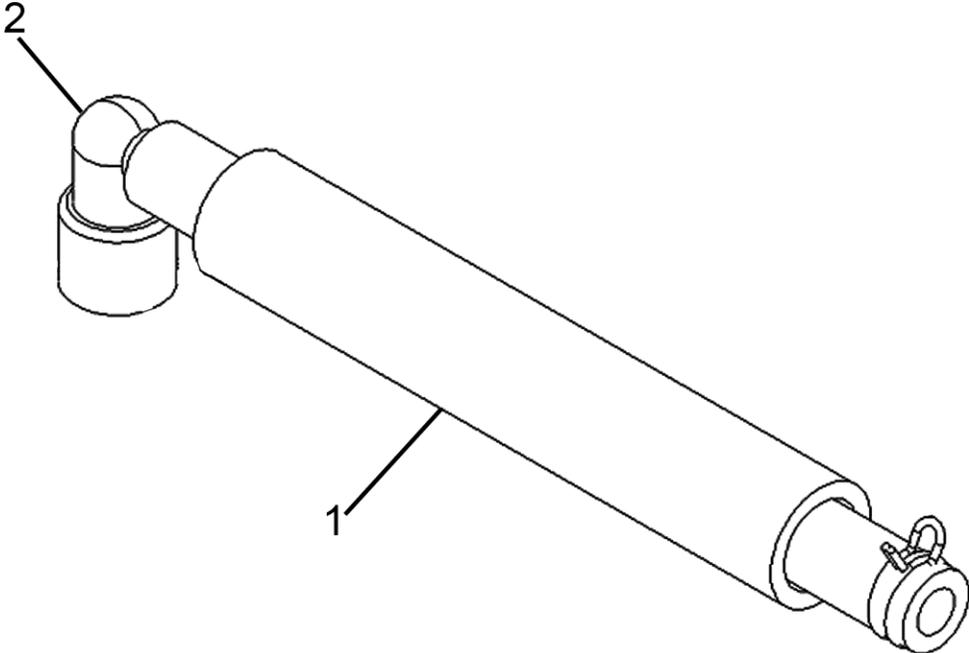
Item #	Description	Qty	Part Number
1	Mixer, FT100M	1	FT100M-30828-52-001
2	Pin, Retaining fitting	1	P1-30559
3	Bolt, Retaining Throttle Body to Mixer	2	S1-30871-02-0620
4	Bracket, Throttle cable	1	B4-30867-001
5	Assembly Throttle Body DBC	1	ATGC-30312-38-25-64
6	Sensor Foot Pedal Position (FPP)	1	S8-30237-001
7	Screw, FPP Retaining	2	S1-30295-0416
8	Bracket, Regulator Mounting	1	NSS
9	Bolts, Regulator Mounting	2	S1-30283-0620
10	Adapter, Manifold to Throttle Body	1	A3-30238-001
11	Screws, TMAP Retaining	2	S1-30295-0416
12	Sensor, TMAP	1	S8-30862-001
13	Fitting, 90 Degree Elbow	1	F4-12
14	Bolts Throttle Body To Adapter	4	S3-30873-31-150
15	Bolts. Throttle Body to Adapter Short	2	S1-30871-02-0620
16	Bolts, FTV Retaining	2	S1-30283-0620
17	Valve , Fuel Trim FTV	1	V3-30270-277
18	Fitting, Fuel Inlet to Mixer	1	AF4-30614
19	O-Ring, Throttle Body Seal	2	S3-1524-003
20	Gasket Manifold to Adapter	1	G1-25667
21	Sensor, Throttle Position (TPS)	1	S8-30703

LPG REGULATOR ASSEMBLY



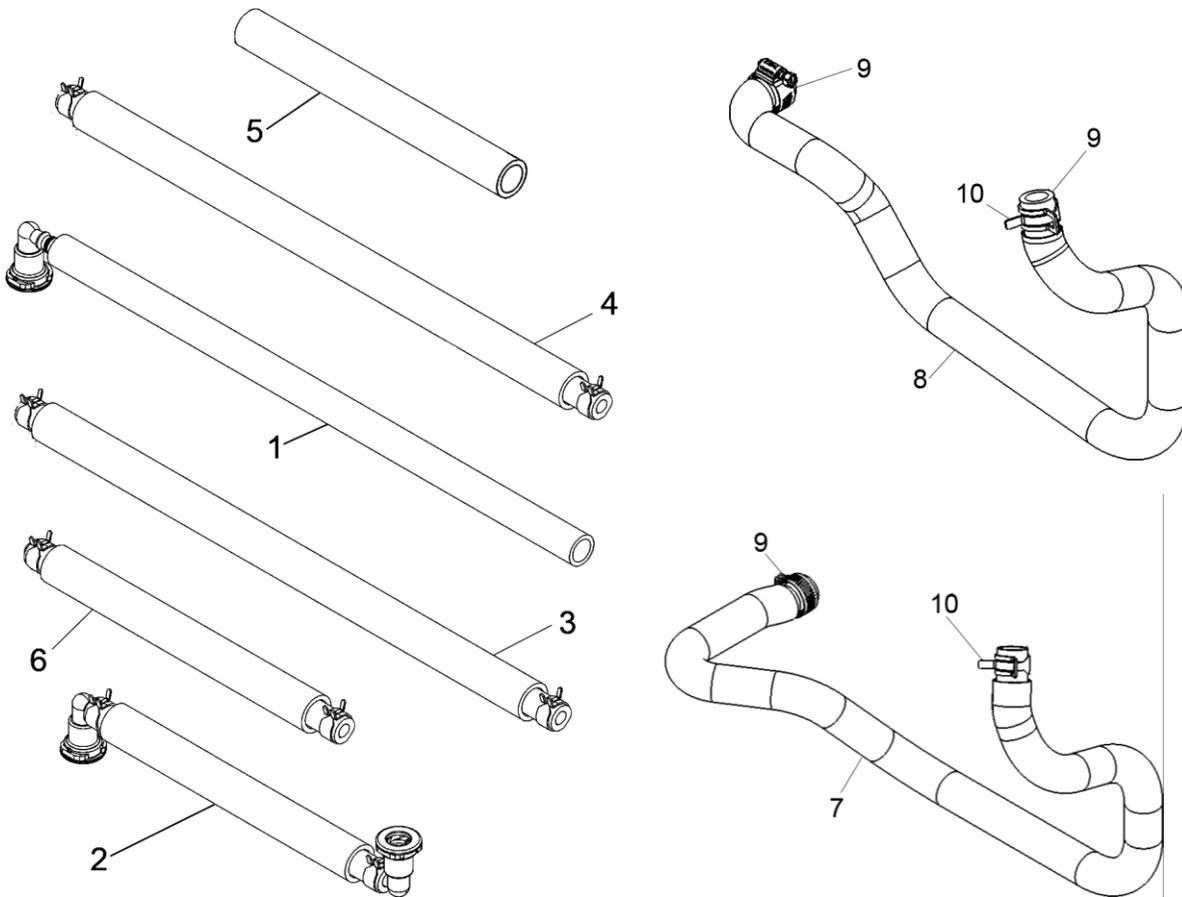
Item #	Description	Qty	Part Number
1	Assembly Lock Off 12 V	1	ET98-50362-001
2	Fitting Brass Adapter	1	F4-30953-001
3	Fitting 90 Degree Elbow	1	F4-14184-002
4	Assembly Regulator	1	CS4-30772-004
5	Valve, Pressure Trim	1	V3-30272-279
6	Clamp, PTV Retaining	1	C2-30267-001
7	Bolt, PTV Retaining	2	S1-30283-0620
8	Fitting, Coolant	2	AF4-30614
9	Fitting Vapor Outlet	1	AF4-30615
10	Bolts, Mounting	2	S1-30283-0620
11	Pin, Retaining	4	P1-30559
12	Cap, Regulator	1	AF4-30613

PCV HOSE ASSEMBLY



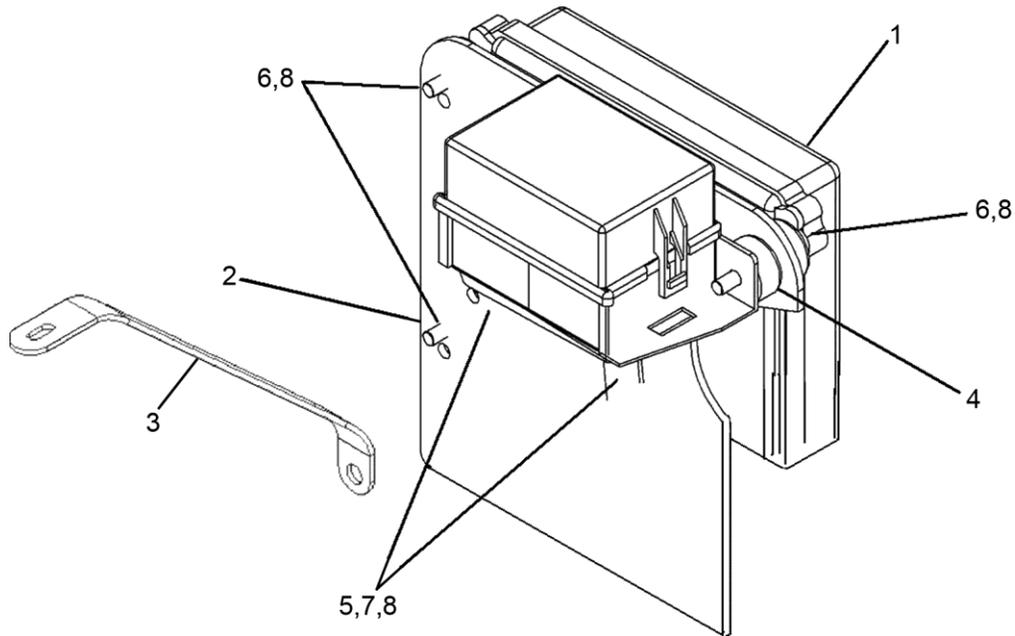
Item #	Description	Qty	Part Number	GM Part Number
1	Assembly, Hose PCV (Includes hoses & Clamps)	1	AH1-30853-020	
2	Valve, PCV	1		6487779

HOSE ASSEMBLIES COOLANT/VACUUM /FUEL/PCV



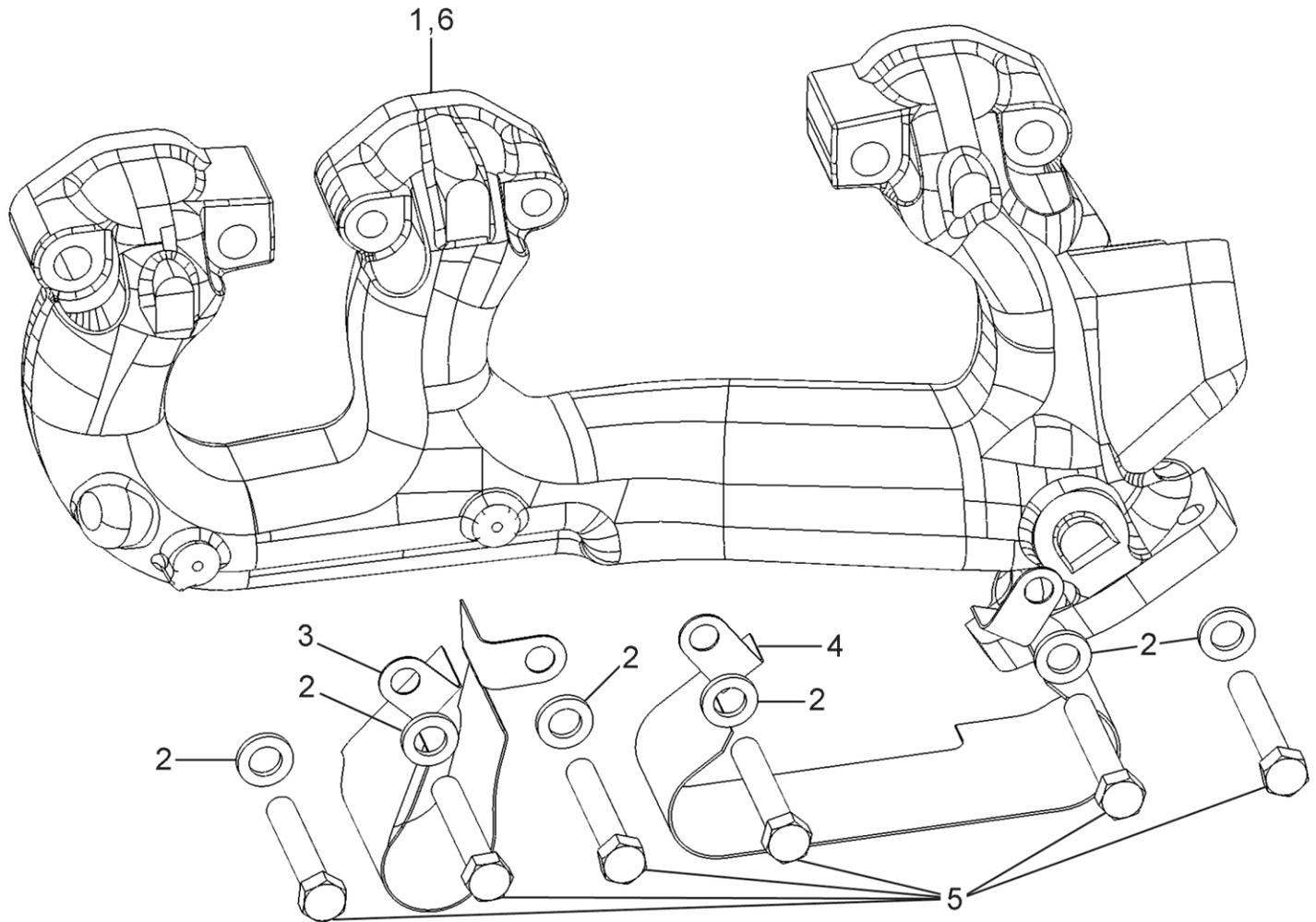
Item #	Description	Qty	Part Number
1	Assembly, Hose PTV	1	AH1-30852-006
2	Assembly, Hose FTV	1	AH1-30852-002
3	Assembly, Hose Coolant 845MM	1	AH1-30853-002
4	Assembly, Balance	1	AH1-30853-001
5	Assembly, Dry Gas Supply	1	AH1-30853-017
6	Assembly, Hose Coolant 245 MM	1	AH1-30853-003
7	Ass'y, Hose LPR Return Molded	1	AH1-30891-001
8	Ass'y, Hose LPR Return	1	AH1-30890-001
9	Clamp, Hose Worm	1	C2-14106-006
10	Clamp, Hose Pinch	1	C2-16664-2

ENGINE CONTROL UNIT



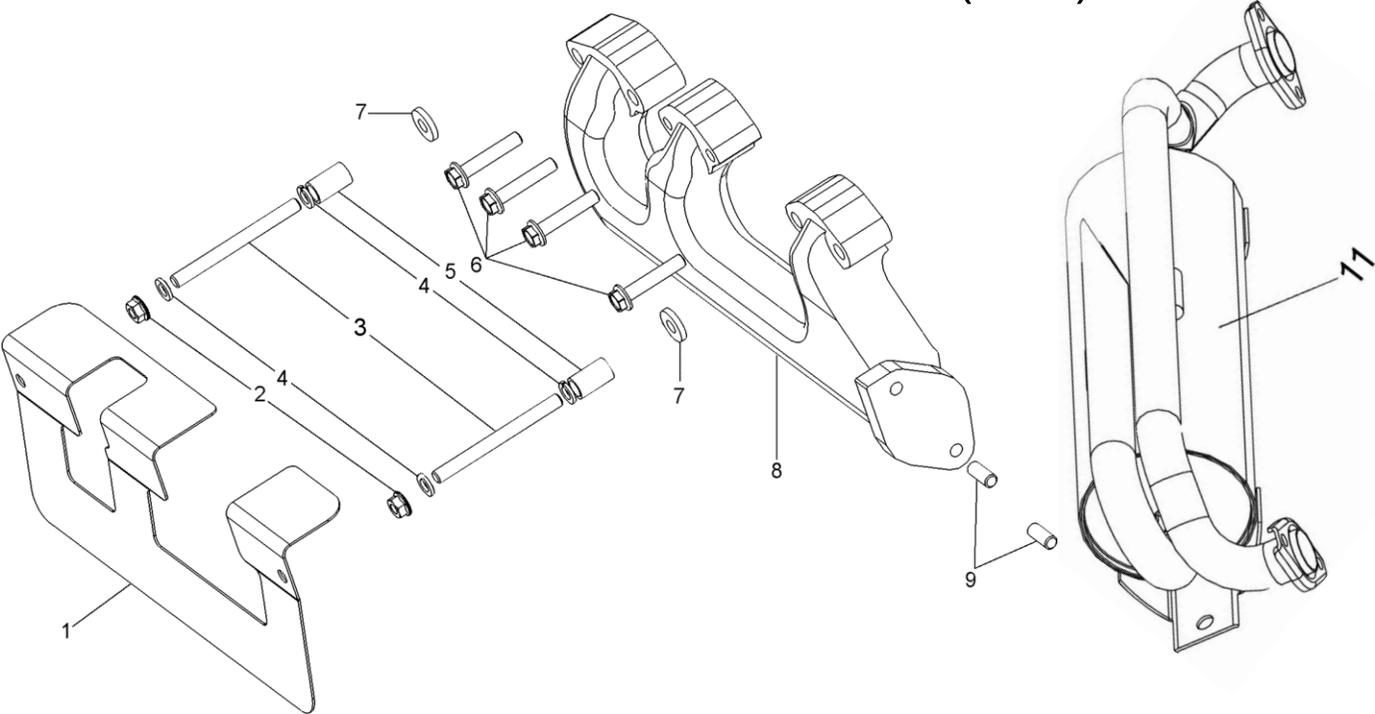
Item #	Description	Qty	Part Number	GM Part Number
1	NMHG/NACCO/Hyster/Yale	1	0922701	
	NMHG/NACCO/Hyster/Yale		0925701	
	MCFA		1026651	
2	Bracket, ECU Mounting	1	7370810	
3	Bracket Support ECU	1	NSS	
4	Isolator, Relay Box	6	7245290	
5	Bolt, ECU Brkt Mnt Short	2	90124050	
6	Bolt, ECU Brkt Mnt Long	4	90125050	
7	Nut, ECU Brkt Mnt	2	95100000	
8	Washer Lock ECU Brkt (1/4)	7	93100000	
Not Shown	Washer Lock ECU Brkt (3/8)	2	93000000	
Not Shown	Washer ECU Grnd	1	93300200	
Not Shown	Bolt ECU Brkt Mnt 3/8	3		9440034

EXHAUST MANIFOLD



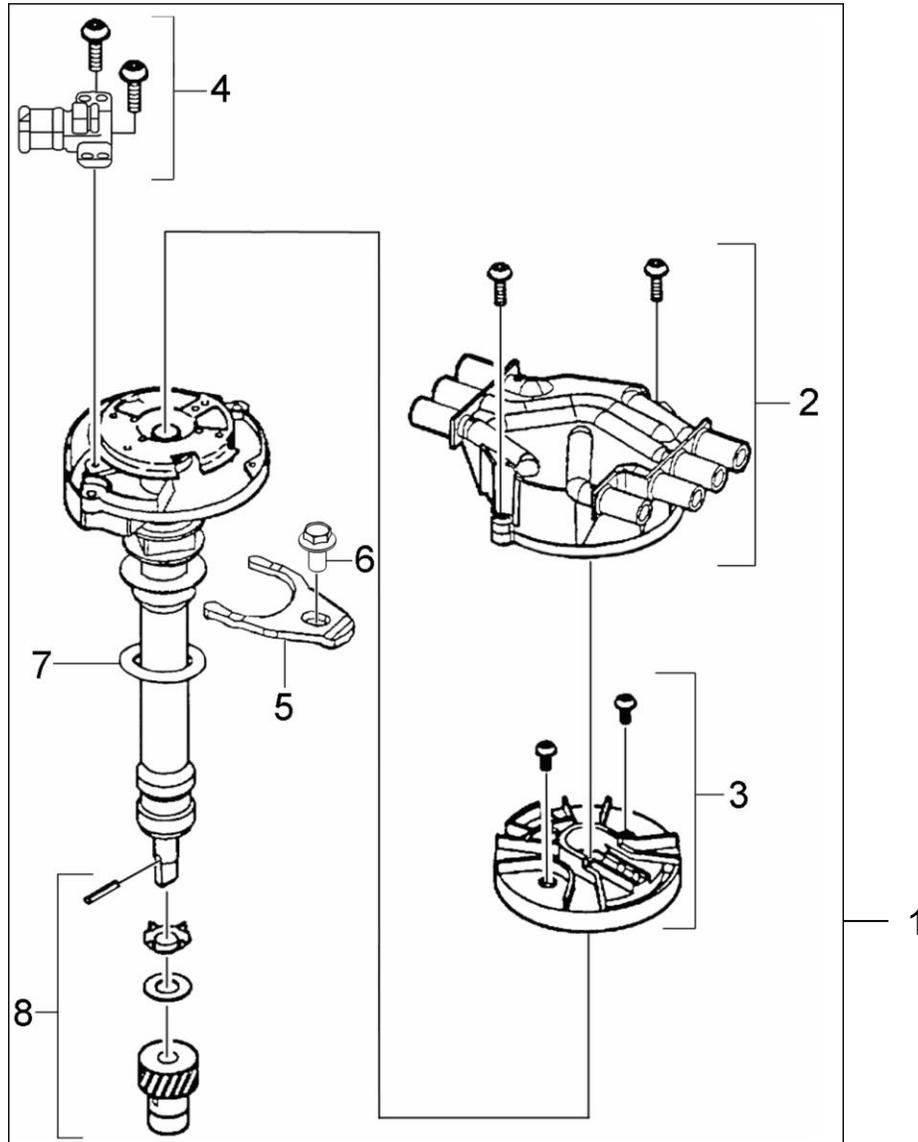
Item #	Description	Qty	Part Number	GM Part Number
1	Exhaust Manifold, RH	1		12552325
2	Washer, Exhaust Manifold	12	W1-50595-037	
3	Shield, Spark Plug	2		10105861
4	Shield, Spark Plug Double	2		12551505
5	Bolt, 3/8" 16 x 2 1/4" Hex Gr 5	12	90305225	
6	Exhaust Manifold, LH	1		12550172

MANIFOLDS & EXHAUST SYSTEM (MCFA)



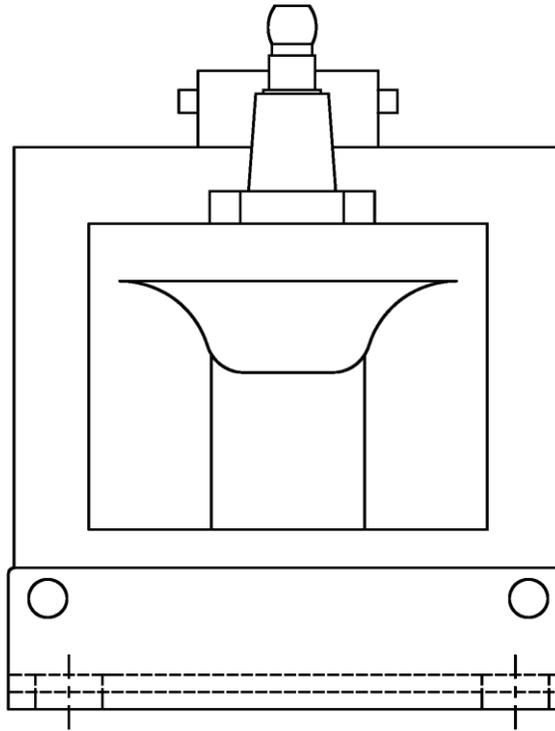
Item #	Description	Qty	Part Number	GM Part Number
1	Shield, Exhaust Manifold	2	7152020	
2	Nut, Hex, 3/16-16	4		7152030
3	Stud, Exhaust 3/8" x 16 x 4-14"	4	7152050	
4	Washer, Lock 3/8"	8	93300000	
5	Spacer, 16mm OD x 32mm LG MCFA	4	7151980	
6	Bolt, 3/8"-16-2" hex, flange Gr8	8	90328200	
7	Washer, Flat 3/8" ID 3/16" thick	4		9414034
8	Manifold, Exhaust, RH	1	7152040	
	Manifold, Exhaust, LH	1	7152030	
9	Stud, Exhaust M10-1.25 x 25mm	4	7151990	
10	Stud, Exhaust 3/8" x 16 x 4-14"	4	7152050	
11	Catalyst, Three Way, MCFA DBW	1	7332400	
	Catalytic Converter MCFA DBC	1	C12-50185-001	

DISTRIBUTOR



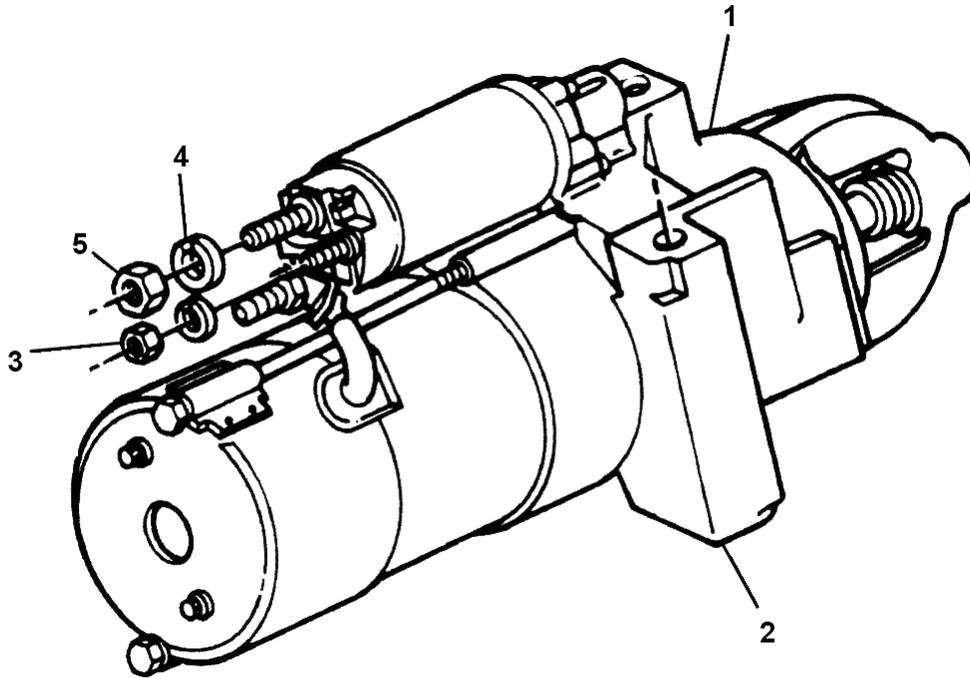
Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete-includes 2-9 below)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245490	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

IGNITION COIL

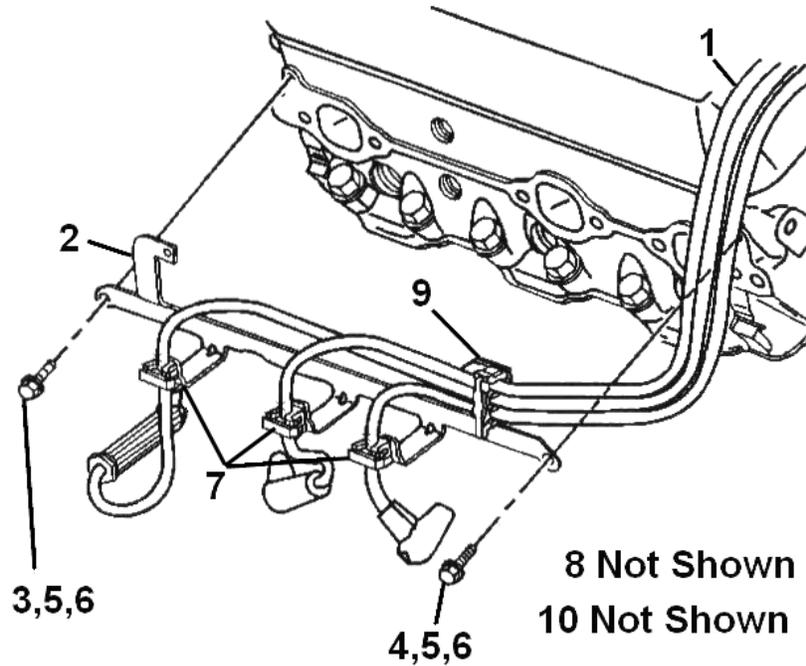


Item#	Description	Qty	GM Part Number
1	Ignition Coil	1	12598697

STARTER

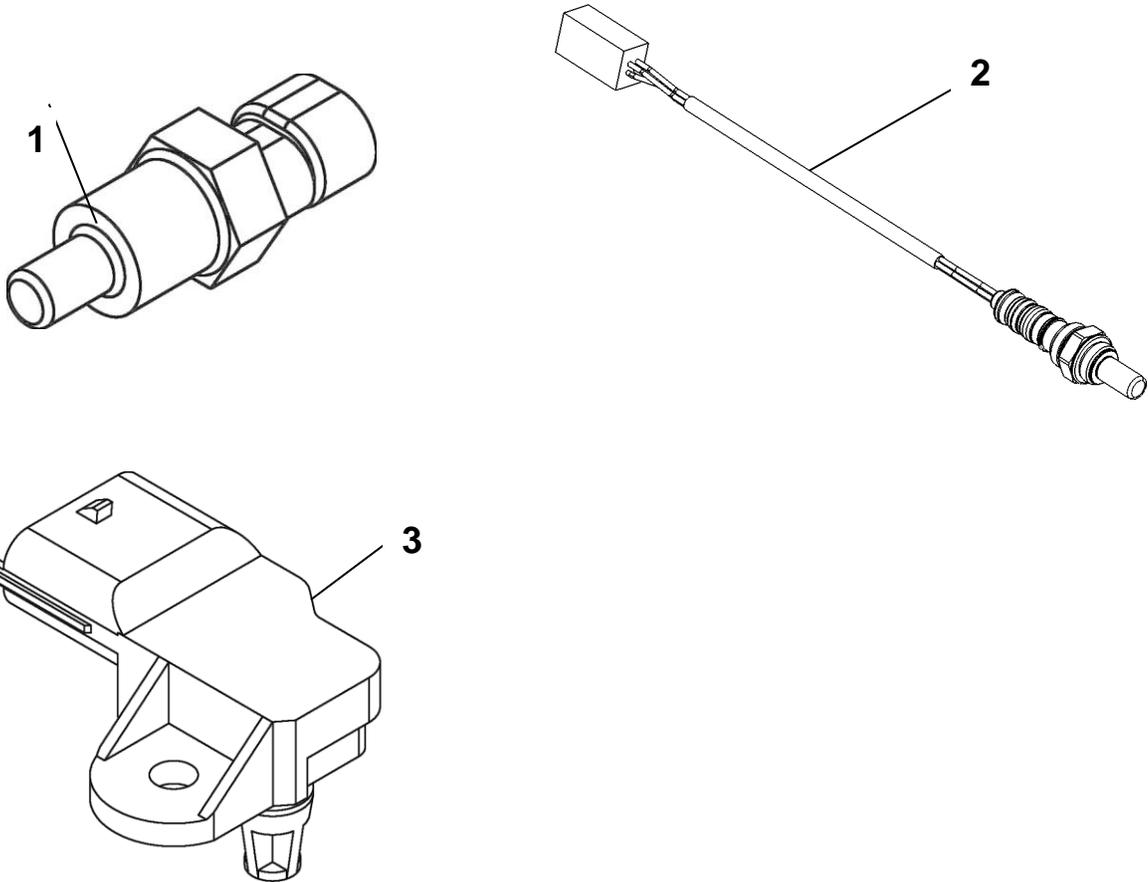


Item #	Description	Qty	Part Number	GM Part Number
1	Starter, Eng	1	821042 See TSB-197	
2	Bolt, Starter	2		11561797
3	Nut, Brass M5	1	97111000	
4	Washer Lock Brass #10	1	93003000	
5	Nut, Hex M8	1	97331000	
6	Bracket, Starter	2	7245200	
7	Nut 10-24	2	95000000	
8	Washer Lock # 10	2	93000000	
9	Washer Flat # 10	2	92000000	

SPARK PLUG WIRES


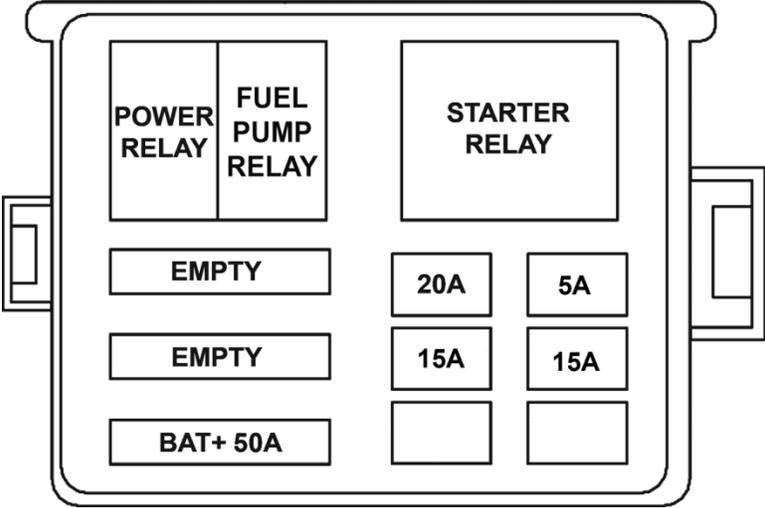
Item #	Description	Qty	Part Number	GM Part Number
1	Harness, Spark Plug	1		12173579
2	Retainer, Spy Plug Wires	2		12555948
3	Bolt Spy Plkg Rtnr Lng	3	90124050	
4	Bolt Spy Plkg Rtnr Shrt	1	90125050	
5	Washer Flat, Spark Plug Rt	4	92100000	
6	Washer, Loc Spark Plug Rt	4	93100000	
7	Retainer, Spark Wire (1)	6		12084629
8	Retainer, Spark Wire (3)	2	NSS	
9	Retainer, Spark Wire (3) Lock	2		12052037
10	Loom 7243600	AR	NSS	

SENSORS



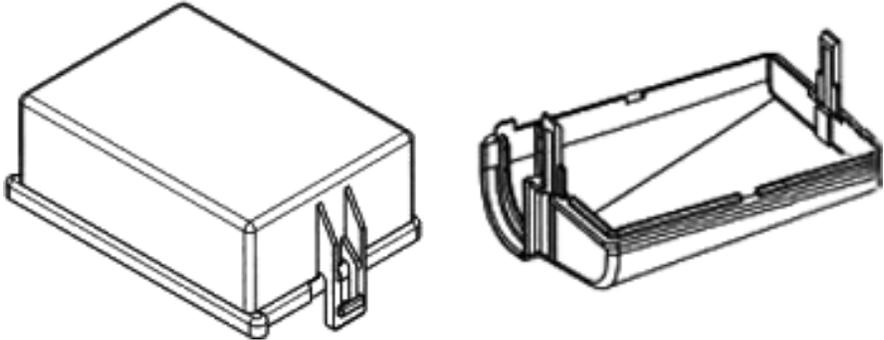
Item #	Description	Qty	Part Number	GM Part Number
1	Coolant Temp Sensor	1		15326386
2	HEGO, Pre-Catalyst	1		12559855
3	Sensor, TMAP	1	E1466001	

WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX



Layout may vary depending on application

Fuse Box Covers



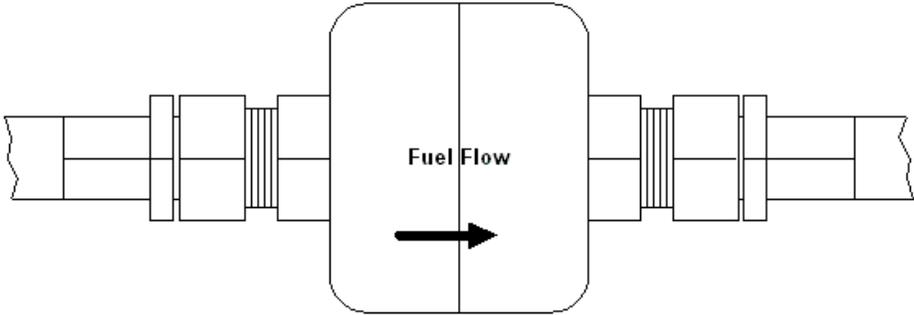
Item #	Description	Qty	Part Number
(Not Shown)	Harness, Engine Electrical	1	E1351040
	Harness, Gas Injector Jumper	1	E1372100
Power Relay	Power Relay	1	885014
Fuel Pump Relay	Fuel Pump Relay	1	885014
Starter Relay	Starter Relay	1	7381290
Alternator 50A Fuse	50A Maxi Fuse	1	7381280
5A Fuse	5A Minifuse	1	7380660
20A Fuse	20A Minifuse	1	7381270
15A Fuse	15A Minifuse	1	7381120
Starter Relay	Starter Relay	1	7381270
	Fuse Box Cover (Top) w/o Label	1	E-6131
	Fuse Box Cover (Bottom)	1	E-6132

4.3L LPG Lift Trucks

Spectrum Series II



FUEL FILTER



Item #	Description	Qty	Part Number
1	Filter, 1/4" X 1/4" NPT LPG Assembly	1	F1-30869-001

SERVICE BLOCK

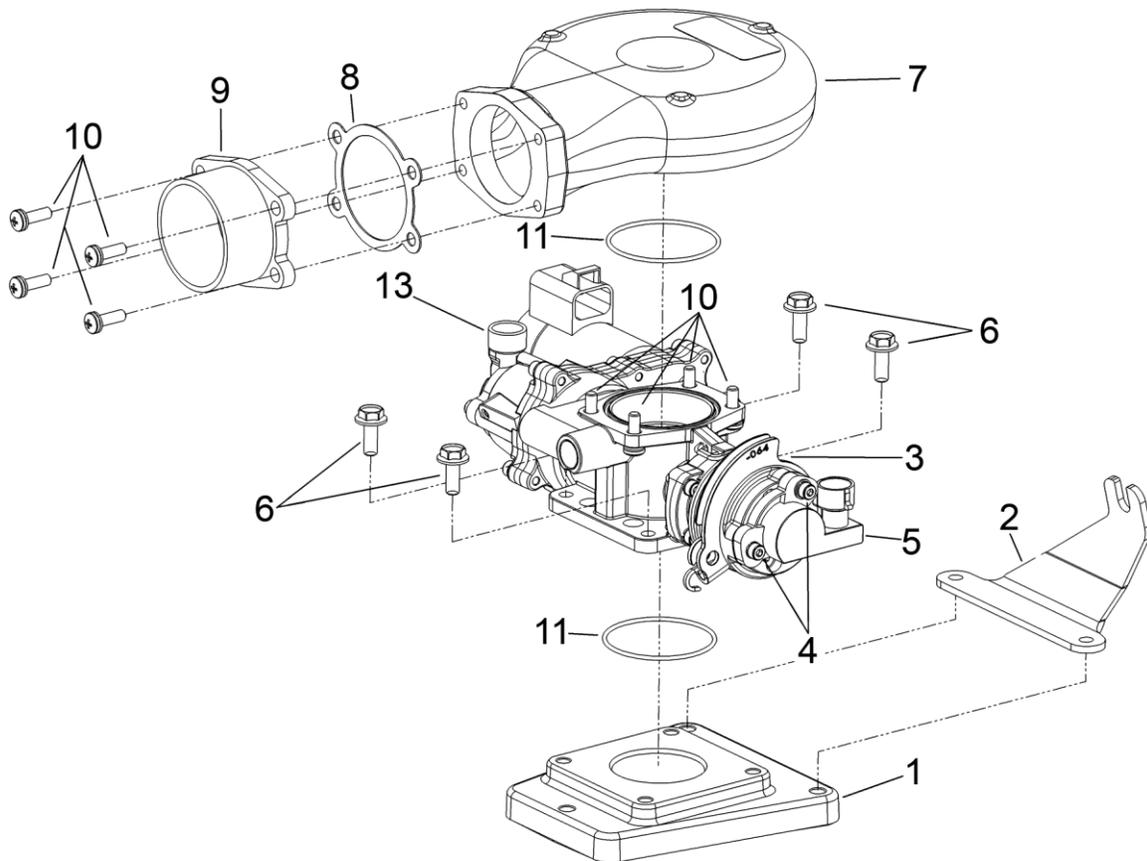


Description	Qty	GM Part Number
Service Block	1	7043321*

*Requires that the distributor, ignition coil and other minor bolt-on parts be transferred from the original engine.

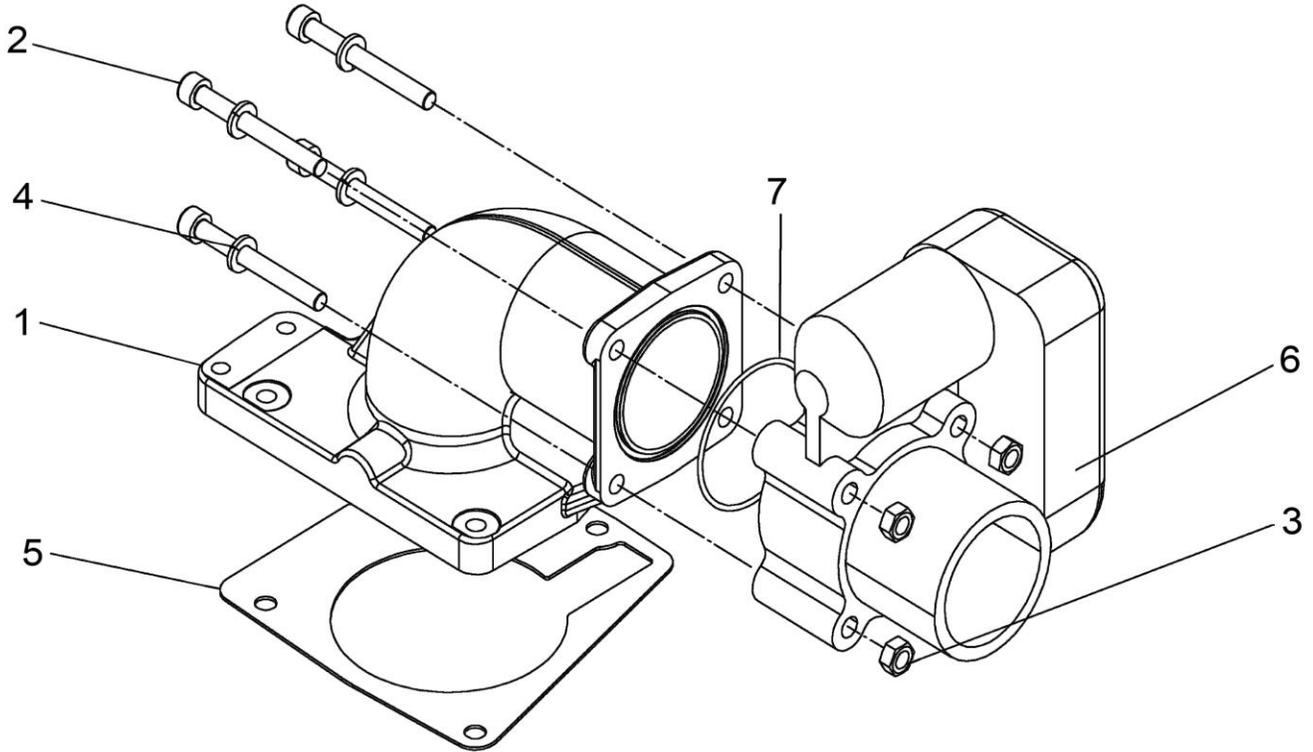
4.3L Gasoline Lift Trucks

DBC GASOLINE THROTTLE BODY ASSEMBLY



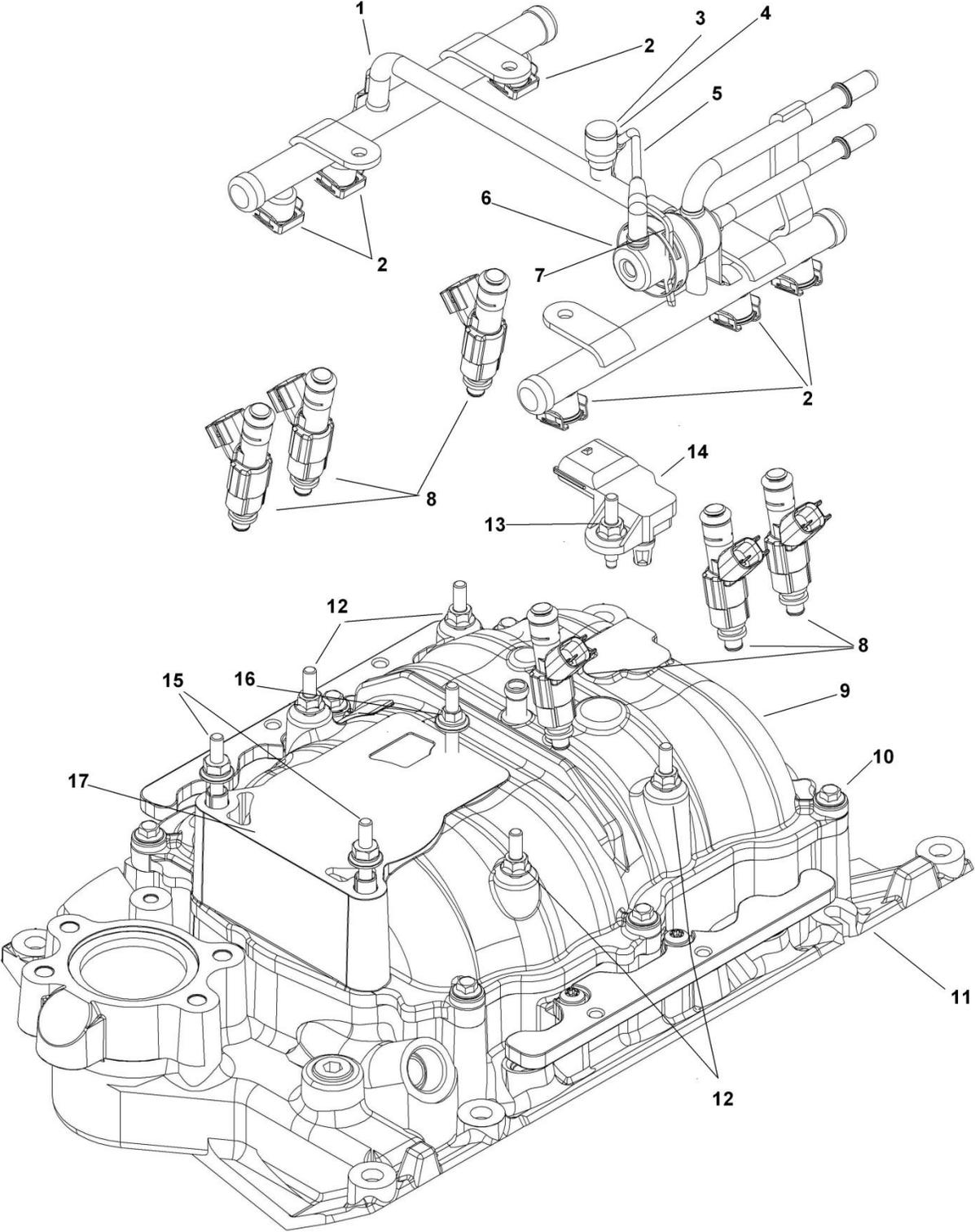
Item #	Description	Qty	Part Number	GM Part Number
1	Adapter, Manifold to throttle body	1	NSS	
2	Bracket Throttle Cable	1	B4-30870-001	
3	Assembly, Throttle Body	1	ATGN-30312-38-25-64	
4	Screws, FPP Retaining	2	S1-30295-0416	
5	Sensor, Foot Pedal Position FPP	1	S8-30237-001	
6	Bolt, Throttle Body to Adapter	4	S1-30871-02-0616	
7	Bonnet, Throttle Body Assembly	1	A2-30261-001	
8	Gasket, Air Inlet to Bonnet	1	G1-11	
9	Adapter, Air Inlet	1	A3-29-1	
10	Screws, Retaining	8	S1-30047-001	
11	O-Ring, Throttle Body Assembly	2	S3-1524-003	
12	Gasket, Adapter to Manifold	1		12570169
13	Sensor, Throttle Position		S8-30703	

DBW GASOLINE THROTTLE BODY ASSEMBLY



Item #	Description	Qty	Part Number	GM Part Number
1	Adapter, Elbow ETC to Manifold	1	A3-30977-001	
2	Screw, ETC to Adapter	4	S1-30295-0655	
3	Nut, Hex ETC Adapter	4	5N-001	
4	Washer Lock M6	4	W1-1988-001	
5	Gasket Elbow To Manifold	1		12570169
6	Electronic Throttle Control	1	E1312100	
7	O-Ring, ETC to Adapter	1	S3-1524-003	

MANIFOLD WITH FUEL RAIL AND INJECTORS



MANIFOLD WITH FUEL RAIL AND INJECTORS

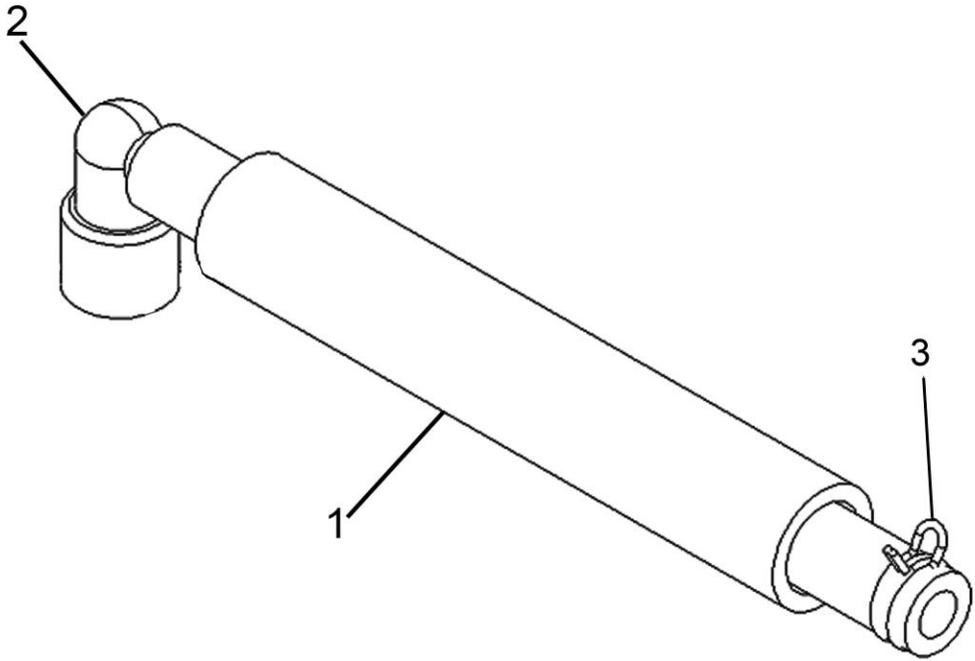
Item #	Description	Qty	Part Number	GM Part Number
1	Assembly, Fuel Rail	1		88894336
2	Clip, Injector Retainer	6		12554679
3	Cap, Fuel Pressure Test	1		25532662
4	Valve, Pressure Test	1		88894338
5	Hose, Fuel Press. Reg.	1		12570365
6	Regulator Fuel Press.	1		12568878
7	Retainer, Clip Reg.	1		12554679
8	Injector, Gasoline	6		12567905
9	Manifold, Upper	1		7043354
10	Bolts, Manifold upper	7		12550027
11	Manifold, Lower	1		12568427
12	Studs, Fuel Rail	4		12554211
13	Bolt, TMAP	1		22539278
14	Sensor, TMAP	1		12568929
15	Bolt, Throttle Body Front	2		17113216
16	Bolt, Throttle Body Rear	1		17123585
17	Gasket, Upper to Lower Manifold	1		12567902
18	Plug, EGR	1	7152010	
Not Shown	Fitting, 90 Brake Boost	1	417-03	
Not Shown	Cap, Rbr, Intake Manifold Rr	1	45342	
Not Shown	Fitting, Str Brake Boost	1	7144350	

4.3L Gasoline Lift Trucks

Spectrum Series II

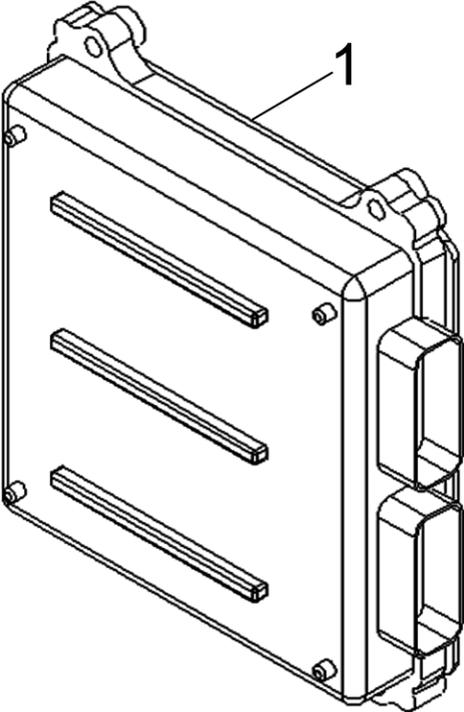


PCV HOSE ASSEMBLY



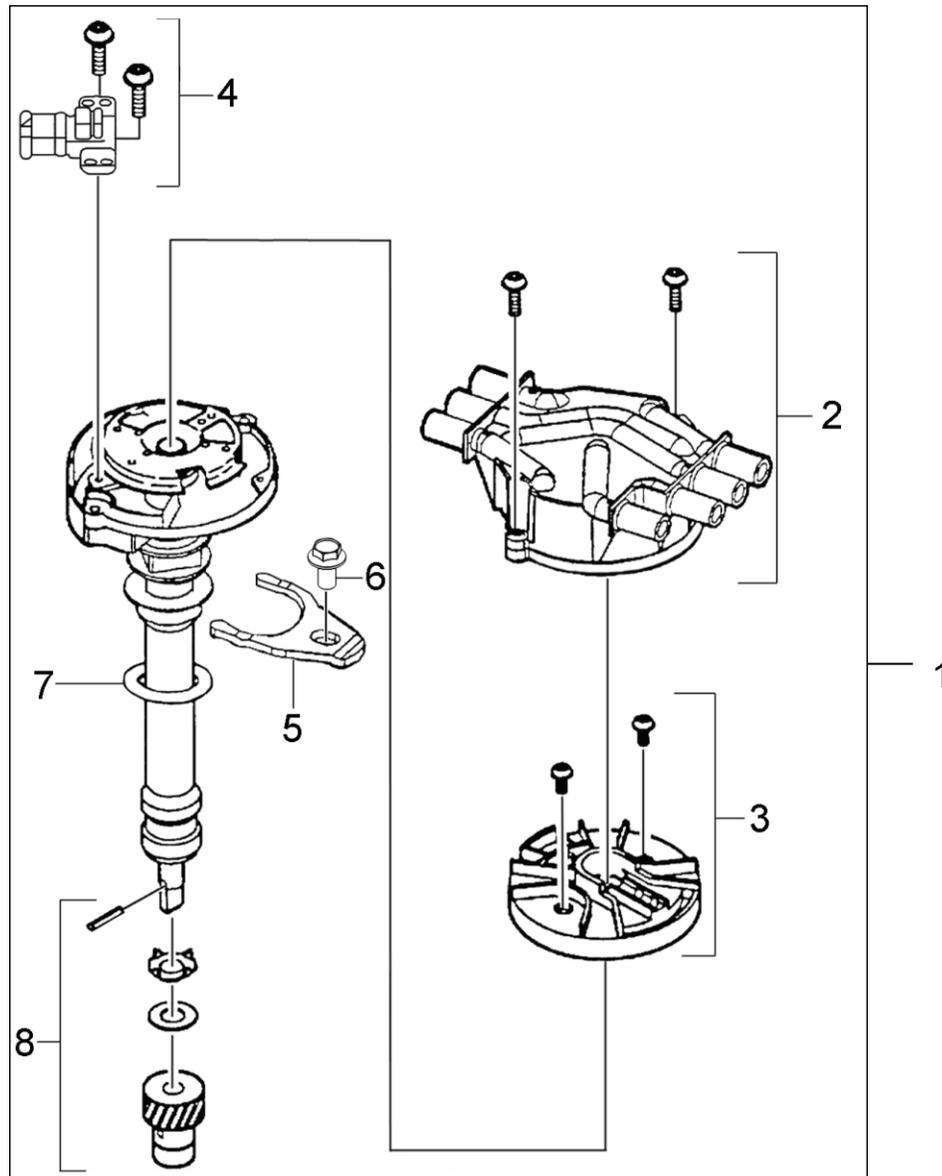
Item #	Description	Qty	Part Number	GM Part Number
1	Hose Assembly, PCV DBW	1	AH1-30853-019	
	Hose Assembly, PCV DBC	1	AH1-30853-020	
2	Valve, PCV	1		6487779
3	Clamp Hose PCV	1	C2-16664-1	
Not Shown	PCV Adapter (2005)	1	F4-30912-001	

ENGINE CONTROL UNIT



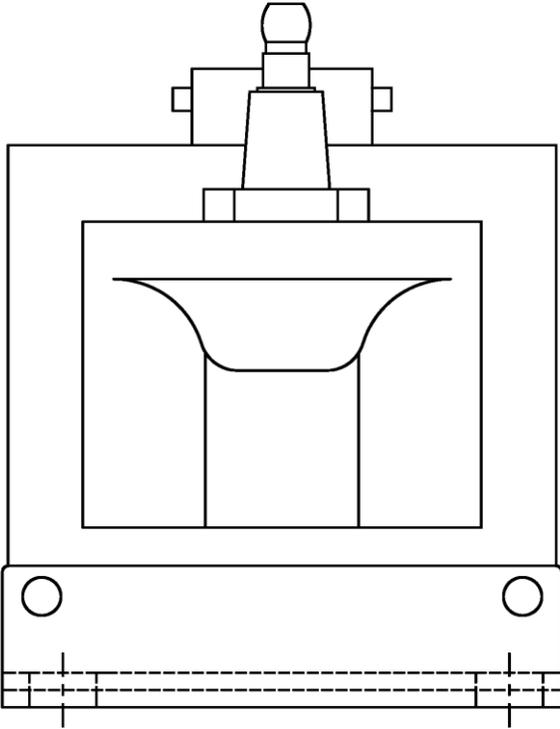
Item #	Description	Qty	Part Number
1	MCFA 93820-07100 Hyster/Yale 580043125	1	1222701
	NMHG/NACCO/Hyster/Yale Hyster/Yale 580043457; 2063342		1225701
	MCFA 93820-06900		1326651

DISTRIBUTOR



Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete-includes 2-9 below)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245430	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

IGNITION COIL



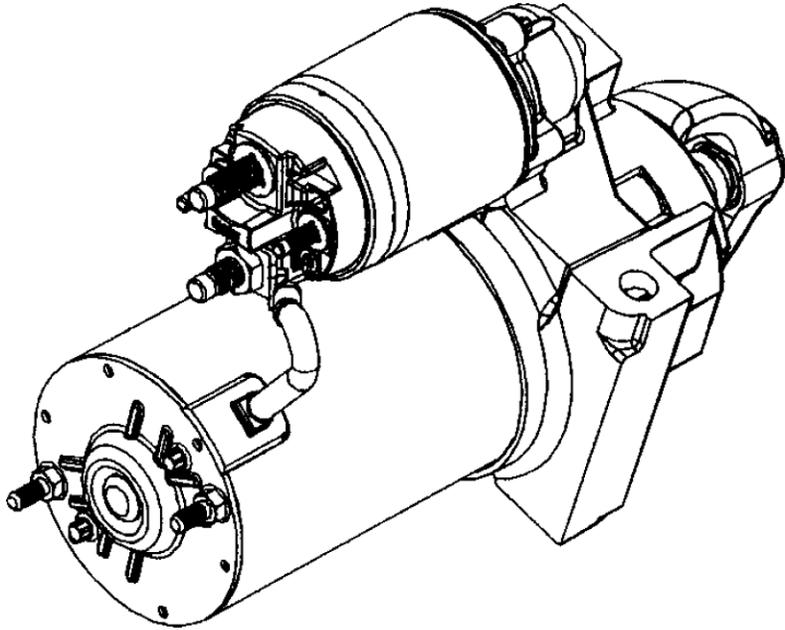
Item#	Description	Qty	GM Part Number
1	Ignition Coil	1	12598697

4.3L Gasoline Lift Trucks

Spectrum Series II

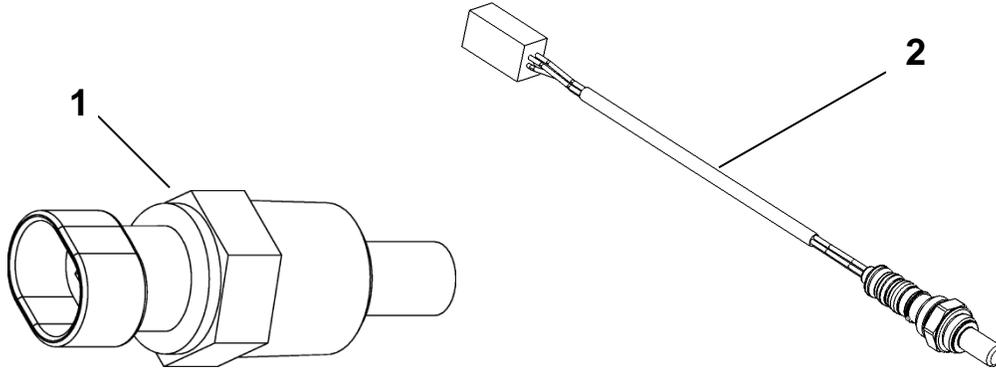


STARTER



Item #	Description	Qty	IMPCO Part Number
1	Starter	1	821042 See TSB-197

SENSORS



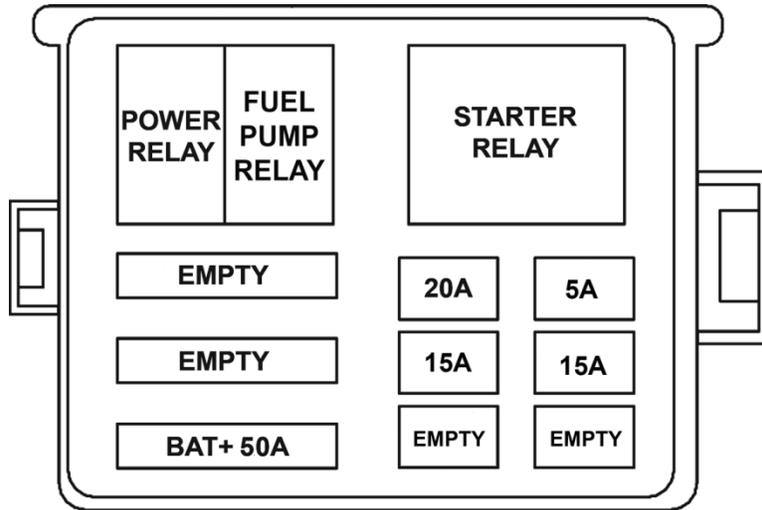
Item #	Description	Qty	GM Part Number
1	Coolant Temp Sensor	1	15326386
2	HEGO, Pre-Catalyst	1	12559850

WIRE HARNESS ENGINE ELECTRICAL

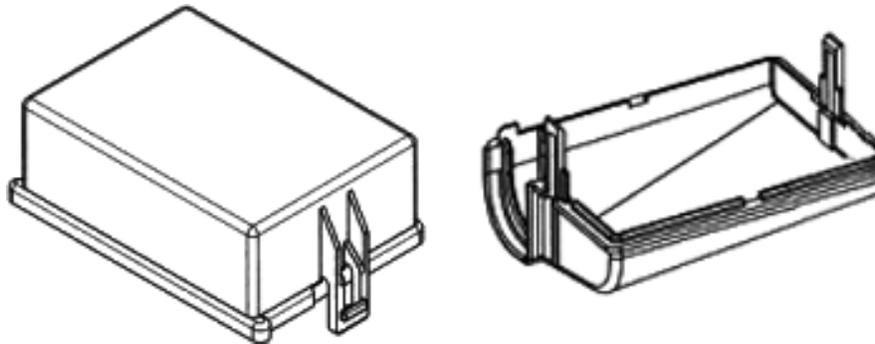


Item #	Description	Qty	Part Number
1	Harness, Engine Electrical DBW	1	E1351040
	Harness, Engine Electrical DBC	1	E1351020

ELECTRICAL/FUSE BOX



Fuse Box Covers



Item #	Description	Qty	IMPCO Part Number
Power Relay	Power Relay	1	885014
Starter Relay	Starter Relay	1	792185
Alternator 50A Fuse	50A Maxi Fuse	1	7381280
5A Fuse	5A Minifuse	1	7380660
20A Fuse	20A Minifuse	1	7381270
15A Fuse	15A Minifuse	1	7381120
15A Fuse	15A Minifuse	1	7381120
	Fuse Box Cover (Top) w/Label	1	E-6131-1
	Fuse Box Cover (Top) w/o Label	1	E-6131
	Fuse Box Cover (Bottom)	1	E-6132

SERVICE BLOCK

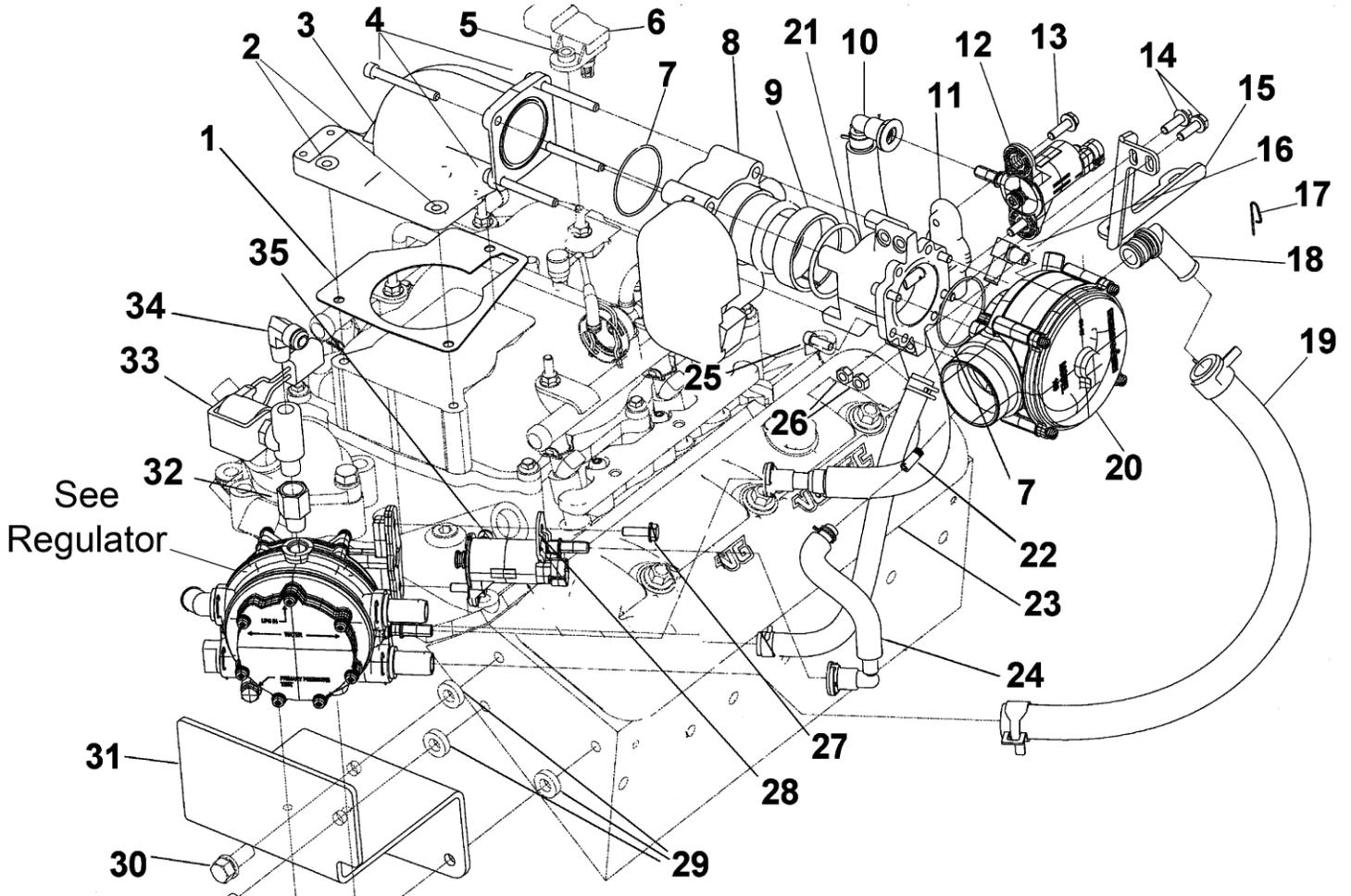


Description	Qty	GM Part Number
Service Block	1	7043321

*Requires that the distributor, ignition coil and other minor bolt-on parts be transferred from the original engine

4.3L Dual Fuel Lift Trucks

THROTTLE BODY ASSEMBLY



4.3L Dual Fuel Lift Trucks

Spectrum Series II



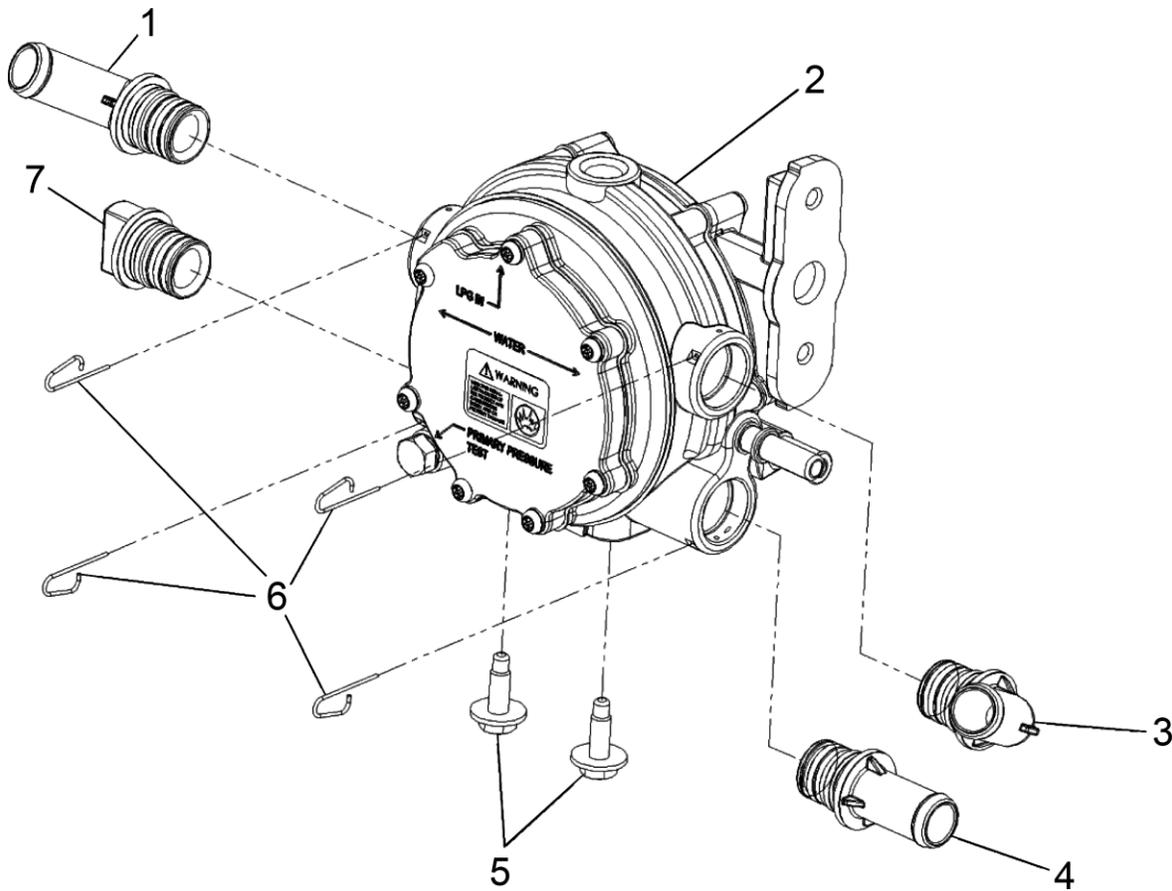
THROTTLE BODY ASSEMBLY

Item #	Description	Qty	Part Number	GM Part Number
1	Gasket Throttle Body	1	7175260	
2	Adapter, Manifold TO ETC	1	A3-30977-001	
3	Bolt, Adapter to Manifold Front	2		17113216
3A	Bolt, Adapter to Manifold Rr	1		17123585
4	Bolt, Adapter To ETC	4	S1-30295-0655	
5	Bolt, TMAP	1		22539278
6	Sensor, TMAP	1		12568929
7	O-ring Seals	2	S3-1524-003	
8	Throttle, Control Electronic	1	E1312100	
9	Sleeve, Seal ETC	1	S6-30976-001	
10	Hose Ass'y, FTV Supply	1	AH1-30852-004	
11	Adapter FTV Mounting	1	AA3-30952-001	
12	Valve, Fuel Trim	1	V3-30270-277	
13	Bolt, FTV Mnt	2	S1-30283-0620	
14	Bolt, FTV Support Bracket	2	S1-30871-02-0620	
15	Bracket FTV Mnt Supt	1	NSS	
16	Fitting Elbow Bal Line	1	F4-12	
17	Pin, Retainer Ftg Mix Inlet	1	P1-30559	
18	Fitting, Mixer Inlet	1	AF4-30614	
19	Hose Ass'y, Mix Inlet	1	AH1-30853-016	
20	Mixer Ass'y FT 100	1	FT100M-30828-52-001	
21	O-ring Seal Mix		S3-1524-004	
22	Fitting, Mix to PTV Line	1	F4-2	
23	Hose Ass'y Bal Line	1	AH1-30853-001	
24	Hose Ass'y PTV Supply	1	AH1-30852-009	
25	Screw, Mix Mnt	4	S1-31083-1224-075	
26	Nut, FTV Mnt Adapter Bolt	2	5N-001	
27	Bolt, PTV Mnt	2	S1-30283-0620	
28	Clamp PTV Mnt	1	C2-30267-001	
29	Washer Lock 3/8	3	93300000	
30	Bolt, LPR Mnt Brkt	3	S1-30283-0620	
31	Bracket, LPR Mnt	1	B4-30985-001	
32	Regulator, Low Pressure	1	CS4-30772-004	
33	Fitting, Adapter LPL to LPR	1	F4-30953-001	
34	Lock Off Electric, Low Pressure	1	ET98-30515-001	
35	Fitting LPL Inlet	1	F4-25	
36	Valve, Pressure Trim	1	V3-30272-279	

**THROTTLE BODY ASSEMBLY
(ITEMS NOT SHOWN IN ILLUSTRATION)**

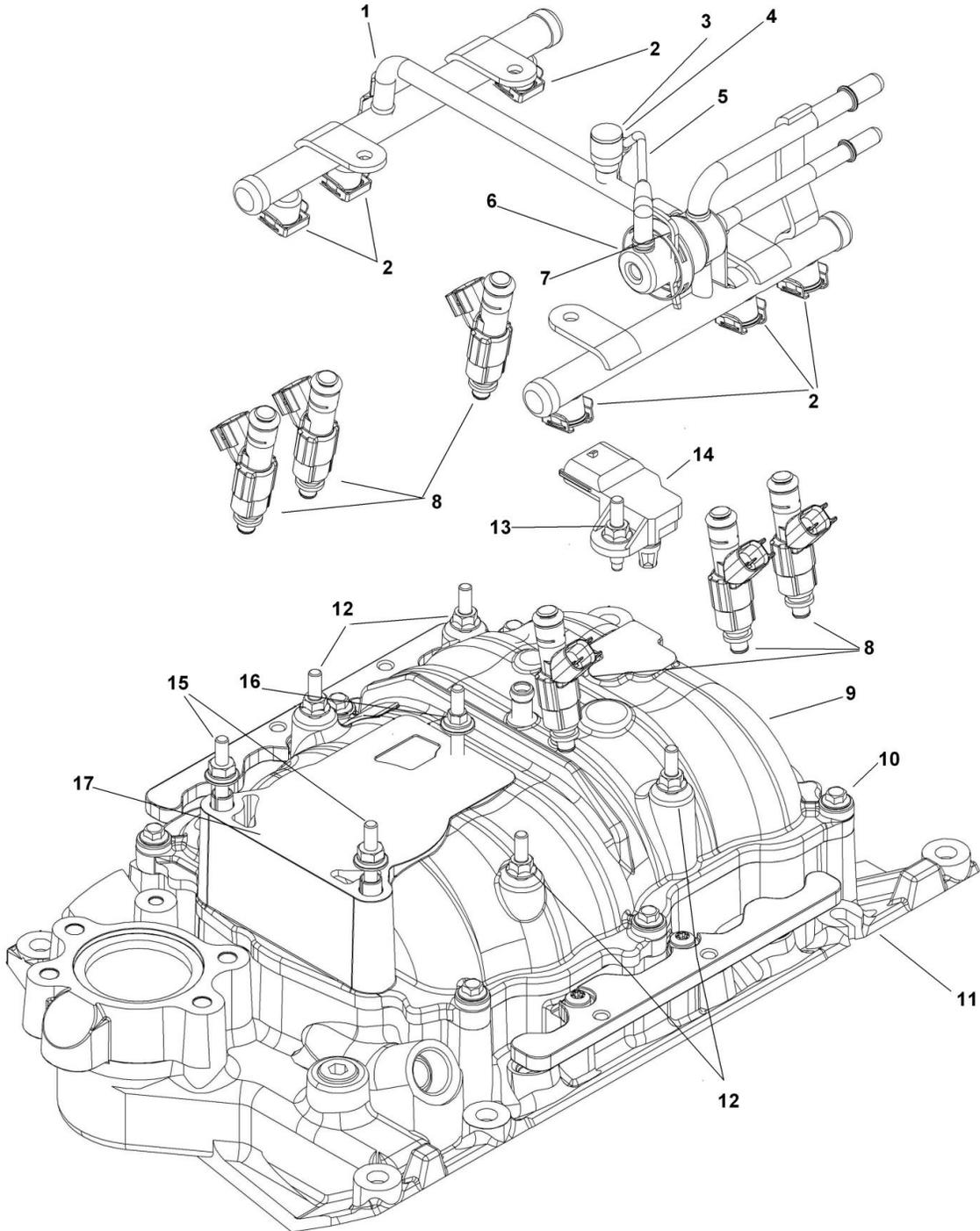
Description	Qty	Part Number	GM Part Number
Hose, Assembly Coolant	1	AH1-30853-021	
Hose, Assembly Coolant	1	AH1-30853-007	
Cap Vinyl Black	1	C2-15137-004	
Bolt, LPR Brkt to Eng	3	90325100	
Washer, Bolt LPR Brkt	3	93300000	
Clamp P, Coolant Line	1		2024136
Nut, ¼ 20, Coolant line Sprt	1	95100000	
Washer, coolant line Sprt	1	93100000	
Retainer, Coolant Wire	1		12052037
Bolt, FTV Sprt Brkt To Manifold	2	98227016	
Washer, Sprt Brkt to Manifold	2	93920000	
Fitting, Manifold To Brake Booster	1	417-03	
Fitting, Brake Booster	1	7144350	

LPG REGULATOR ASSEMBLY



Item #	Description	Qty	IMPCO Part Number
1	Fitting, Coolant	1	AF4-50045-001
2	Assembly Regulator	1	CS4-30772-004
3	Fitting, Coolant 5/8" 70 Degree	1	AF4-30614
4	Fitting Vapor Outlet	1	AF4-30615
5	Bolts, Mounting	2	S1-30283-0620
6	Pin, Retaining	4	P1-30559
7	Cap, Regulator	1	AF4-30613

MANIFOLD WITH FUEL RAIL AND INJECTORS



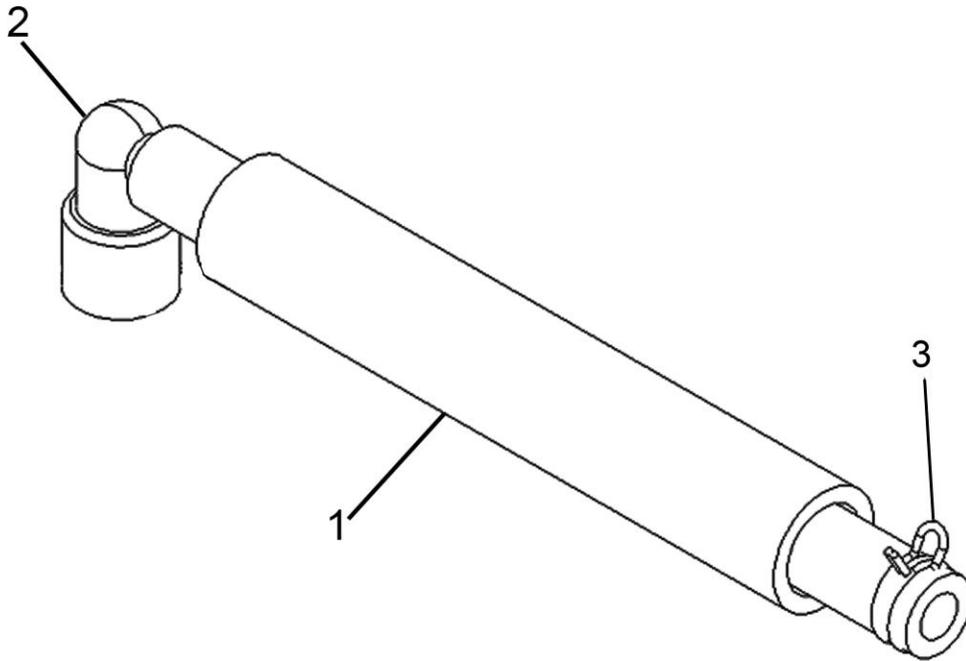
4.3L Dual Fuel Lift Trucks

Spectrum Series II



MANIFOLD WITH FUEL RAIL AND INJECTORS

Item #	Description	Qty	Part Number	GM Part Number
1	Assembly, Fuel Rail	1		88894336
2	Clip, Injector Retainer	6		12554679
3	Cap, Fuel Pressure Test	1		25532662
4	Valve, Pressure Test	1		88894338
5	Hose, Fuel Press. Reg.	1		12570365
6	Regulator Fuel Press.	1		12568878
7	Retainer, Clip Reg.	1		12554679
8	Injector, Gasoline	6		7176490
9	Manifold, Upper	1		7043354
10	Bolts, Manifold upper	7		12550027
11	Manifold, Lower	1		12568427
12	Studs, Fuel Rail	4		12554211
13	Bolt, TMAP	1		22539278
14	Sensor, TMAP	1		12568929
15	Bolt, Throttle Body Front	2		17113216
16	Bolt, Throttle Body Rear	1		17123585
17	Gasket, Upper to Lower Manifold	1		12567902
18	Plug, EGR	1	7152010	
Not Shown	Fitting, 90 Brake Boost	1	417-03	
Not Shown	Cap, Rbr, Intake Manifold Rr	1	45342	
Not Shown	Fitting, Str Brake Boost	1	7144350	

PCV HOSE ASSEMBLY


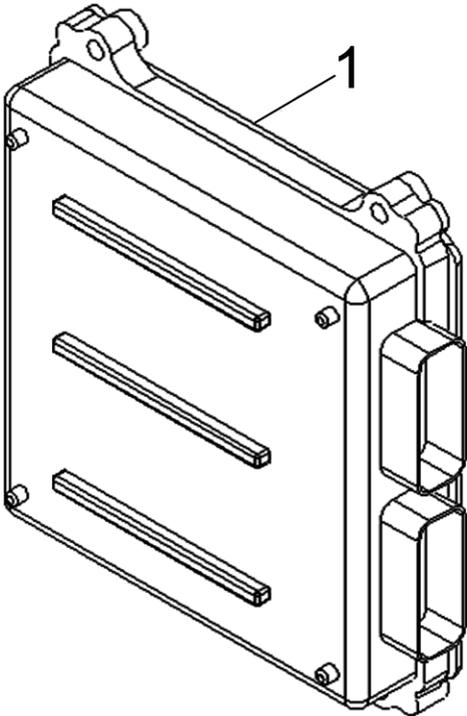
Item #	Description	Qty	Part Number	GM Part Number
1	Hose Assembly, PCV DBW	1	AH1-30853-019	
2	Valve, PCV	1		6487779
3	Clamp Hose PCV	1	C2-16664-1	
Not Shown	PCV Adapter (2005)	1	F4-30912-001	
Not Shown	Elbow Crank Vent	1		1263193

4.3L Dual Fuel Lift Trucks

Spectrum Series II

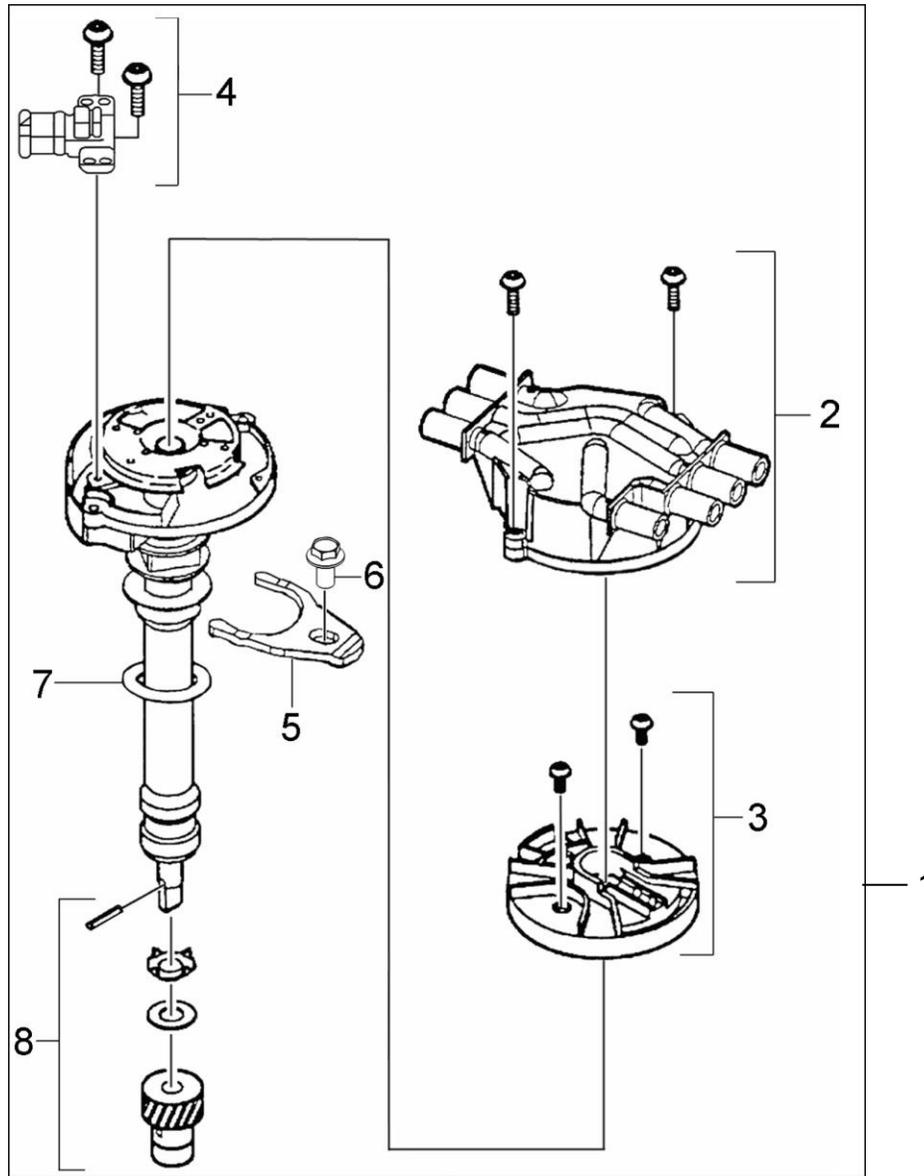


ENGINE CONTROL UNIT



Item #	Description	Qty	Part Number
1	Odyssey LPG/Gas	1	NLA

DISTRIBUTOR



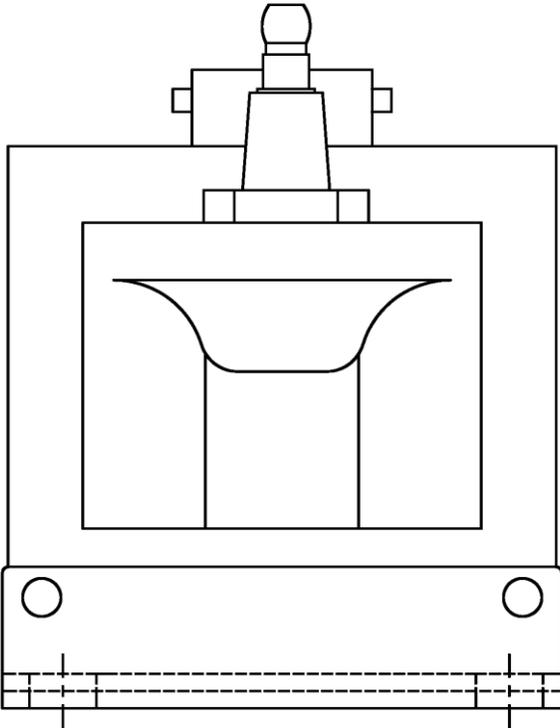
Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete-includes 2-9 below)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245430	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

4.3L Dual Fuel Lift Trucks

Spectrum Series II

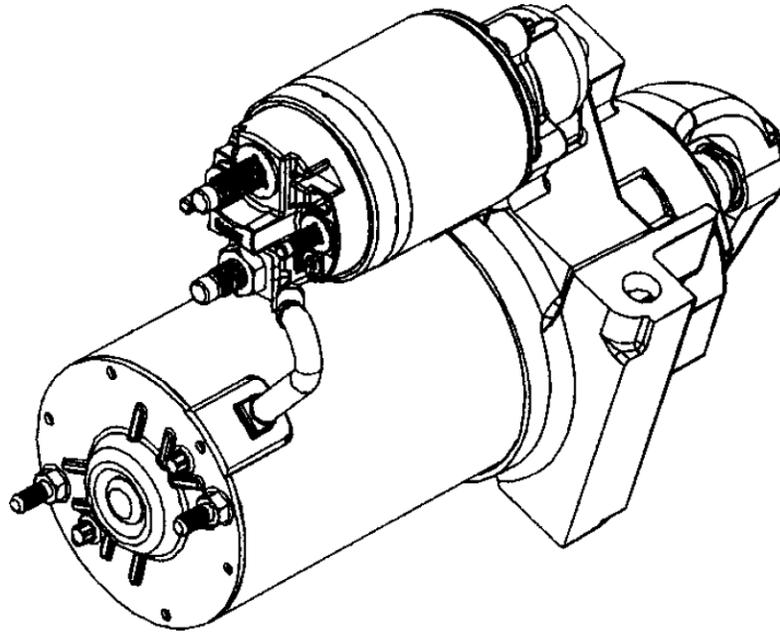


IGNITION COIL



Item#	Description	Qty	GM Part Number
1	Ignition Coil	1	12598697

STARTER



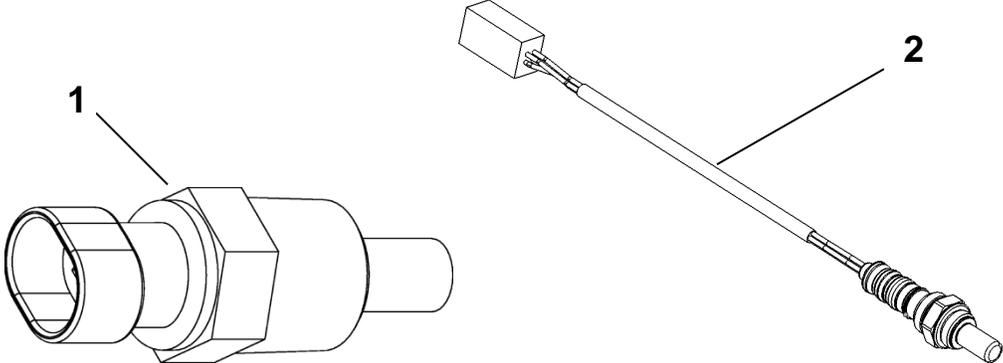
Item #	Description	Qty	IMPCO Part Number
1	Starter	1	821042 See TSB-197

4.3L Dual Fuel Lift Trucks

Spectrum Series II



SENSORS



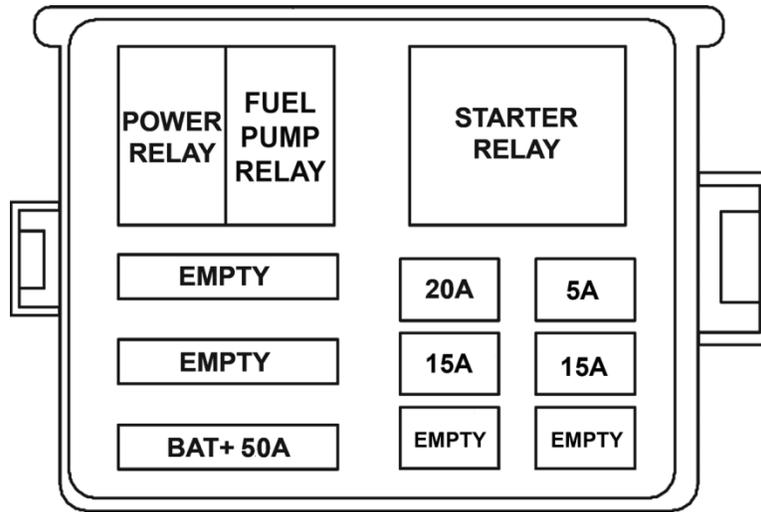
Item #	Description	Qty	GM Part Number
1	Coolant Temp Sensor	1	15326386
2	HEGO, Pre-Catalyst	1	12559850

WIRE HARNESS ENGINE ELECTRICAL



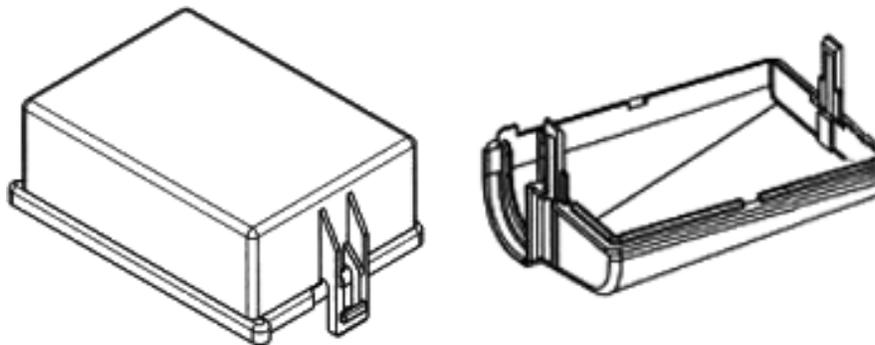
Item #	Description	Qty	Part Number
1	Harness, Engine Electrical DBW	1	E1351040
	Harness, Engine Electrical DBC	1	E1371100

WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX



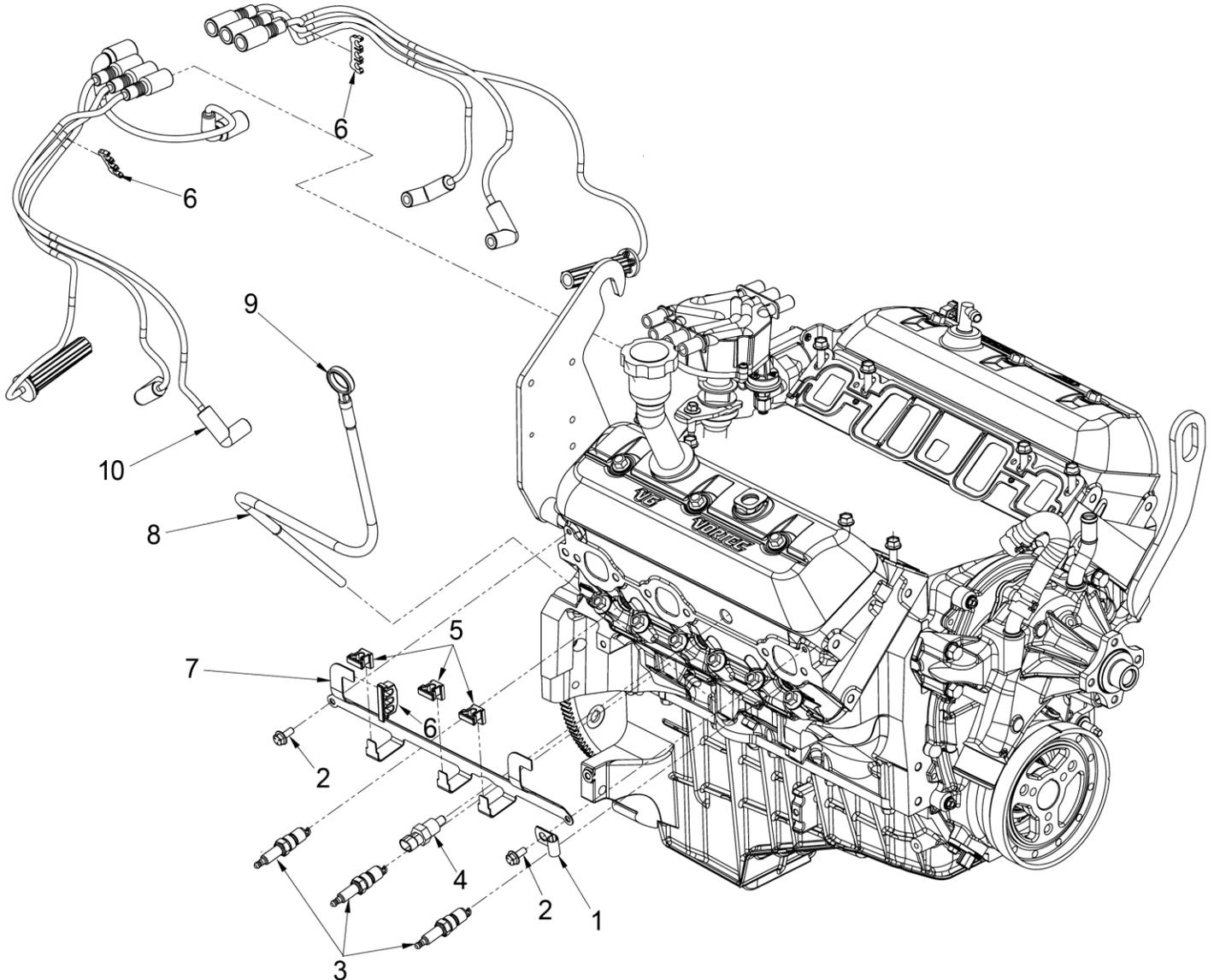
Layout may vary depending on application

Fuse Box Covers



Item #	Description	Qty	IMPCO Part Number
Power Relay	Power Relay	1	885014
Starter Relay	Starter Relay	1	7381290
Alternator 50A Fuse	50A Maxi Fuse	1	7381280
5A Fuse	5A Minifuse	1	7380660
20A Fuse	20A Minifuse	1	7381270
15A Fuse	15A Minifuse	1	7381220
15A Fuse	15A Minifuse	1	7381220
	Fuse Box Cover (Top) w/Label	1	E-6131-1
	Fuse Box Cover (Top) w/o Label	1	E-6131
	Fuse Box Cover (Bottom)	1	E-6132

ENGINE SPARK PLUGS, SPARK PLUG WIRES & OIL GAUGE



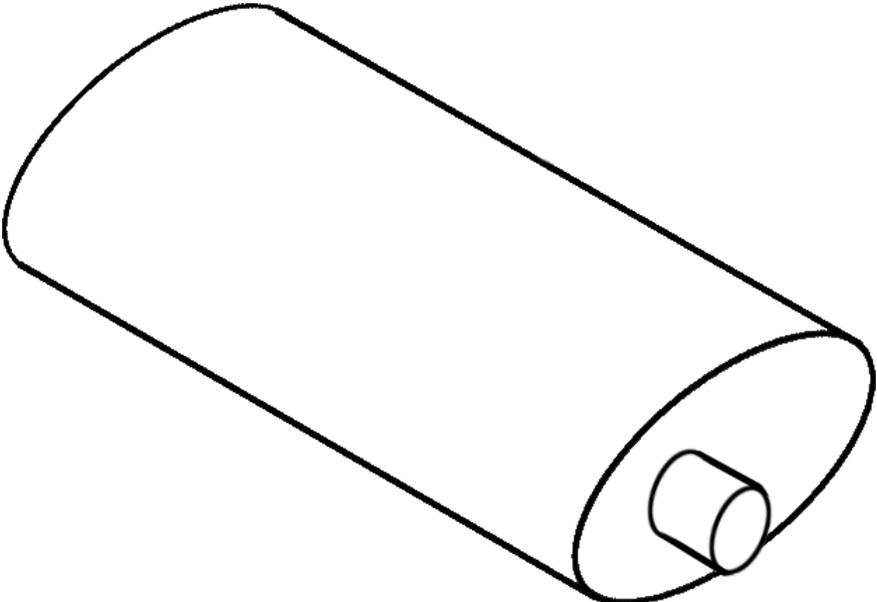
Item #	Description	Qty	Part Number	GM Part Number
1	Clamp, Support 3/8 x 3/8	2	7100290	
2	1/4 -20 x 5/8 Bolt Grade 5	4	90125063	
3	Spark Plug, AC R44LTS	6		19157986
4	Sensor, Coolant Temp	1		15326386
5	Retainer, Ignition Wire	6		12084629
6	Retainer, Spark Plug	2		12052037
7	Bracket, Plug Wire Support	2		12555948
8	Tube, Dipstick	1	7100730	
9	Dipstick, Oil Level	1	7100720	
10	Spark Plug Wire Harness	1		12173579

4.3L Dual Fuel Lift Trucks

Spectrum Series II

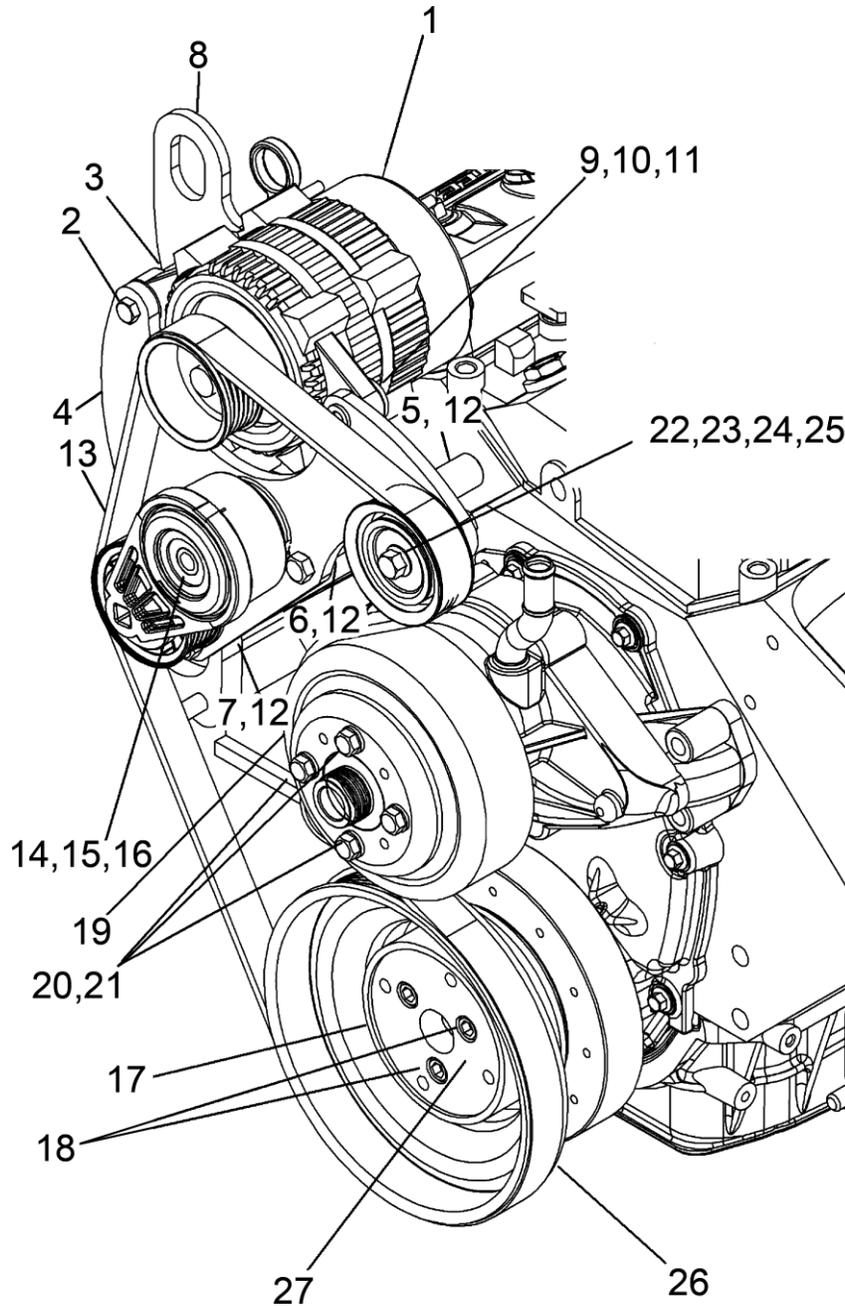


THREE WAY CATALYTIC MUFFLER



Item #	Description	Qty	Part Number
1	Muffler, Three Catalytic Gasoline	1	7332400

ENGINE, FRONT COMPONENTS



4.3L Dual Fuel Lift Trucks

Spectrum Series II



ENGINE, FRONT COMPONENTS

Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Alternator, 12V	1	7245280	
2	Bolt, Alt, Mnt	1	98337050	
3	Spacer, Alt Mnt	1	7245260	
4	Plate, Alt Mnt	1	7245190	
5	Spacer, Alt Mnt 4.65" Lg	1	7245270	
6	Spacer, Alt Mnt 2.84" Lg	2	7245240	
7	Spacer, Alt Mnt 1.56" Lg	2	7245250	
8	Plate Brace. W Left Hk	1	7245180	
9	Washer Lock M8	1	93930000	
10	Bolt, Alt Mnt M8	1	98333110	
11	Nut Flanged M8	1		11500749
12	Bolt, Alt Mnt 3/8	3	90305550	
13	Belt Serpentine	1	NSS	
14	Tensioner Belt	1		12580296
15	Bolt M10 Tensioner	1		7143150
16	Nut, Flanged Tensor Bolt	1	97440000	
17	Adapter Fnt Ply Inner	1	7144780	
17A	Adapter Fnt Ply Outer	1	7144770	
18	Bolt 3/8 Adapt Ply	6	90378100	
19	Pulley, Water Pump	1		12550053
20	Bolt, Ply Water Pump	4	98333020	
21	Washer Loc Water Pump	4	93930000	
22	Pulley, idler	1		33505
23	Spacer, Idler	1	7144810	
24	Bolt, Idler	1	98443060	
25	Nut Idler Bolt	1	97440000	
26	Pulley, Crank Shaft	1		10085754
27	Bolt Ply Crank Shaft	1	90415250	

SERVICE BLOCK



Description	Qty	GM Part Number
Service Block	1	7043321

*Requires that the distributor, ignition coil and other minor bolt-on parts be transferred from the original engine



Spectrum Series III

(2007-2009)



IMPCO technologies offers factory replacement fuel system components for the Spectrum Series III certified engine systems. These components are only available through authorized IMPCO distributors.

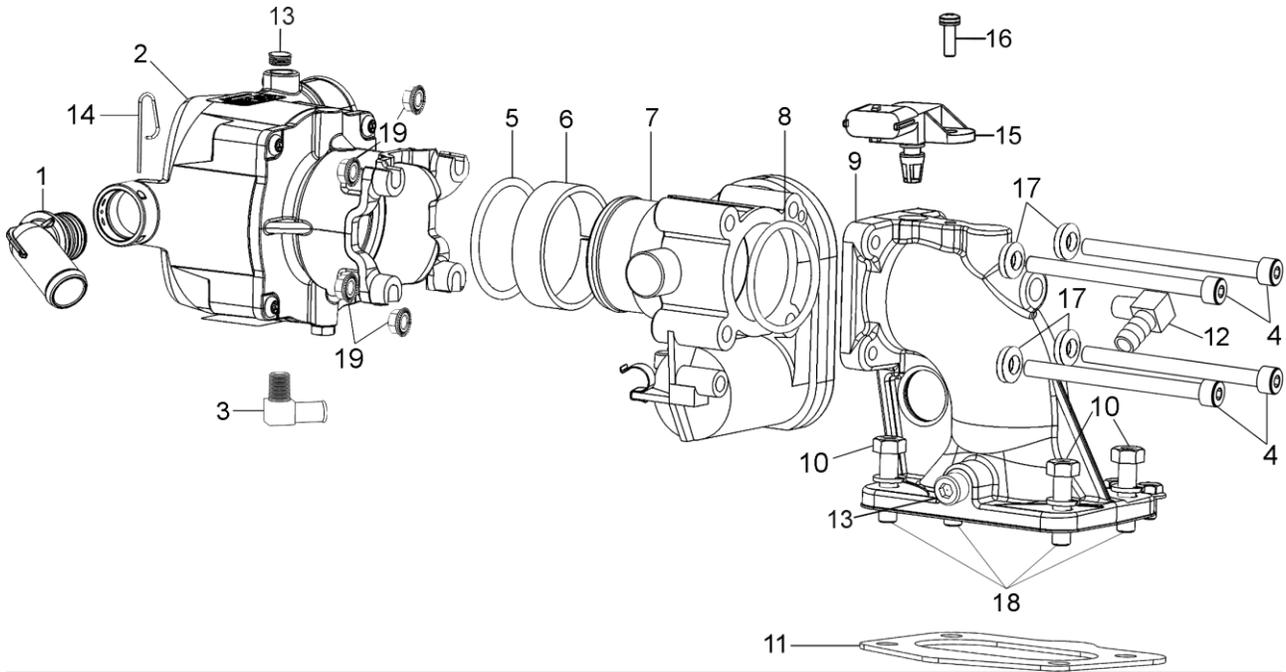
Factory service manuals, repair procedures, and TSBs must be acquired and used through the OEM parts network. IMPCO Technologies, is not able to supply these materials.

All Spectrum III ECMs are sold as un-programmed generic hardware modules. The service technician must flash the appropriate .mot file before the ECM can be used in the application. IMPCO Technologies does not supply the .mot files. These files must be acquired through the OEM service network. Service technicians must be factory authorized to access these files. If you are not able to access these files through your OEM network, you must purchase a pre-programmed ECM through your authorized OEM parts supplier. To receive Spectrum Series III training please visit our website at impcotechnologies.com.

4.3L Toyota Lift Trucks	352
4.3L MCFA Lift Trucks.....	391
NMHG 2.0 & 2.2L Lift Trucks.....	417
4.3L Generic Lift Trucks	429
3.0L Generic Lift Trucks	449

4.3L Toyota Lift Trucks

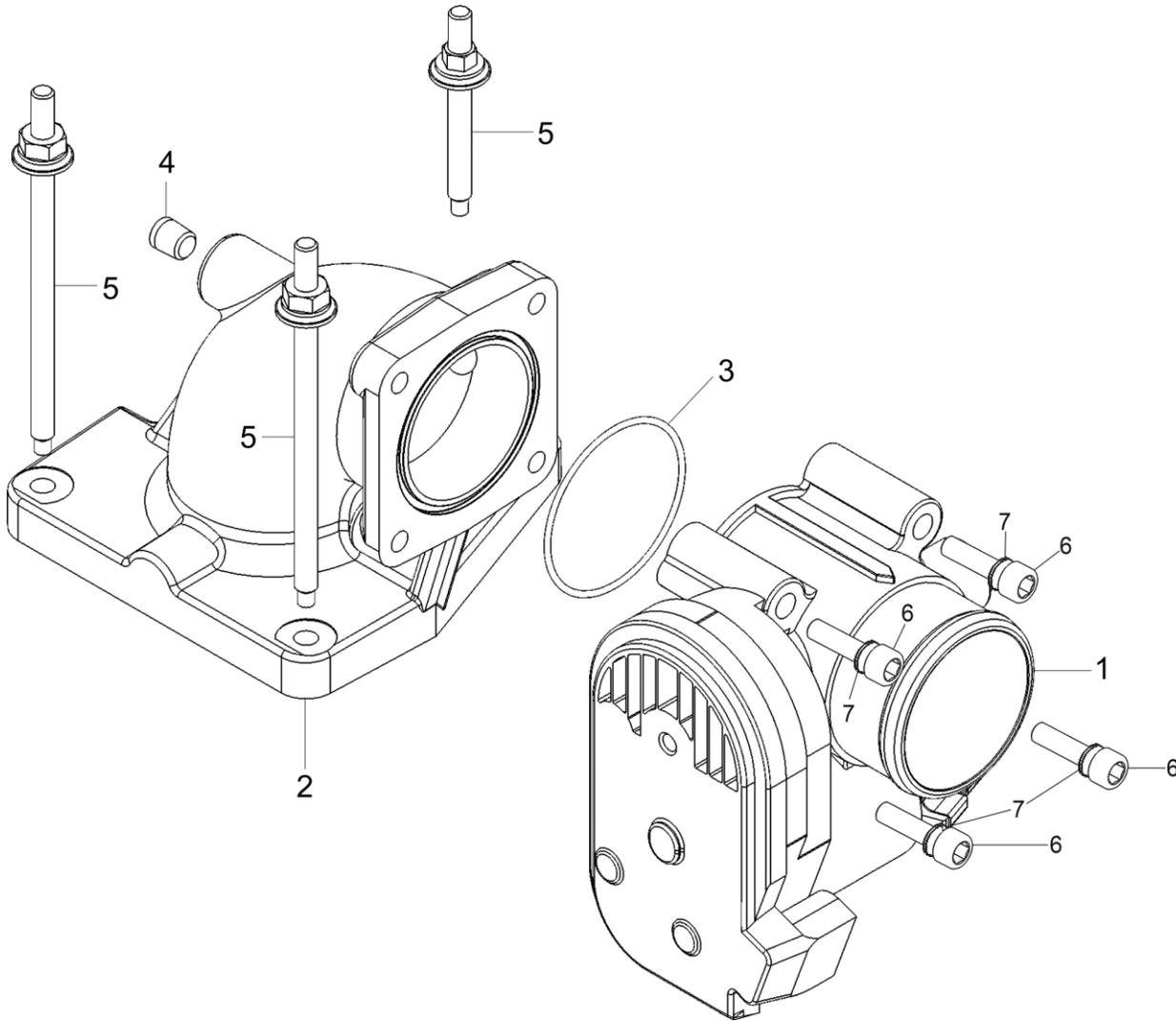
MIXER AND THROTTLE BODY ASSEMBLY (LPG, 2007-2008)



Item #	Description	Qty	Part Number
1	Fitting, 70-degree, 3/4" OD	1	AF4-31197-001
2	Carburetor ASM, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8NPT 3/8Hs 90 EL Brass	1	F4-12
4	Screw, Hex Sock Cap	4	S1-30295-0670
5*	O-Ring Nitrile	1	S3-1524-004
6	Sleeve, Plastic Bosch Throttle	1	S6-30976-001
7	Bosch Throttle Body, 40MM	1	E1312100
8*	O-Ring Nitrile	1	S3-1524-003
9	Adapter, Elbow, 4.3L LX-BOS SIII LP	1	A3-30940-001
10	Nut, Hex Flange, Serrated 5/16-24	4	35000160
11	Gasket, Carb Mounting, 2BBL, 4.3L	1	G1-25667
12	Fitting, 1/8 NPT 3/8 Hs 90 EL Brass	1	401-02
13	Plug	2	P3-46
14	Retaining Pin	1	P1-30559
15	TMAP		See Sensors Section
16	Screw, M5x0.8x16Mn, Ph Sems	1	S1-30047-001
17	Washer, Lock	4	W1-31039-006
18	Stud, 5/16 x 1.5 LG18-24	4	35000181
19	Nut, Hex Flange, Serrated	4	N1-30876-M06

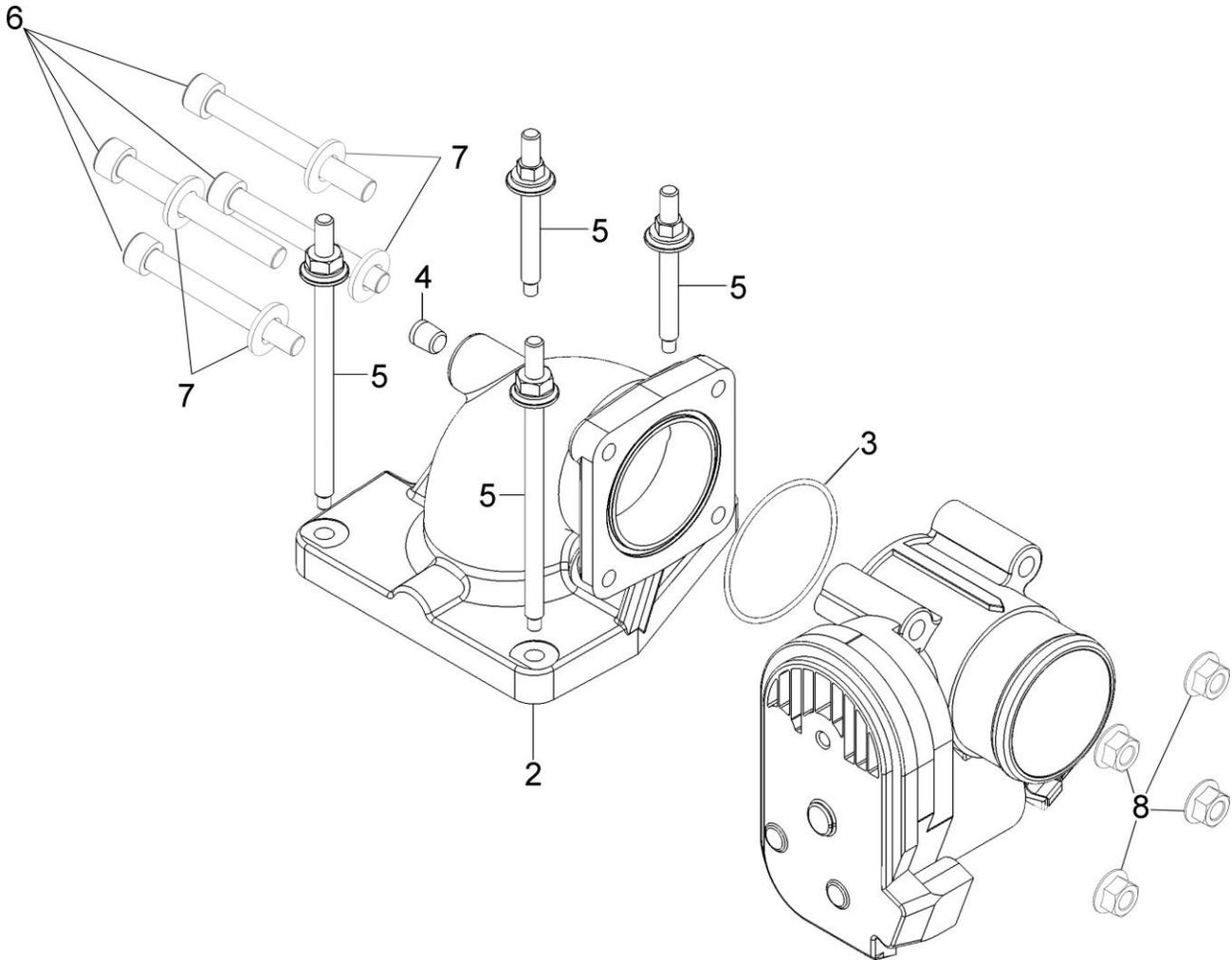
*Included in Repair Kit RK-FT150

ADAPTER AND THROTTLE BODY ASSEMBLY (GASOLINE, 2007)



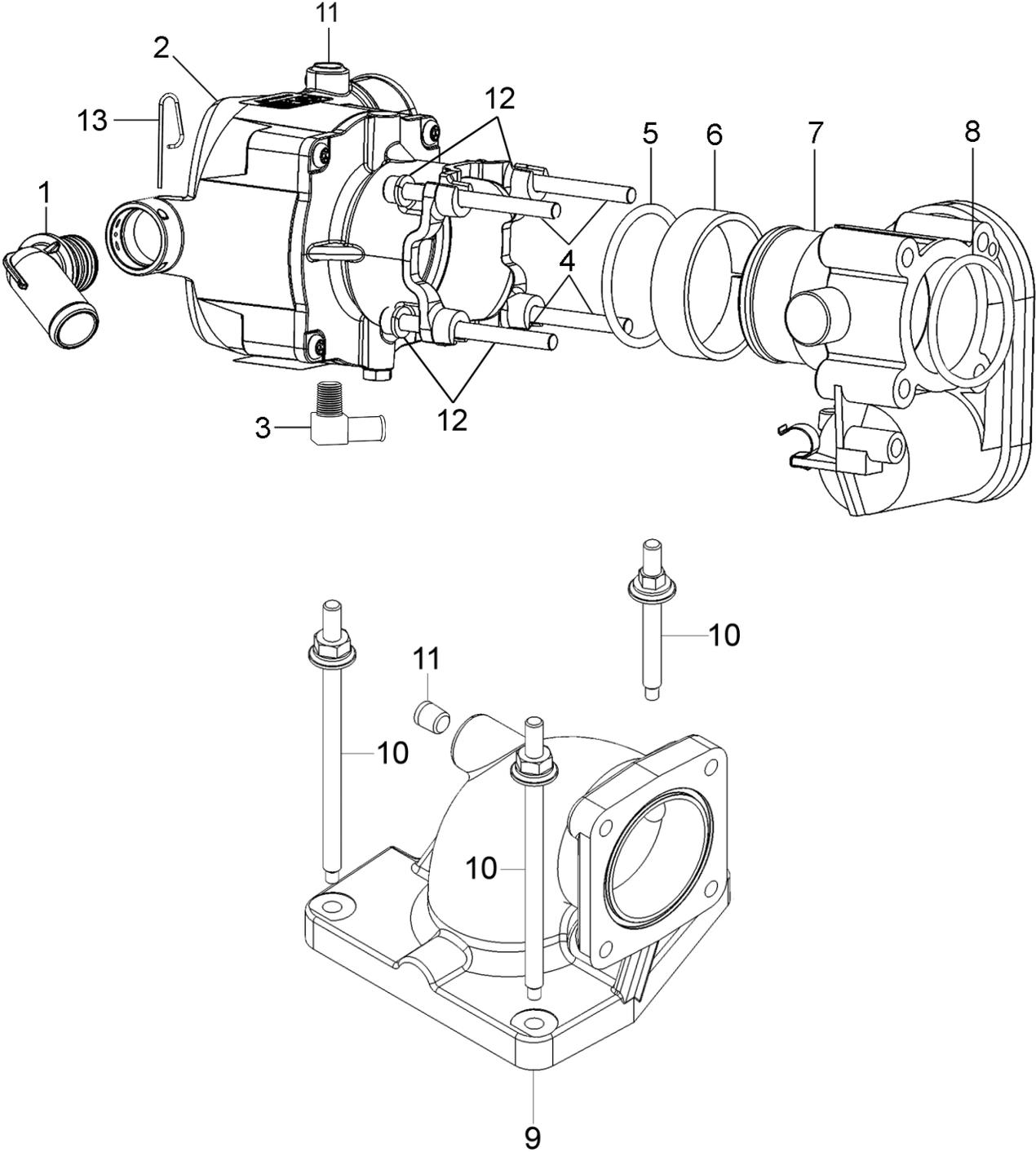
Item#	Description	Qty	Part Number	GM Part Number
1	Bosch Throttle Body, 40MM	1	E1312100	
2	Adapter, Elbow, MFI to BOSCH DF	1	A3-30941-001	
3	O-Ring Nitrile	1	S3-1524-003	
4	Plug	1	P3-46	
5	Stud Kit	1		17113216
6	Screw, Hex Sock Cap M6 x 50MM	4	S1-30295-0650	
7	Washer, Conical Spring 6mm	4	W1-31039-006	

ADAPTER AND THROTTLE BODY ASSEMBLY (GASOLINE, 2008)



Item#	Description	Qty	Part Number
1	Bosch Throttle Body, 40MM	1	E1312100
2	Adapter, Elbow, MFI to BOSCH DF	1	A3-50428-001
3	O-Ring Nitrile	1	S3-1524-003
4	Plug	1	P3-46
5	Screw, Hex Flange, M6-1.0 X 25MM	4	S1-30871-02-0625
6	Screw, Hex Sock Cap M6 x 50MM	4	S1-30295-0655
7	Washer, Conical Spring 6mm	4	W1-31039-006
8	Nut, Hex Flange, Serrated	4	N1-30876-M06

MIXER AND THROTTLE BODY ASSEMBLY (BI-FUEL, 2007)

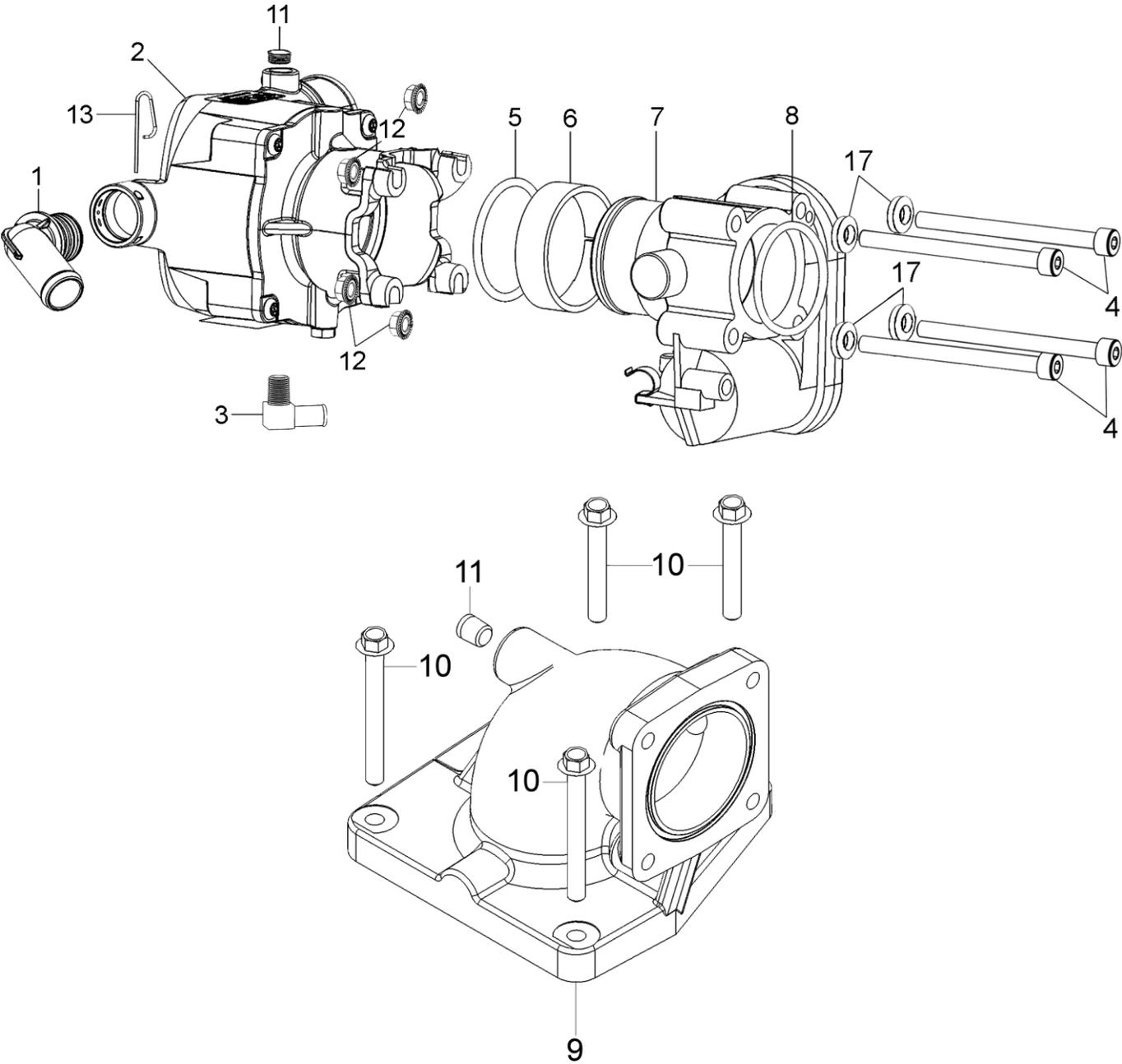


MIXER AND THROTTLE BODY ASSEMBLY (BI-FUEL, 2007)

Item#	Description	Qty	Part Number	GM Part Number
1	Fitting, 70-degree, 3/4" OD	1	AF4-31197-001	
2	Carburetor ASM, 20-150	1	FT150-30919-20-001	
3	Fitting, 1/8NPT 3/8Hs 90EI Brass	1	F4-12	
4	Screw, Hex Sock Cap	4	S1-30295-0665	
5*	O-Ring Nitrile	1	S3-1524-004	
6	Sleeve, Plastic Bosch Throttle	1	S6-30976-001	
7	Bosch Throttle Body, 40MM	1	E1312100	
8*	O-Ring Nitrile	1	S3-1524-003	
9	Adapter, Elbow, MFI To Bosch - DF	1	A3-30941-001	
10	Stud Kit (GM)	1		17113216
11	Plug 1/8 NPT Soc Head	2	P3-46	
12	Washer, Lock	4	W1-31039-006	
13	Retaining Pin	1	P1-30559	

*Included in Repair Kit RK-FT150

MIXER AND THROTTLE BODY ASSEMBLY (BI-FUEL, 2008)

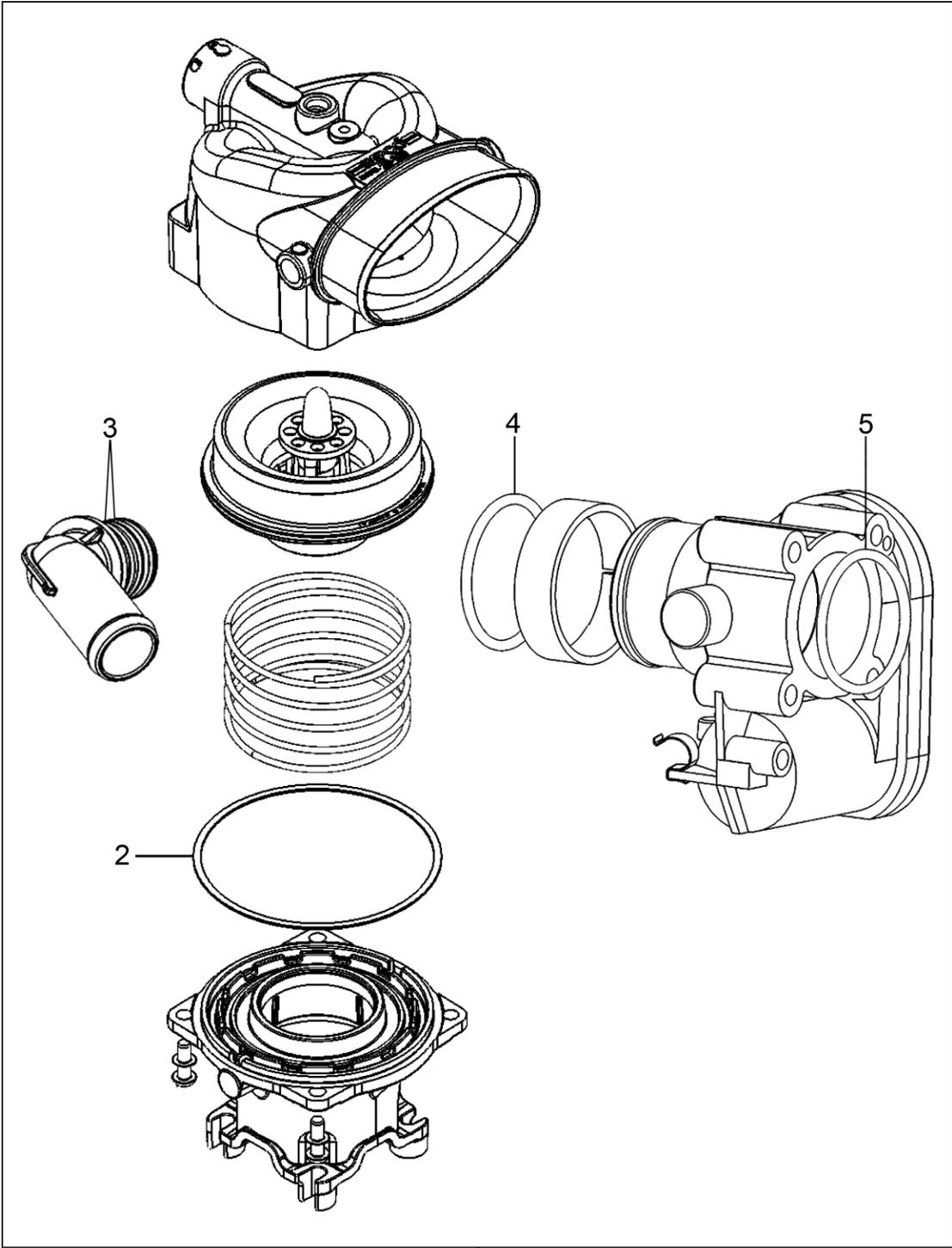


MIXER AND THROTTLE BODY ASSEMBLY (BI-FUEL, 2008)

Item#	Description	Qty	Part Number
1	Fitting, 70-degree, 3/4" OD	1	AF4-31197-001
2	Carburetor ASM, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8NPT 3/8Hs 90El Brass	1	F4-12
4	Screw, Hex Sock Cap	4	S1-30295-0670
5*	O-Ring Nitrile	1	S3-1524-004
6	Sleeve, Plastic Bosch Throttle	1	S6-30976-001
7	Bosch Throttle Body, 40MM	1	E1312100
8*	O-Ring Nitrile	1	S3-1524-003
9	Adapter, Elbow, MFI to BOSCH DF	1	A3-50428-001
10	Nut, Hex Flange, Serrated 5/16-24	4	35000160
11	Gasket, Carb Mounting, 2BBL, 4.3L	1	G1-25667
12	Fitting, 1/8 NPT 3/8 Hs 90 EL Brass	1	401-02
13	Plug	2	P3-46
14	Retaining Pin	1	P1-30559
15	TMAP	See Sensors Section	
16	Screw, M5x0.8x16Mn, Ph Sems	1	S1-30047-001
17	Washer, Lock	4	W1-31039-006
18	Stud, 5/16 x 1.5 LG18-24	4	35000181
19	Nut, Hex Flange, Serrated	4	N1-30876-M06

*Included in Repair Kit RK-FT150

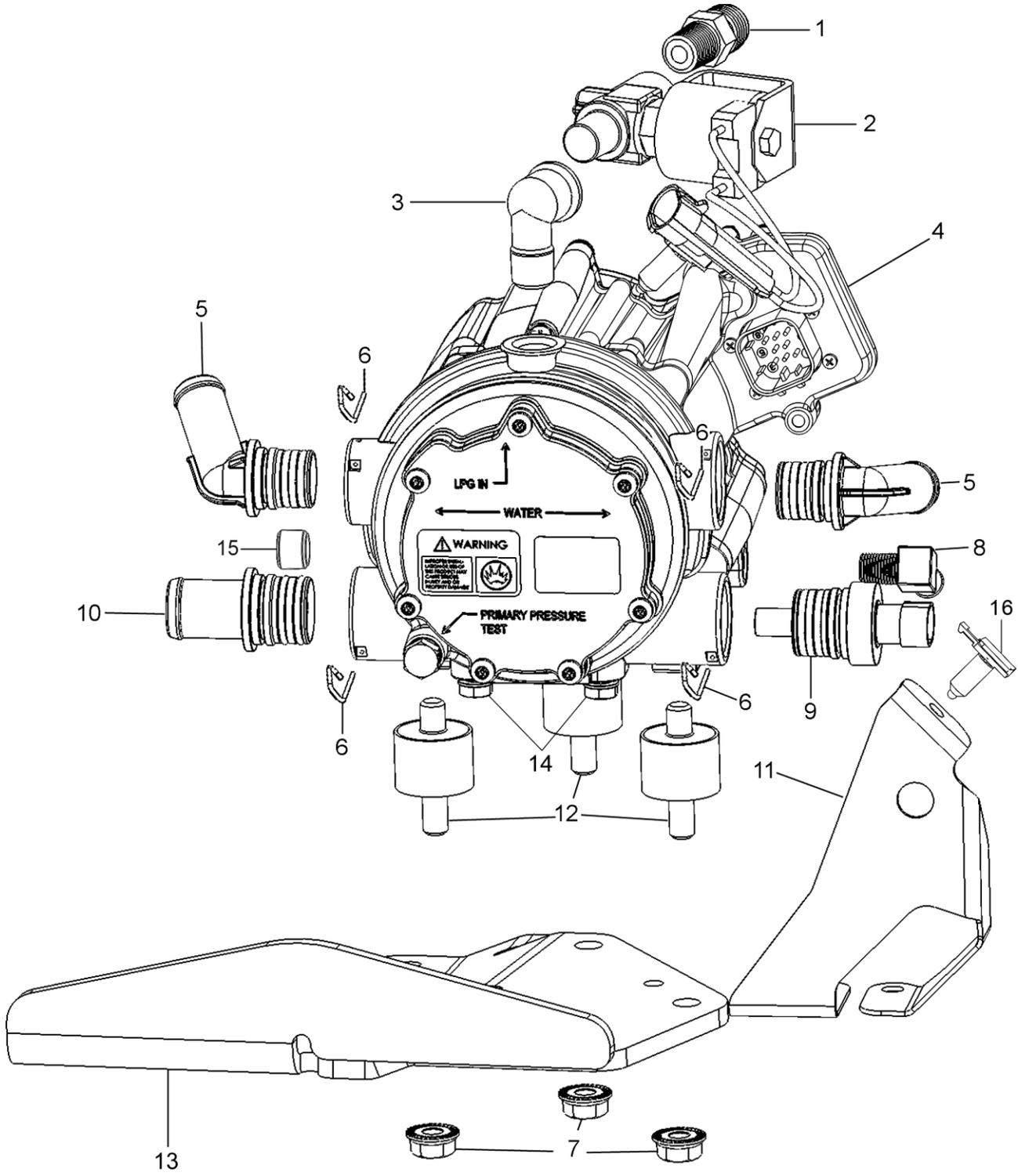
MIXER REPAIR KIT (LPG & BI-FUEL, 2007-2008)



MIXER REPAIR KIT (LPG & BI-FUEL, 2007-2008)

Item#	Description	Qty	Part Number
1	(Includes Items 2-5)	1	RK-FT150
2	Gasket	1	G1-31252-150
3	O-Ring	2	S3-31195-001
4	O-Ring	1	S3-1524-004
5	O-Ring	1	S3-1524-003

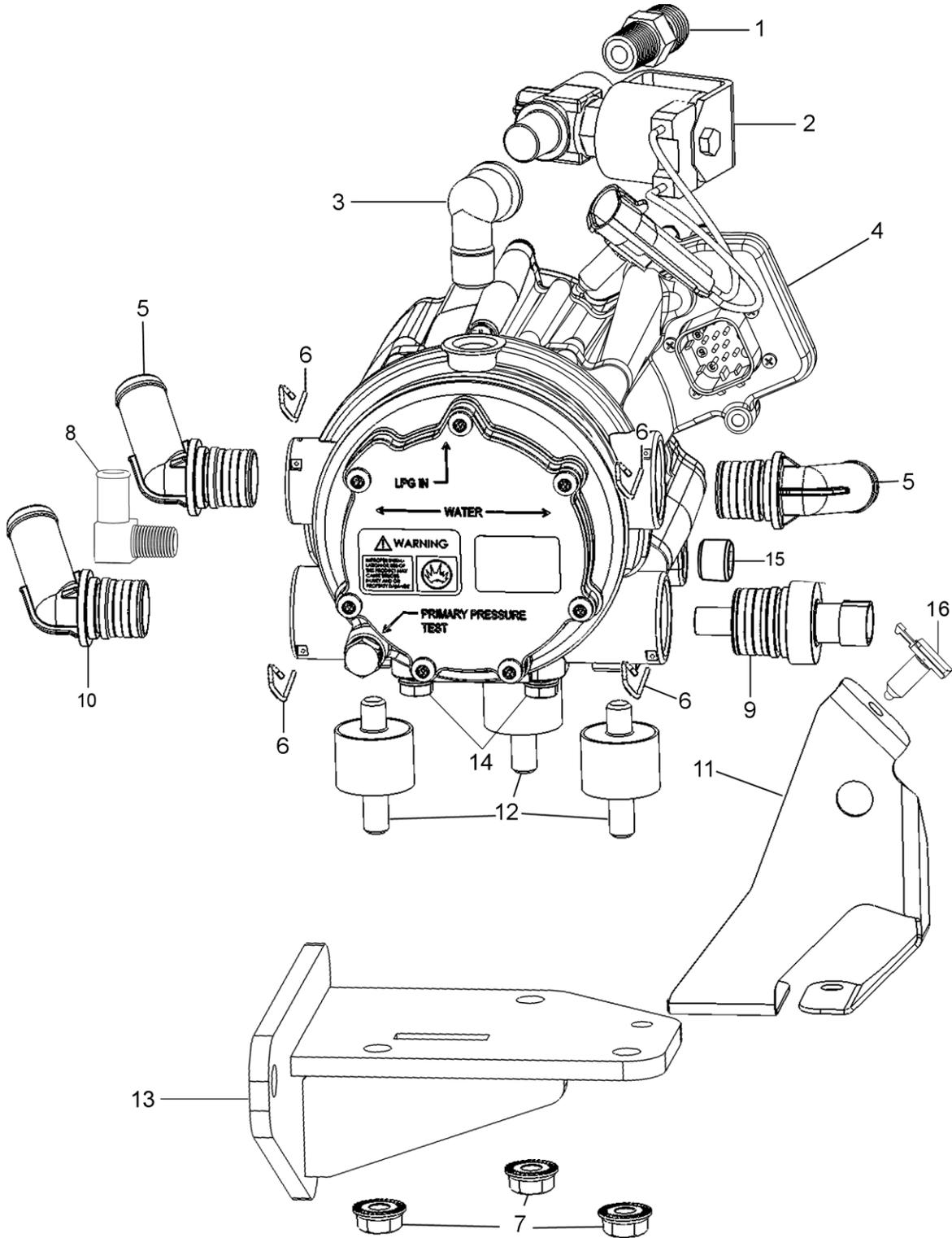
EPR ASSEMBLY (LPG, 2007-2008)



EPR ASSEMBLY (LPG, 2007-2008)

Item #	Description	Qty	Part Number
1	Fitting, 1/4" NPT 3/8 Flare Brass	1	F4-14220
2	Valve, LPG Shut-Off	1	ET98-30515-001
3	Fitting, 1/4" NPT Street 90 elbow brass	1	F4-16238-1
4	Electronic Pressure Regulator, EPR	1	EPR-50388-001
5	Fitting Assembly, 70 Degree	2	AF4-30614
6	Retaining Clip	4	P1-30559
7	Nut, Hex Flange, Serrated	3	N1-30876-M08
8	Fitting, 90 Deg. 1/8" NPT X 3/8	1	F4-12
9	Temperature Sensor Ass'y	See Sensors	
10	Fitting Ass'y, Straight 3/4"	3	AF4-31193-001
11	Bracket, Lockoff Connector	1	B4-50094
12	Mount, Vibration Damping	3	R5-50080-002
13	Bracket, EPR, 4.3L Series III	1	B4-50239-001
14	Screw, Hex Head Sems, M6-1 X 10mm	2	S1-30283-0620
15	Plug, 1/8" NPT Soc Head	1	P3-46
16	Clip Attachment	1	12186353

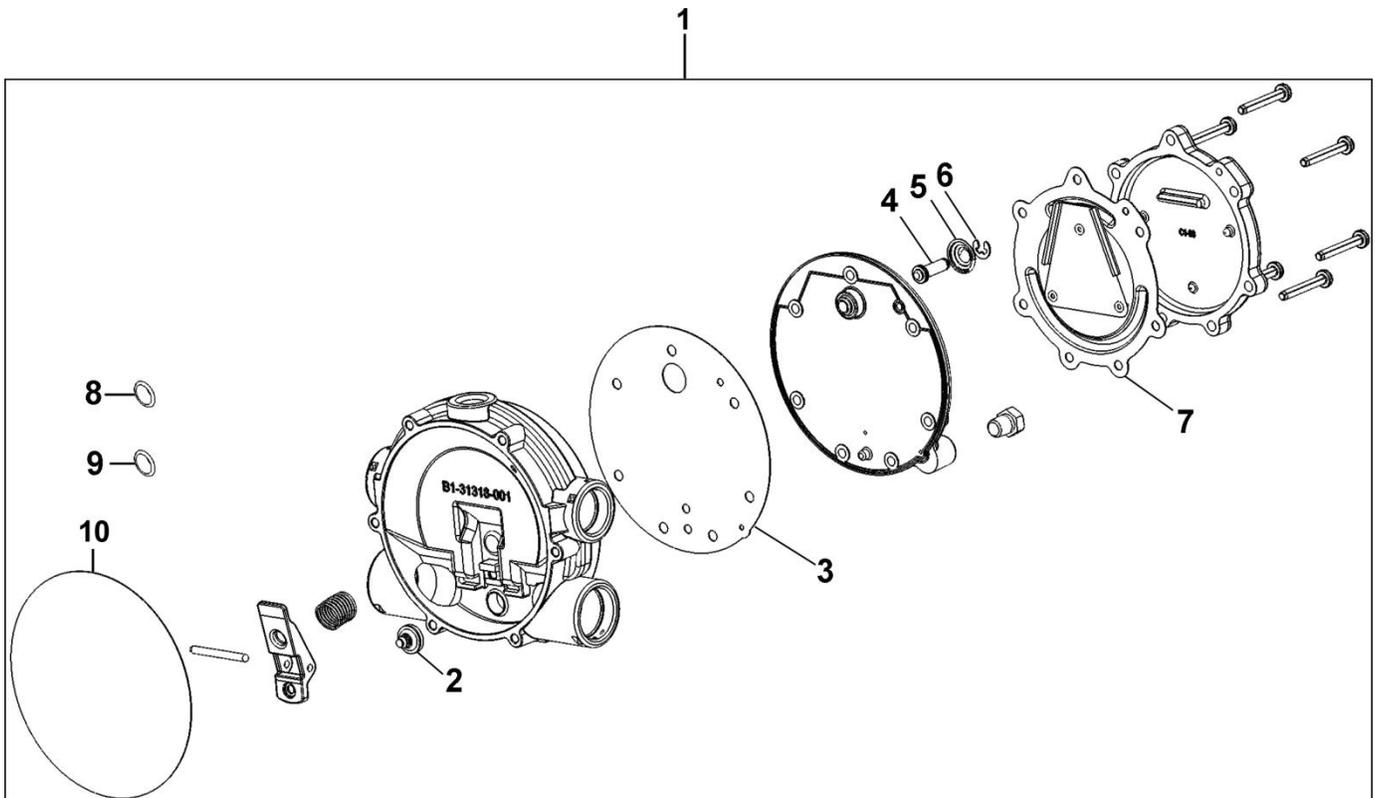
EPR ASSEMBLY (BI-FUEL, 2007-2008)



EPR ASSEMBLY (BI-FUEL, 2007-2008)

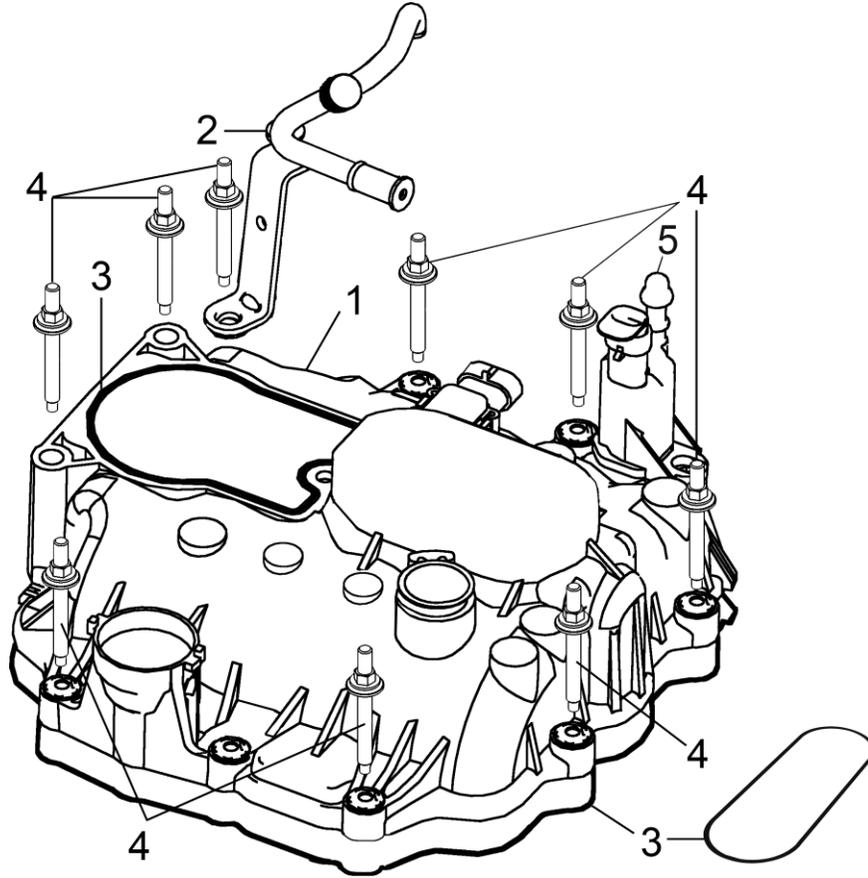
Item #	Description	Qty	Part Number
1	Fitting, 1/4" NPT 3/8 Flare Brass	1	F4-14220
2	Valve, LPG Shut-Off	1	ET98-30515-001
3	Fitting, 1/4" NPT Street 90 elbow brass	1	F4-50393-001
4	Electronic Pressure Regulator, EPR	1	EPR-50388-001
5	Fitting Assembly, 70 Degree	2	AF4-30614
6	Retaining Clip	4	P1-30559
7	Nut, Hex Flange, Serrated M8 x 1.25	3	N1-30876-M08
8	Fitting, 90 Deg. 1/8" NPT X 3/8	1	F4-12
9	LPG Temperature Sensor Ass'y	See Sensors	
10	Fitting Ass'y, 70 Degree 3/4"	1	AF4-31197-001
11	Bracket, Lockoff Connector	1	B4-50094
12	Mount, Vibration Damping	3	R5-50080-002
13	Bracket, EPR, 4.3L Series III	1	B4-30943-001
14	Screw, Hex Head Sems, M6-1 X 10mm	2	S1-30283-0620
15	Plug, 1/8 NPT, Soc Head	1	P3-46
16	Clip, Attachment	1	12186353

REGULATOR REPAIR KIT (LPG & BI-FUEL, 2007-2008)



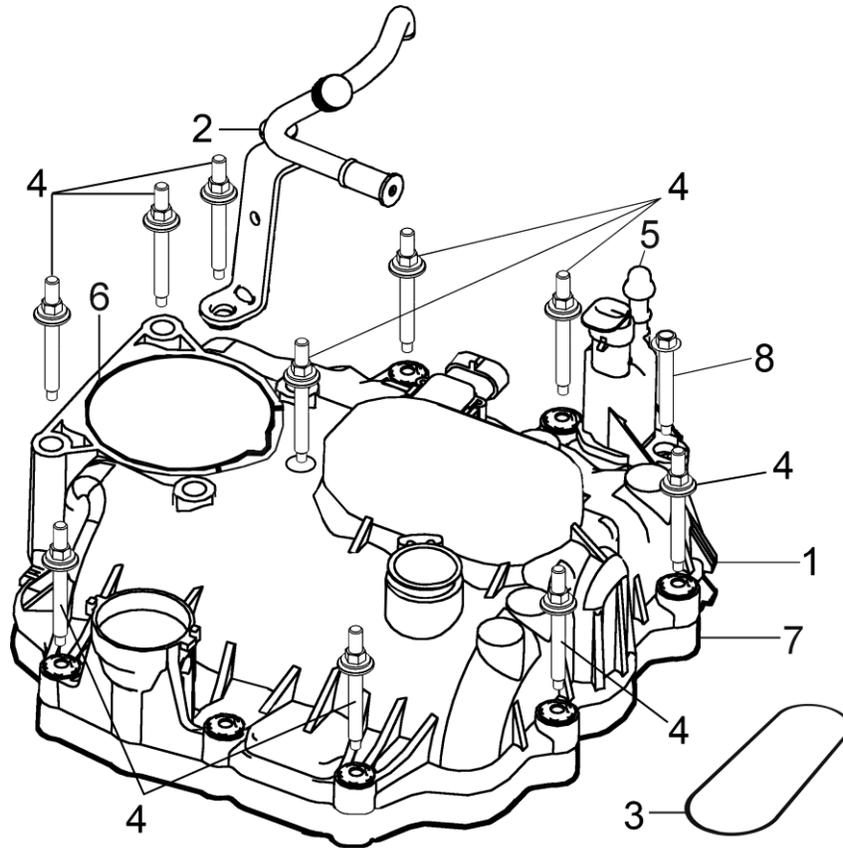
Item#	Description	Qty	Part Number
1	Kit, Minor Repair (Includes items 2-10 only)	1	RK-EPR-3
	Kit, Major (Includes All parts shown in box, assembled)	1	RK-EPR-4
2	Seat, Secondary	1	NSS
3	Gasket, Body Secondary	1	NSS
4	Pin, Primary	1	NSS
5	Spring, Primary	1	NSS
6	Clip, Primary	1	NSS
7	Diaphragm, Primary	1	NSS
8	O-ring	4	NSS
9	O-ring	4	NSS
10	Seal, Clamp Plate, EPR	1	NSS

INTAKE MANIFOLD COVER (GASOLINE & BI-FUEL, 2007)



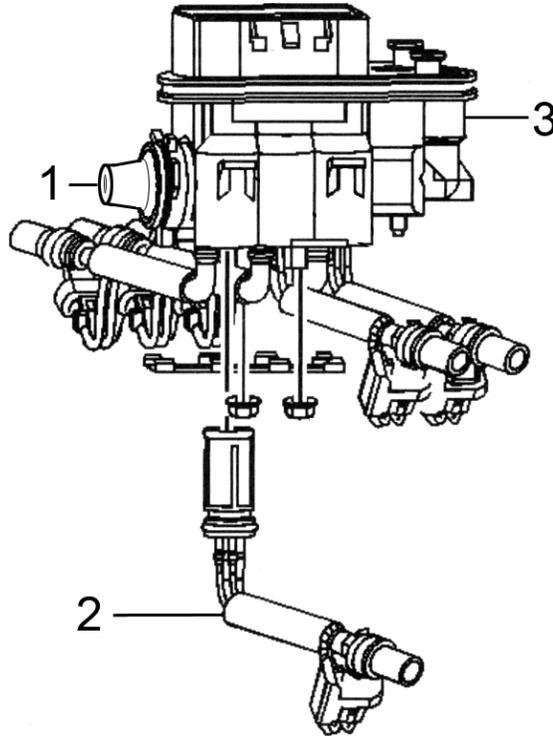
Item#	Description	Qty	Part Number	GM Part Number
1	Cover, Upper Intake Manifold	1		17113542
2	Fuel Pipe	1		89018054
3	Gasket Kit, Intake/Adapter, Manifold Cover & Fuel Metering Body	1		10108445
4	Stud Kit	1		17113216
5	Cap, Vacuum	1	C2-10760-003	

INTAKE MANIFOLD COVER (GASOLINE & BI-FUEL, 2008)



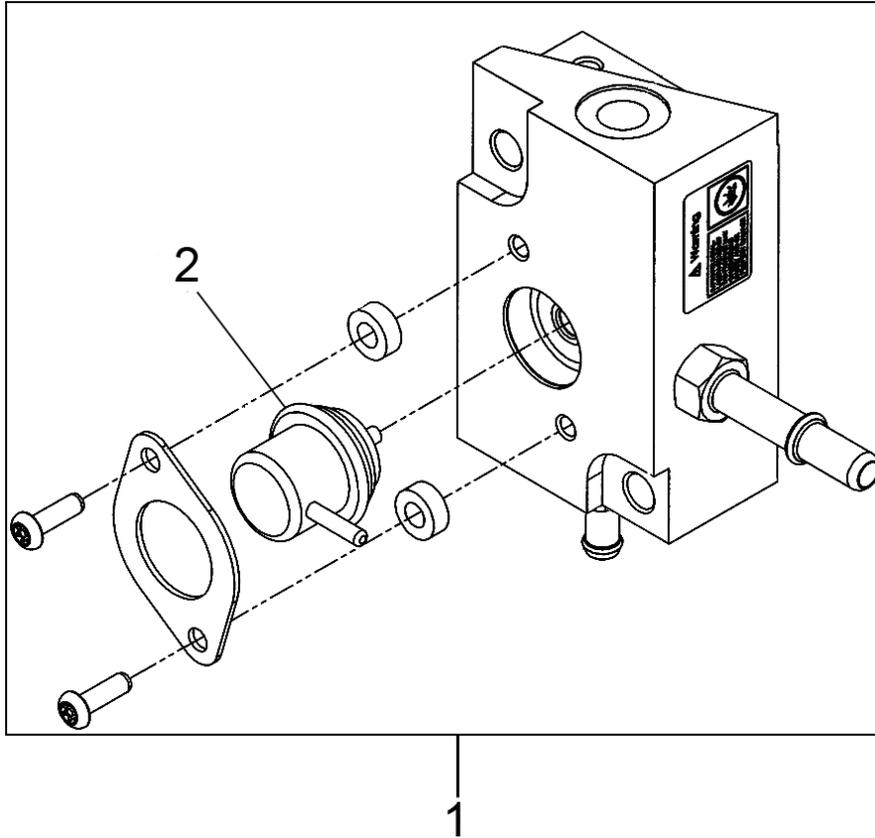
Item #	Description	Qty	Part Number	GM Part Number
1	Cover, Upper Intake Manifold	1		12595827
2	Fuel Pipe	1		89018054
3	Gasket (Includes Injector O-rings and Damper O-ring)	1		12603372
4	Stud/Bolt	10		12598042
5	Cap, Vacuum	1	C2-10760-003	
6	Gasket, Throttle Body/Adapter	1		12599019
7	Gasket, Intake Manifold Cover	1		19169262
8	Bolt	1		89017991

FUEL METERING BODY (GASOLINE & BI-FUEL, 2007-2008)



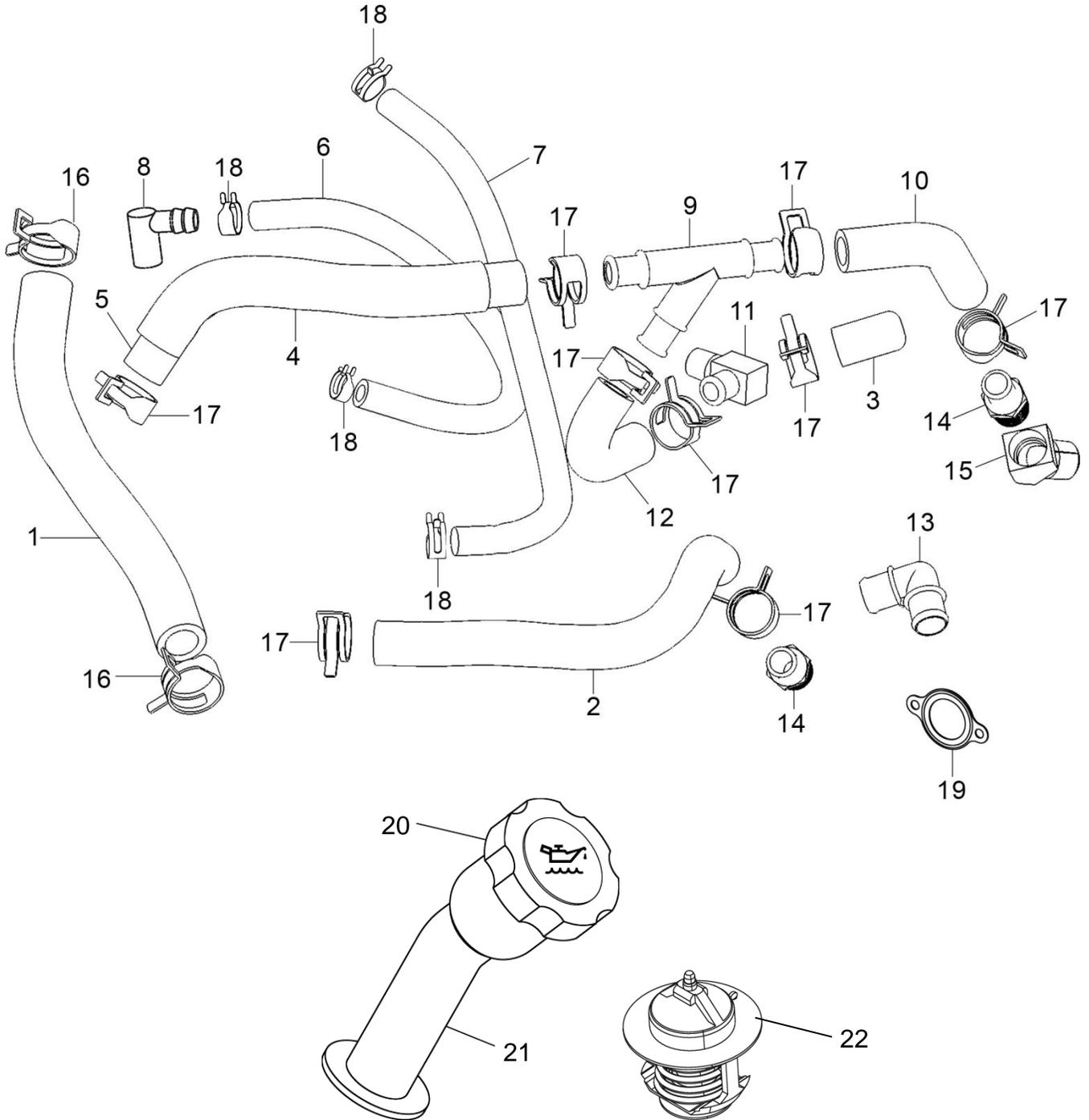
Item #	Description	Qty	GM Part Number
1	Damper	1	89017873
2	Fuel Injector	6	88894353
3	Fuel Metering Body	1	17113273

FUEL PRESSURE REGULATOR (GASOLINE & BI-FUEL, 2007-2008)



Item #	Description	Qty	Part Number
1	Regulator, Fuel Pressure Assembly (Includes #2)	1	MD-50069
2	Regulator	1	8573C

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (LPG, 2007-2008)



4.3L Toyota Lift Trucks

Spectrum Series III



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (LPG, 2007-2008)

Item#	Description	Qty	Part Number	GM Part Number
1	Hose, 3/4" Fuel/Oil 11.25"L	1	H1-19253-012	
2	Hose, Coolant, 300MM	1	H1-19255-005	
3	Cap, Rubber, 5/8"	1	7110790	
4	Conduit, Round Convoluted	1	NSS	
5	Hose, 5/8" Coolant 230mm	1	H1-19255-020	
6	Hose, 3/8" ID Fuel /Oil 14.75"	1	H1-19253-001	
7	Hose, 3/8" ID Fuel/Oil 17.25"	1	H1-19253-019	
8	Fitting, Elbow 90 degree PCV	1	F4-30912-001	
9	Fitting, 3/4" Water 5/8" Nylon	1	F4-43	
10	Hose, 5/8" ID Coolant Formed	1	H1-50244-001	
11	Fitting, 3/8" NPT 5/8" 90 Elbow Nylon	1	F4-17	
12	Hose, 5/8" ID Coolant Formed	1	H1-50518-001	
13	Elbow, Vent	1		1263193
14	Fitting, 1/2" NPT 5/8" NIP Brass	2	F4-17920	
15	Fitting 45 Street Elbow	1	80082	
16	Clamp, Hose	2	C2-16664-4	
17	Clamp, Hose, .88 OD Blk	9	C2-16664-2	
18	Clamp, Hose, .69 OD	4	C2-16664-1	
19	Gasket, Thermostat Housing	1		10105135
20	Oil Fill Cap	1		12573336
21	Oil Fill Tube Extension	1		12570623
22	Thermostat	1		10202456

4.3L Toyota Lift Trucks

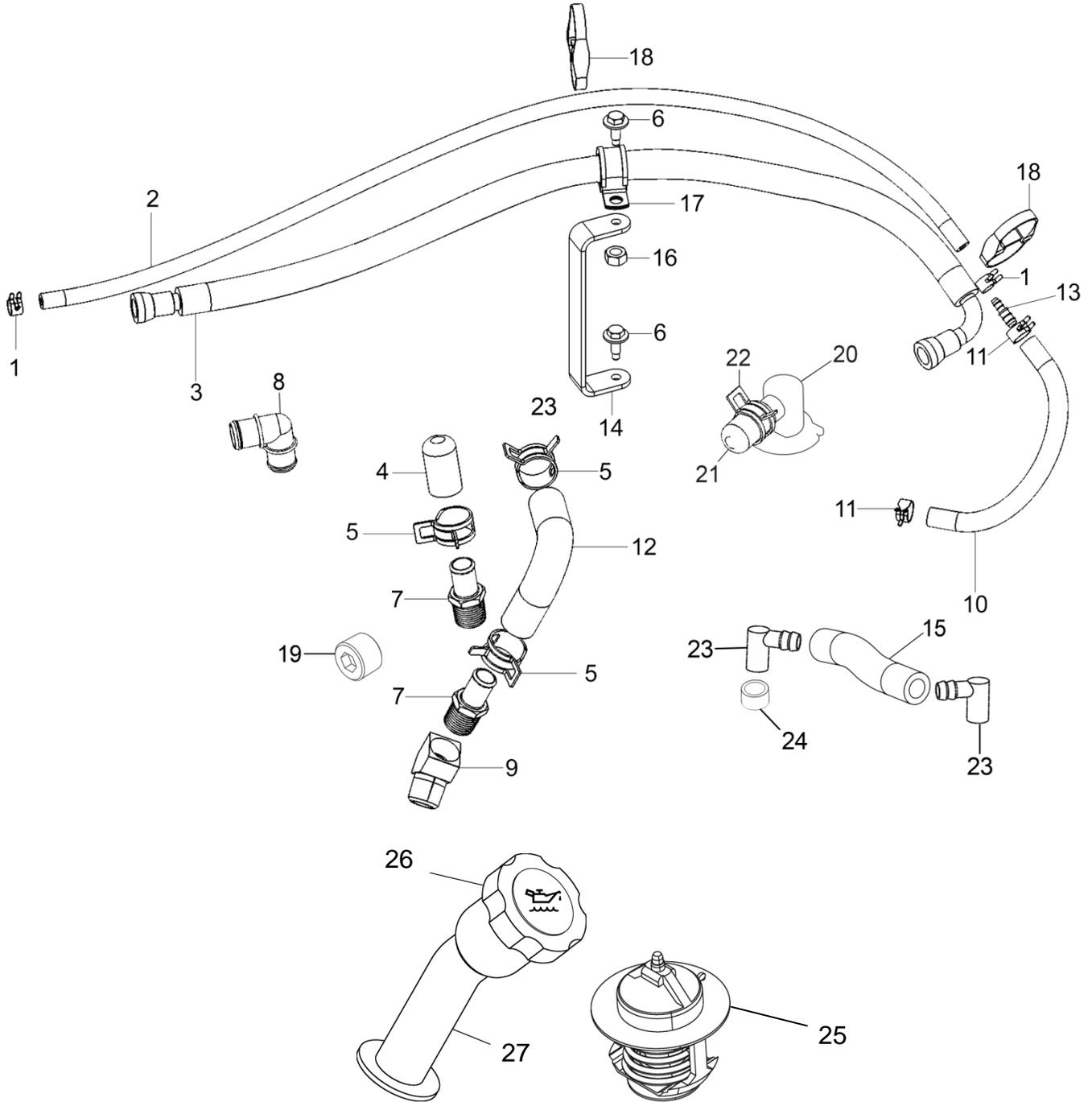
Spectrum Series III



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (GASOLINE, 2007)

Item #	Description	Qty	Part Number	GM Part Number
1	Clamp, Spring, Green 7/16 O.D. Hose	2	C2-16664-7	
2	Hose, Fuel 1/4" ID	1	H1-19253-017	
3	Hose, Fuel 3/16" ID	1	AH1-50062-001	
4	Cap, Rubber, 5/8"	1	7110790	
5	Clamp, Hose	3	C2-16664-2	
6	Screw, Hex Hd Con Sems M6 X 1.0 X 20	3	S1-30283-0620	
7	Fitting, Water, 3/8" NPT X 5/8 Hose 90°	1	F4-17	
8	Fitting, 1/2NPT 5/8hs Nip Brass	2	F4-17920	
9	Fitting Brass, Elbow 45 deg x 1/2P	1	80082	
10	Hose, Fuel	1	H1-19253-018	
11	Clamp, Hose-.5 in O.D. Nominal	2	C2-16664-8	
12	Hose, Coolant, Cut-4.75 In	1	H1-19255-021	
13	Adapter, Hose	1	F4-14382	
14	Bracket, Fuel Line Support	1	B4-50398-001	
15	Clamp, Loop Cushioned, 5/16" Bolt X 1.00" I.D.	2	C2-30880-018	
16	Nut, Hex M6 x 1.00	1	97220000	
17	P-Clamp 5/8" Support	1	C2-30880-010	
18	Tie Wrap, Double Hose Clamp	2	T8-14109-2	
19	Adapter, PCV, 4.3L	1		12552750
20	Fitting, Intake 13mm	1	F4-50150	
21	Cap, Vacuum .46 ID X .68 OD X .75 LG	1	C2-30500-003	
22	Clamp, Hose	1	C2-16664-3	
23	Tube, PVC	1	T1-50148	
24	Elbow, GM Vent	1		1263193
25	Plug, 3/8" NPT, Soc Head Brass	1	P3-12	
26	Thermostat	1		10202456
27	Oil Fill Cap	1		12573336
28	Oil Fill Tube Extension	1		12570623

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (GASOLINE, 2008)



4.3L Toyota Lift Trucks

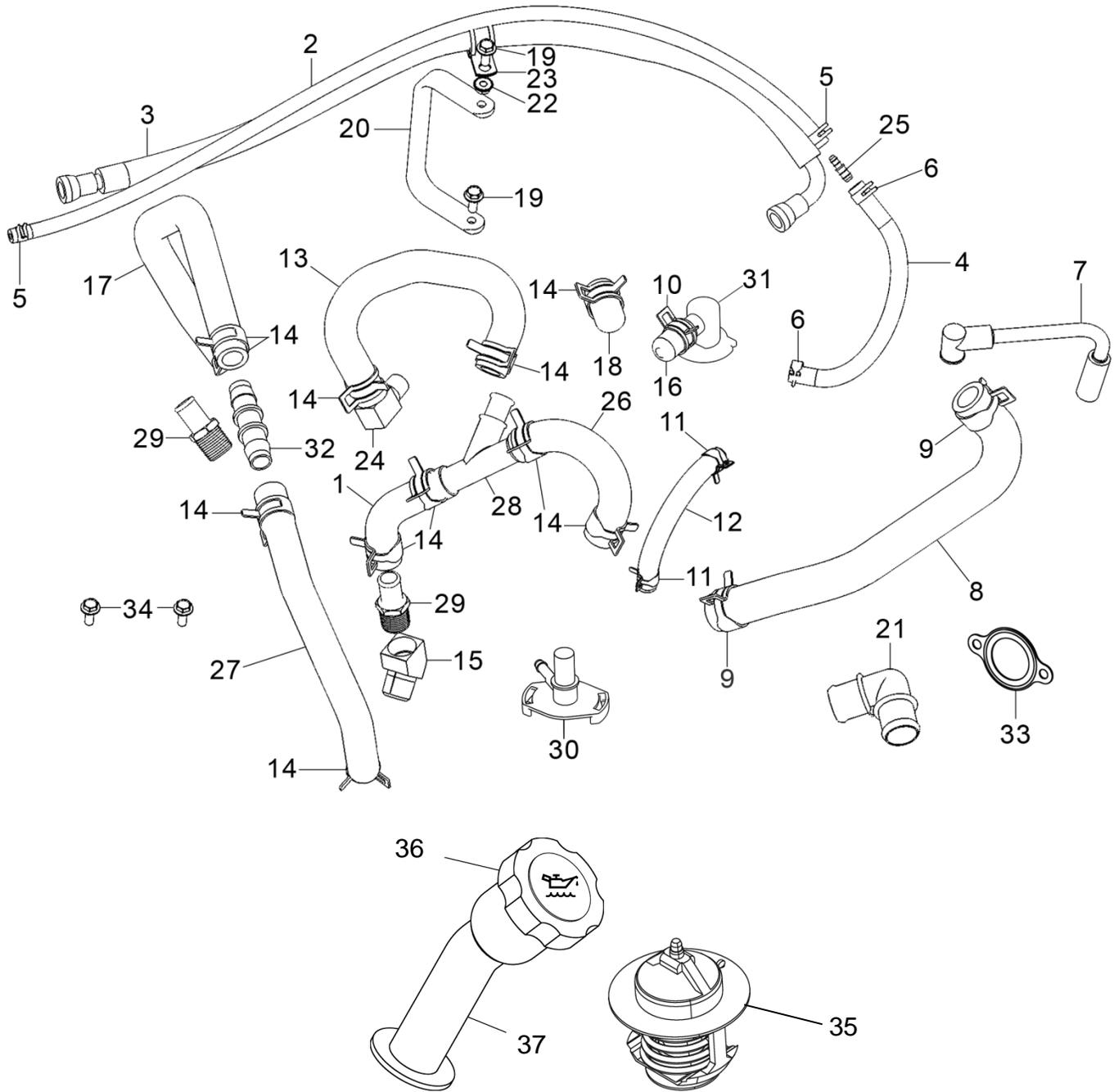
Spectrum Series III



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (GASOLINE, 2008)

Item#	Description	Qty	Part Number	GM Part Number
1	Clamp, Spring, Green 7/16 O.D. Hose	2	C2-16664-7	
2	Hose, 3/16" ID Fuel/Oil 28.75"L	1	H1-19253-017	
3	Hose, Fuel	1	AH1-50062-001	
4	Cap, Rubber, 5/8"	1	7110790	
5	Clamp, Hose	3	C2-16664-2	
6	Screw, Hex Hd Con Sems M6 X 16mm	2	S1-30871-02-0616	
7	Fitting, 1/2 NPT 5/8 Hose Nip Brass	2	F4-17920	
8	Elbow, GM Vent	1		1263193
9	Fitting Brass, Elbow 45 deg	1	80082	
10	Hose, Fuel	1	H1-19253-018	
11	Clamp, Hose -.5 in O.D. Nominal	2	C2-16664-8	
12	Hose, Coolant, Cut - 4.75 In	1	H1-19255-021	
13	Fitting, 1/4 Hose 11/64 Hose Reducer Brass	1	F4-14382	
14	Bracket, Fuel Line Support	1	B4-50398-001	
15	Hose, Fuel 3/8 ID 2.88" L	1	H1-19253-022	
16	Nut, Hex Serrated	1	N1-30876-M06	
17	P-Clamp 5/8" Support	1	C2-30880-010	
18	Tie Wrap, Double Hose Clamp	2	T8-14109-2	
19	Plug, 3/8" NPT, Soc Head Brass	1	P3-12	
20	Fitting, Intake 13mm	1	F4-50150	
21	Cap, Vacuum 1/2" ID	1	C2-30500-003	
22	Clamp, Hose	1	C2-16664-3	
23	Fitting, Elbow 90-degree PCV	2	F4-30912-001	
24	Spacer	1	T1-51265-001	
25	Thermostat	1		10202456
26	Oil Fill Cap	1		12573336
27	Oil Fill Tube Extension	1		12570623

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (BI-FUEL, 2007)



4.3L Toyota Lift Trucks

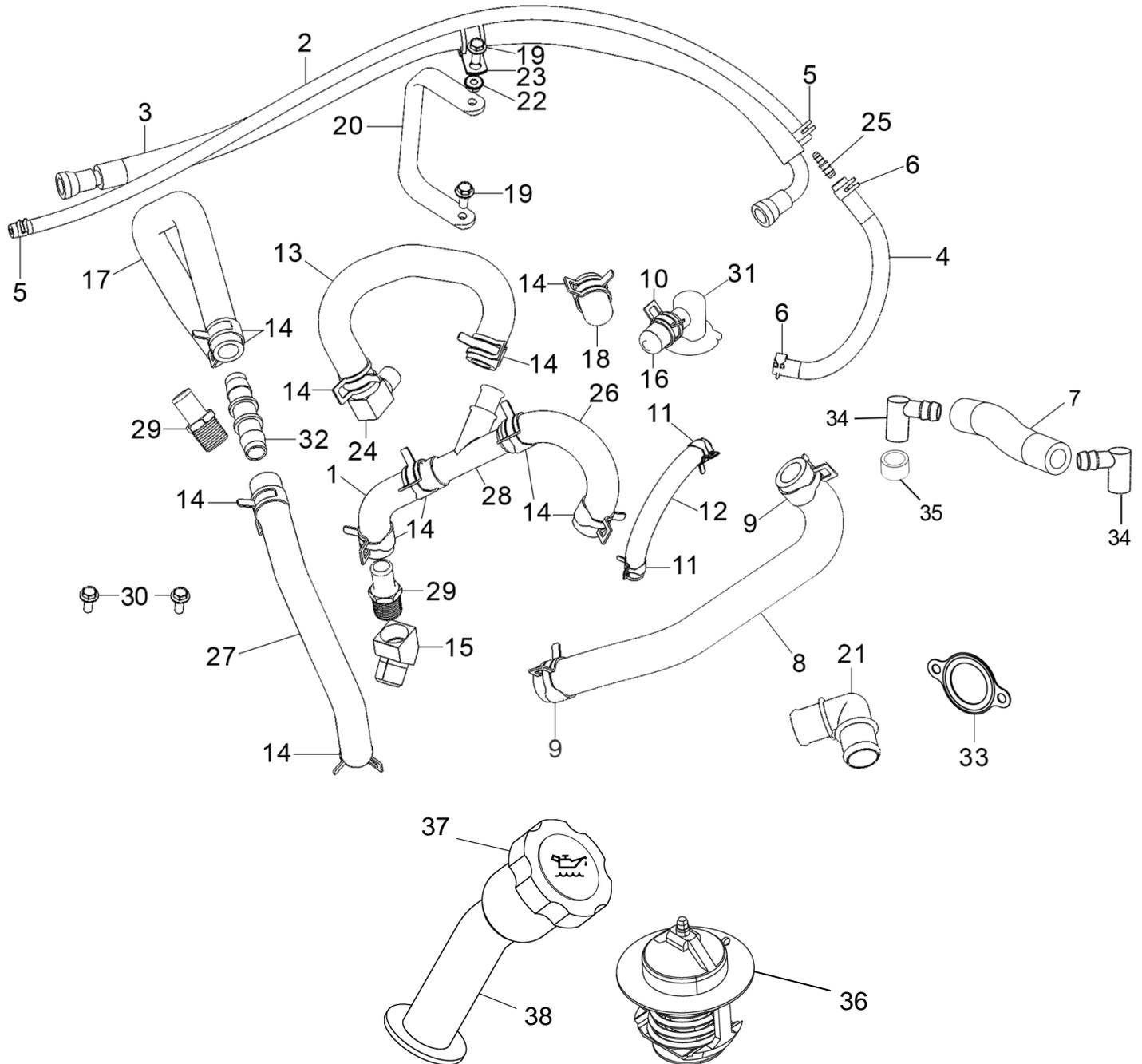
Spectrum Series III



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (BI-FUEL, 2007)

Item #	Description	Qty	Part Number	GM Part Number
1	Coolant Hose, EPR to WP	1	H1-50245-001	
2	Hose, 3/16" ID 28.75"	1	H1-19253-017	
3	Fuel Line, Pressure Regulator Intake	1	AH1-50062-001	
4	Hose, Fuel 1/4" dia. 7.88" L	1	H1-19253-018	
5	Clamp	2	C2-16664-7	
6	Clamp, Hose -.5 In O.D. Nominal	2	C2-16664-8	
7	Tube, PVC, 4.3l	1	T1-50148	
8	Hose, Fuel, Formed 3/4"	1	H1-50176-001	
9	Clamp, Hose	2	C2-16664-4	
10	Clamp, Hose	1	C2-16664-3	
11	Clamp, Hose	2	C2-16664-1	
12	Hose, Fuel/Oil 3/8" 5.25"L	1	H1-19253-013	
13	Hose, Coolant, Formed	1	H1-50594-001	
14	Clamp, Hose	11	C2-16664-2	
15	Fitting, Br, EL 45 Deg X 1/2P, Straight	1	80082	
16	Cap, Vacuum .5"	1	C2-30500-003	
17	Hose, Coolant Intake	1	H1-50248-001	
18	Cap, Rubber, 5/8" (Thermostat Housing)	1	7110790	
19	Screw, Hex Hd Con Sems M6 X 16 mm	2	S1-30871-02-0616	
20	Bracket, Fuel Line Support	1	B4-50398-001	
21	Elbow, Vent GM Rb	1		1263193
22	Nut, Hex Flange Serrated	1	N1-30876-M06	
23	P-Clamp, 5/8" Support	1	C2-30880-010	
24	Fitting, Water, 3/8" NPT X 5/8 Hose 90°	1	F4-17	
25	Fitting 1/4 HS 11/64H Reducer, brass	1	F4-14382	
26	Hose, 5/8" Coolant, formed	1	H1-50593-001	
27	Hose, Formed- Coolant	1	H1-50246-001	
28	Fitting, 3/4Hs Water Y 5/8 Nyl	1	F4-43	
29	Fitting 1/2 NPT 5/8" Nip Brass	1	F4-17920	
30	Adapter, PCV, 4.3L	1		12552750
31	Fitting, Intake, 4.3L, 13mm	1	F4-50150	
32	Adapter	1	A4-50082-001	
33	Gasket, Water Outlet	1		10105135
34	Screw, Hex, Flange M18 x 1.25 x 25	1	S1-30871-02-0825	
35	Thermostat	1		10202456
36	Oil Fill Cap	1		12573336
37	Oil Fill Tube Extension	1		12570623

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (BI-FUEL, 2008)



4.3L Toyota Lift Trucks

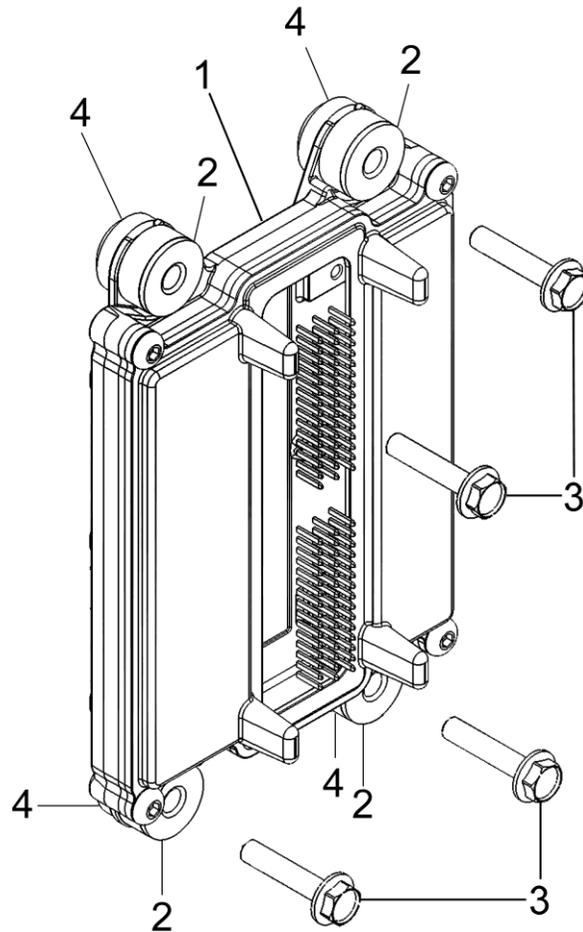
Spectrum Series III



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (BI-FUEL, 2008)

Item #	Description	Qty	Part Number	GM Part Number
1	Coolant Hose, EPR to WP	1	H1-50245-001	
2	Hose, 3/16" ID 28.75"	1	H1-19253-017	
3	Fuel Line, Pressure Regulator Intake	1	AH1-50062-001	
4	Hose, Fuel 1/4" dia. 7.88" L	1	H1-19253-018	
5	Clamp	2	C2-16664-7	
6	Clamp, Hose -.5 In O.D. Nominal	1	C2-16664-8	
7	Hose, Fuel 3/8 ID 2.88"L	1	H1-19253-022	
8	Hose, Fuel, Formed 3/4"	1	H1-50176-001	
9	Clamp, Hose	2	C2-16664-4	
10	Clamp, Hose	1	C2-16664-3	
11	Clamp, Hose	2	C2-16664-1	
12	Hose, Fuel/Oil 3/8" 5.25"L	1	H1-19253-013	
13	Hose, Coolant, Formed	1	H1-50594-001	
14	Clamp, Hose	11	C2-16664-2	
15	Fitting, Br, El 45 Deg X 1/2P, Strt	1	80082	
16	Cap, Vacuum .5"	1	C2-30500-003	
17	Hose, Coolant Intake	1	H1-50248-001	
18	Cap, Rubber, 5/8" (Thermostat Housing)	1	7110790	
19	Screw, Hex Hd Con Sems M6 X 16 mm	2	S1-30871-02-0616	
20	Bracket, Fuel Line Support	1	B4-50398-001	
21	Elbow, Vent GM Rb	1		1263193
22	Nut, Hex Flange Serrated	1	N1-30876-M06	
23	P-Clamp, 5/8" Support	1	C2-30880-010	
24	Fitting, Water, 3/8" NPT X 5/8 Hose 90°	1	F4-17	
25	Fitting 1/4 HS 11/64H Reducer, brass	1	F4-14382	
26	Hose, 5/8" Coolant, formed	1	H1-50593-001	
27	Hose, Formed- Coolant	1	H1-50246-001	
28	Fitting, 3/4Hs Water Y 5/8 Nyl	1	F4-43	
29	Fitting 1/2 NPT 5/8" Nip Brass	1	F4-17920	
30	Screw, Hex, Flange M18 x 1.25 x 25	2	S1-30871-02-0825	
31	Fitting, Intake, 4.3L, 13mm	1	F4-50150	
32	Adapter	1	A4-50082-001	
33	Gasket, Water Outlet	1		10105135
34	Fitting, Elbow 90-degree PCV	2	F4-30912-001	
35	Spacer	1	T1-51265-001	
36	Thermostat	1		10202456
37	Oil Fill Cap	1		12573336
38	Oil Fill Tube Extension	1		12570623

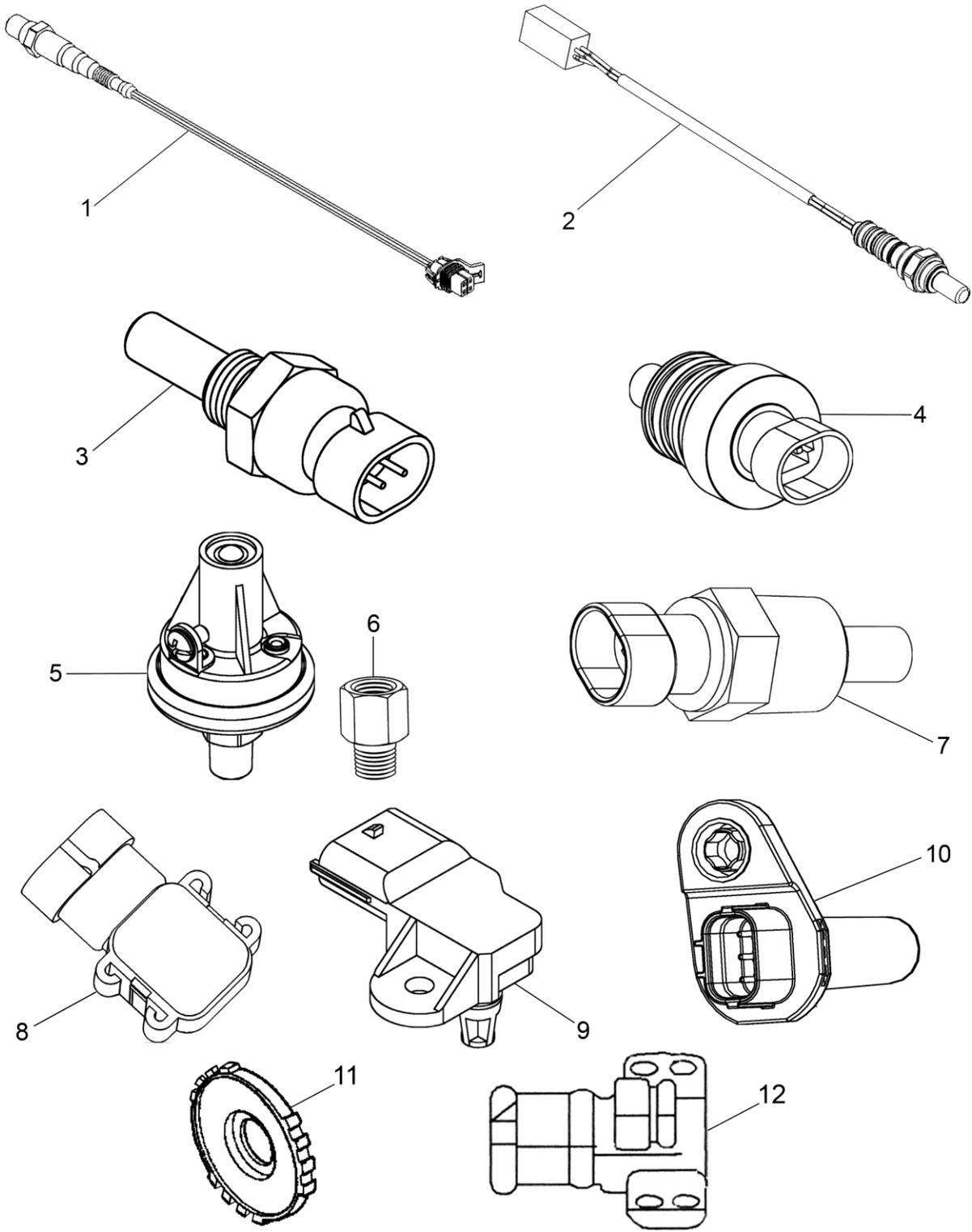
ENGINE CONTROL MODULE (LPG, GASOLINE & BI-FUEL, 2007-2008)



Item #	Description	Qty.	Part Number
1	Engine Control Module, Blank (no software or calibration) LPG	1	E1687002
	Engine Control Module, Blank (no software or calibration) Bi-Fuel & Gasoline	1	E1687001
2	Spacer	4	E1691001
3	Screw	4	S1-30871-02-0630
4	Vibration Isolator	4	E1691002

All ECMs are sold as un-programmed generic hardware modules. The service technician must flash the appropriate .mot file before the ECM can be used in the application. IMPCO Technologies does not supply the .mot files. These files must be acquired through the OEM service network. Service technicians must be factory authorized to access these files. If you are not able to access these files through your OEM network, you must purchase a pre-programmed ECM through your authorized OEM parts supplier. To receive Spectrum Series III training please visit our website at www.impcotechnologies.com

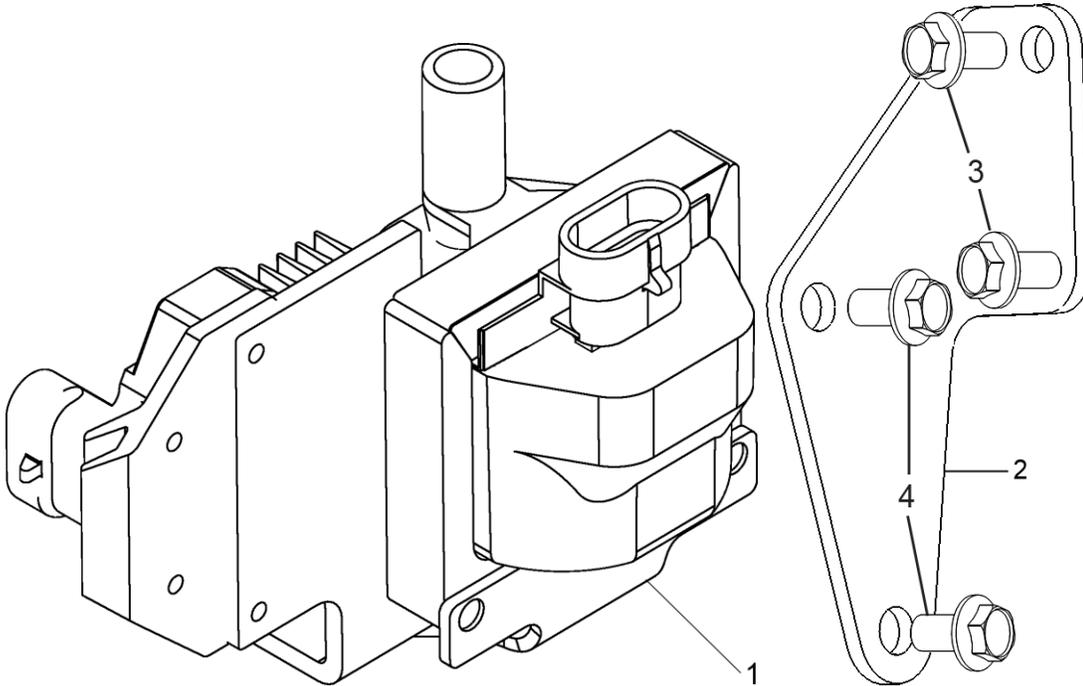
SENSORS (LPG, GASOLINE & BI-FUEL, 2007-2008)



SENSORS (LPG, GASOLINE & BI-FUEL, 2007-2008)

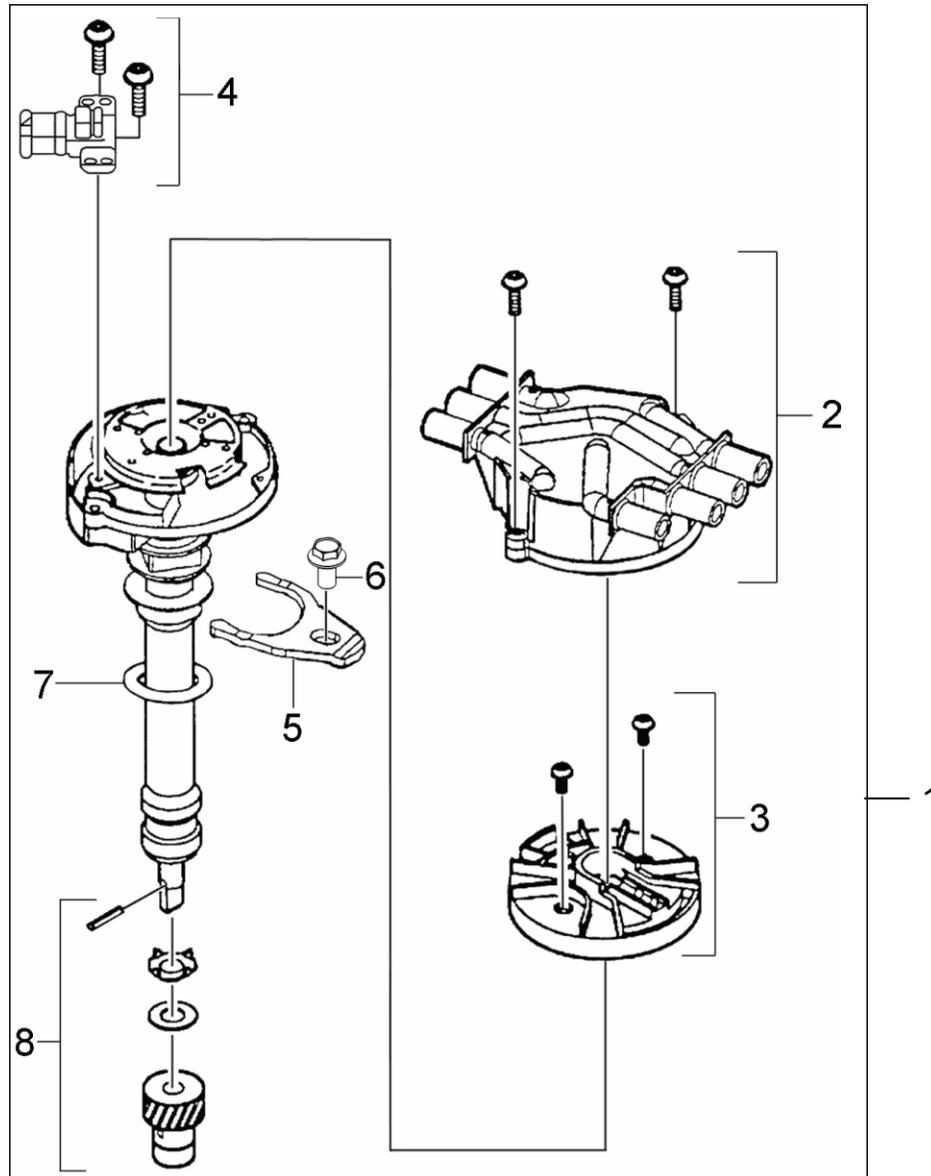
Item#	Description	Fuel	Year	Qty	Part Number	GM Part Number
1	HEGO, Post Catalyst	ALL	2007-2008	1	S8-50328-001	
2	HEGO, Pre-Catalyst	ALL	2007-2008	1	7176700	
3	Sensor, Air Temp	Gasoline, Bi-Fuel	2007-2008	1	S8-30908-001	
4	LPG Temp Sensor	LPG, Bi-Fuel	2007-2008	1	AS8-31353-001	
5	Oil Pressure Sender	ALL	2007-2008	1	S8-50303-001	
6	Adapter, Oil Sender	ALL	2007-2008	1	7242360	
7	Coolant Temp Switch	ALL	2007-2008	1		15326386
8	MAP Sensor	Gasoline, Bi-Fuel	2007	1		9359409
	MAP Sensor	Gasoline, Bi-Fuel	2008	1		12591290
9	TMAP Sensor	LPG	2007-2008	1	E1466001	
10	Crank Sensor	ALL	2007	1		12562910
	Crank Sensor	ALL	2008	1		12595966
11	CKP Sensor Reluctor Ring	ALL	2008	1		93442981
12	Camshaft Sensor	ALL	2007-2008	1		10485432

IGNITION MODULE/COIL (LPG, GASOLINE & BI-FUEL, 2007-2008)



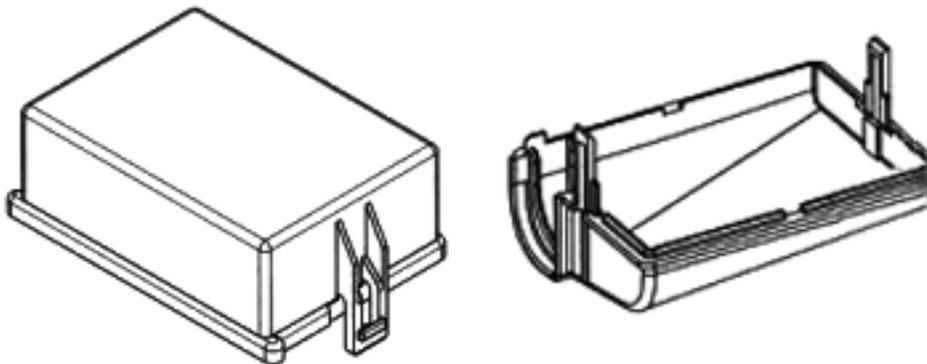
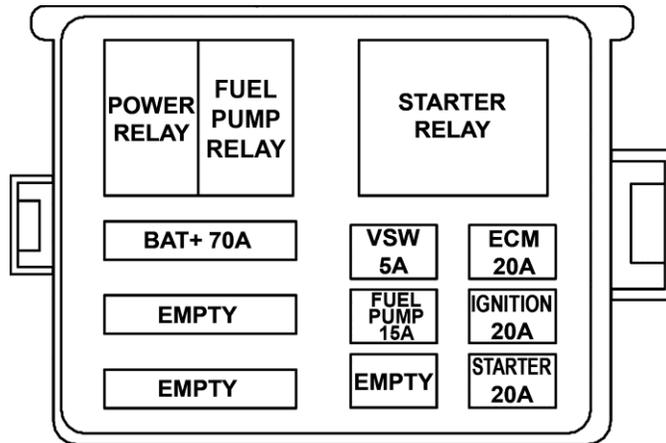
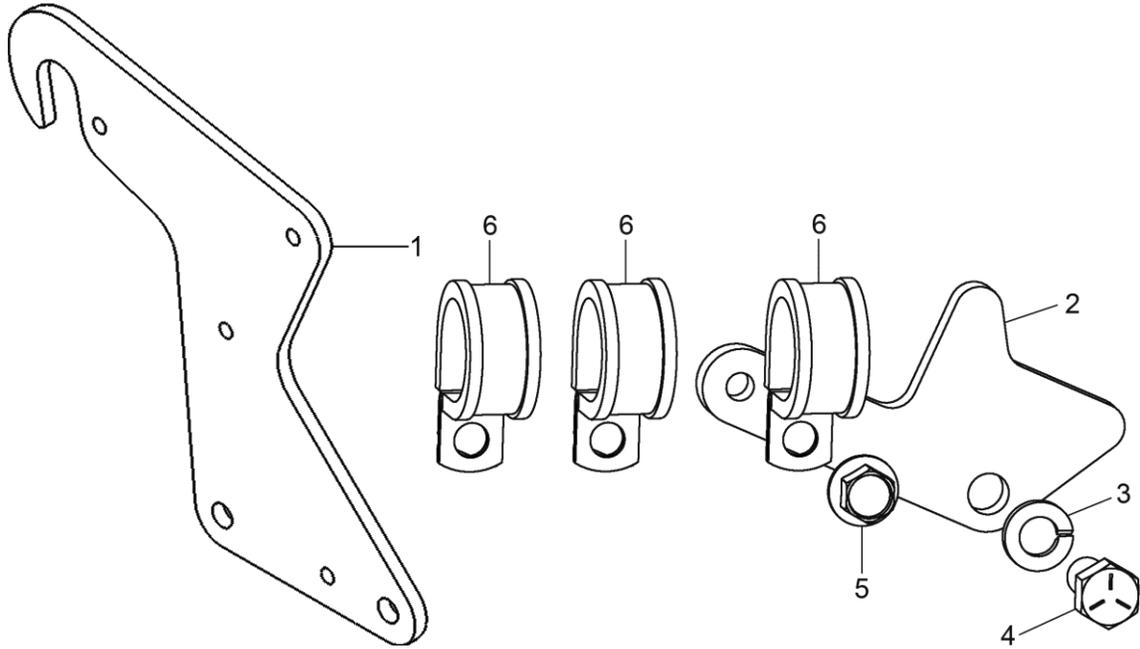
Item #	Description	Qty	Part Number	GM Part Number
1	Ignition Control Module & Coil	1		93804365
2	Bracket, Ignition Coil	1	B4-50092-001	
3	Screw Hex Flange M8-1.25 x 16MM	2	S1-30871-02-0816	
4	Screw, Hex Head SEMS 3/8"-16 x 3/4"	2	S1-178	

DISTRIBUTOR (LPG, GASOLINE & BI-FUEL, 2007-2008)



Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete-includes 2-9 below)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245430	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

ENGINE ELECTRICAL (GASOLINE, 2007-2008)

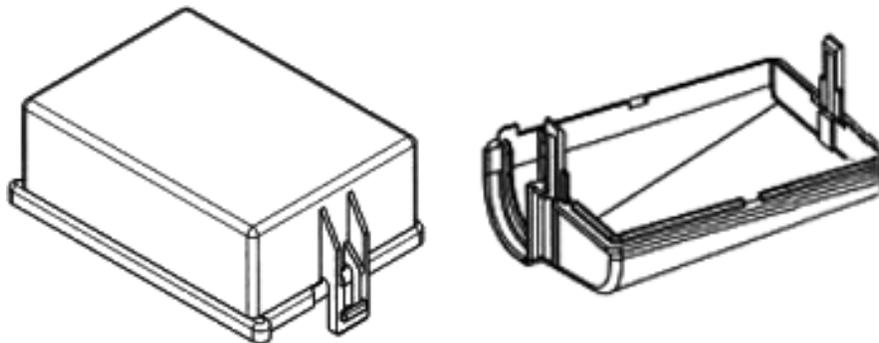
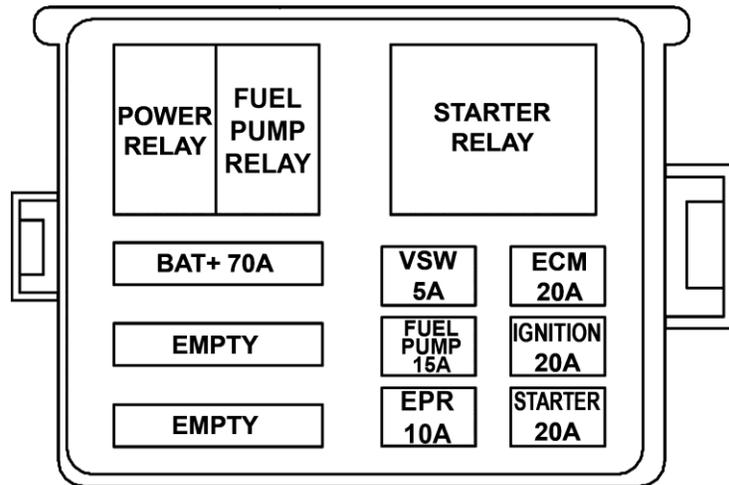
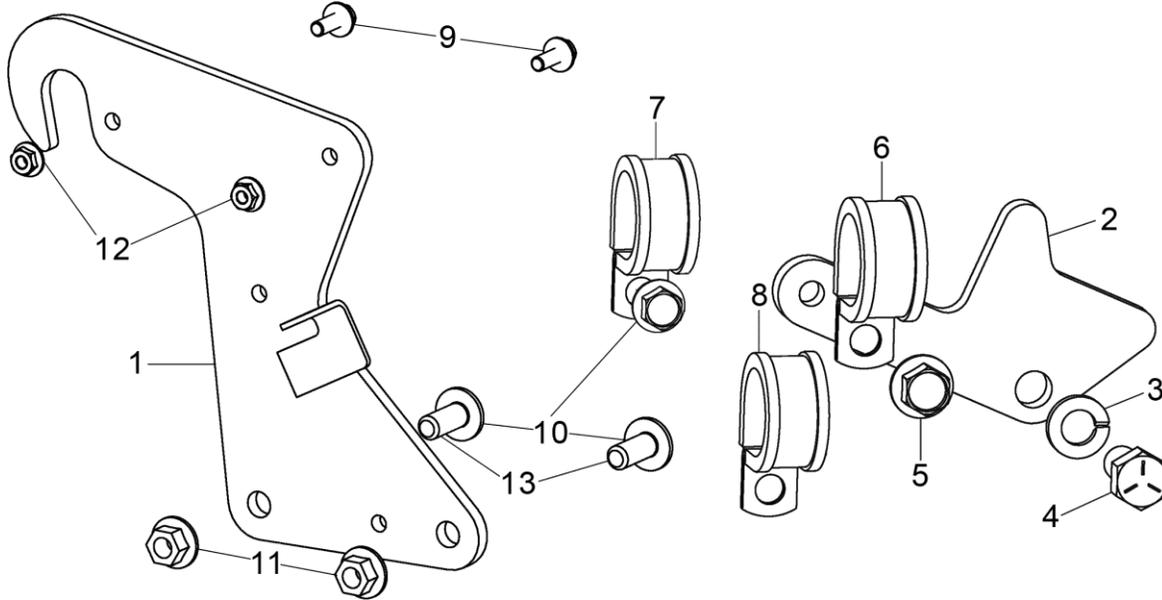


Fuse Box Covers

ENGINE ELECTRICAL (GASOLINE, 2007-2008)

Item #	Description	Qty	Part Number	Manuf. P/N
1	Bracket, 4.3L Fuse Box	1	B4-30942-001	
2	Bracket, Harness	1	B4-50350-001	
3	Lock Washer	1	93300000	
4	Bolt 3/8" x 16 x 3/4" Hex Grade 5	1	90305075	
5	Screw, Hex Flange M8-1.5 x 20mm	1	S1-30871-02-1020	
6	Clamp, Loop Cushion 5/16" x 1.13	3	C2-30880-018	
Wire Harness (Not Shown)	Main Engine Wire Harness (2007)	1	E1707000	
	Main Engine Wire Harness (2008)	1	E1707001	
Power Relay	Power Relay	1	885014 (2007)	1043897 (2008)
Fuel Pump Relay	Fuel Pump Relay	1	885014 (2007)	1043897 (2008)
Starter Relay	Starter Relay	1	792185	
Alternator 70A Fuse	70A Maxi Fuse	1	1054112	1054112
VSW 5A Fuse	5A Minifuse	1	7380660	914572
ECM 20A Fuse	20A Minifuse	1	7381270	914592
Ignition 15A Fuse	15A Minifuse (2007)	1	7381120 (2007)	
Ignition 20A Fuse	20A Minifuse (2008)	1	7381270 (2008)	914592
Starter 20A Fuse	20A Minifuse	1	7381270	914592
-	Fuse Box Cover (Top) w/o Label	1	E-6131	
-	Fuse Box Cover (Bottom)	1	E-6132	

ENGINE ELECTRICAL (LPG & BI-FUEL, 2007-2008)

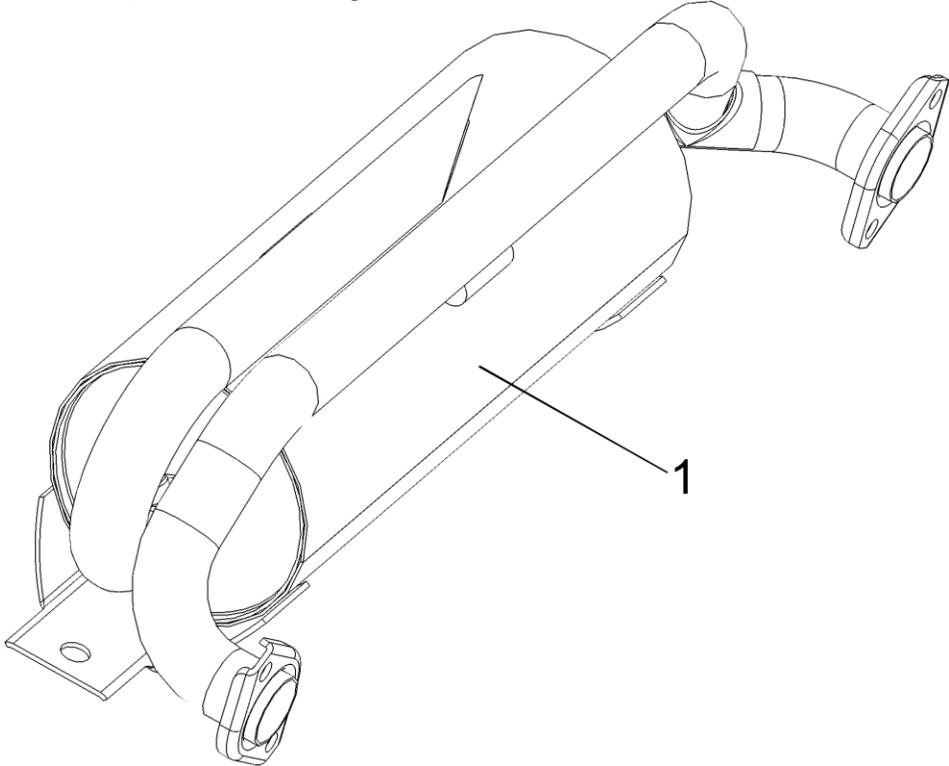
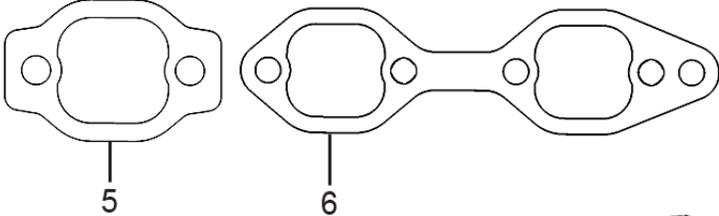
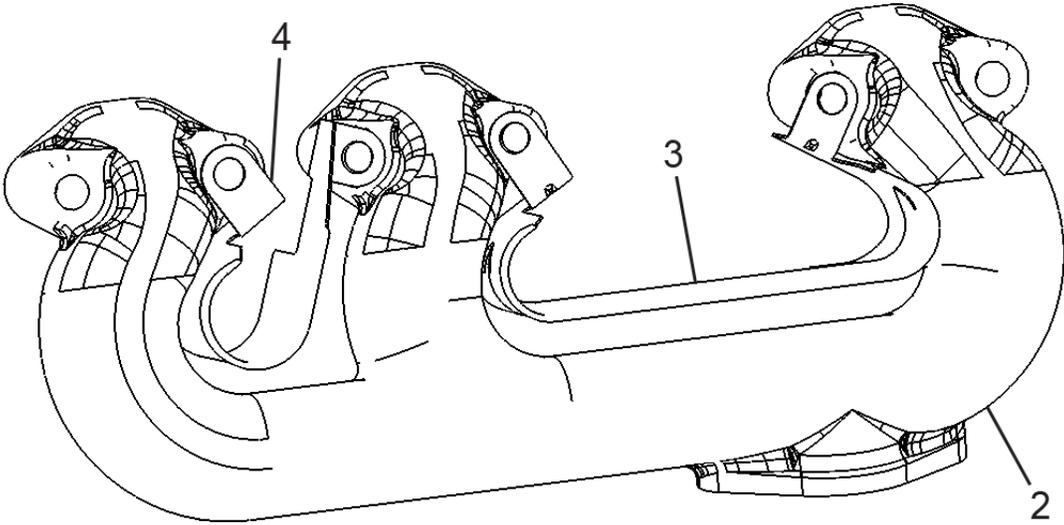


Fuse Box Covers

ENGINE ELECTRICAL (LPG & BI-FUEL, 2007-2008)

Item #	Description	Qty	Part Number	Manuf. P/N
1	Bracket, 4.3L Fuse Box	1	B4-30942-001	
2	Bracket, Harness	1	B4-50350-001	
3	Lock Washer	1	93300000	
4	Bolt 3/8" x 16 x 3/4" Hex Grade 5	1	90305075	
5	Screw, Hex Flange M8-1.25x10mm	1	S1-30871-02-0810	
6	Clamp, Lp-Cshnd 5/16 0.750 Id	2	C2-30880-012	
7	Clamp, Lp-Cshnd 5/16 1.000 Id	2	C2-30880-016	
8	Clamp, Lp-Cshnd 5/16 1.250 Id	2	C2-30880-020	
9	Screw, Hex Flange, M6 x 16mm	2	S1-30871-02-0616	
10	Washer, Plate	3		9414034 (GM)
11	Nut, Flange	2	NSS	
12	Nut, Hex Flange Serrated	2	N1-30876-M06	
13	Bolt, Stud	2	NSS	
Wire Harness (Not Shown)	Main Engine Wire Harness (LPG, 2007)	1	E1707300	
	Main Engine Wire Harness (Bi-Fuel, 2007)	1	E1707200	
	Main Engine Wire Harness (LPG, 2008)	1	E1707301	
	Main Engine Wire Harness (Bi-Fuel, 2008)	1	E1707201	
Power Relay	Power Relay	1	885014 (2007)	1043897 (2008)
Fuel Pump Relay	Fuel Pump Relay (Bi-Fuel)	1	885014 (2007)	1043897 (2008)
Starter Relay	Starter Relay	1	792185	
Alternator 70A Fuse	70A Maxi Fuse	1	1054112	1054112
VSW 5A Fuse	5A Minifuse	1	7380660	914572
ECM 20A Fuse	20A Minifuse	1	7381270	914592
Fuel Pump 15A Fuse (Bi-Fuel)	15A Minifuse	1	7381120	230898
Ignition 15A Fuse	15A Minifuse (2007)	1	7381120 (2007)	
Ignition 20A Fuse	20A Minifuse (2008)	1	7381270 (2008)	914592
EPR 10A Fuse (LPG & Bi-Fuel)	10A Minifuse	1	914584	914584
Starter 20A Fuse	20A Minifuse	1	7381270	914592
-	Fuse Box Cover (Top) w/o Label	1	E-6131	
-	Fuse Box Cover (Bottom)	1	E-6132	

EXHAUST SYSTEM (LPG, GASOLINE & BI-FUEL, 2007-2008)

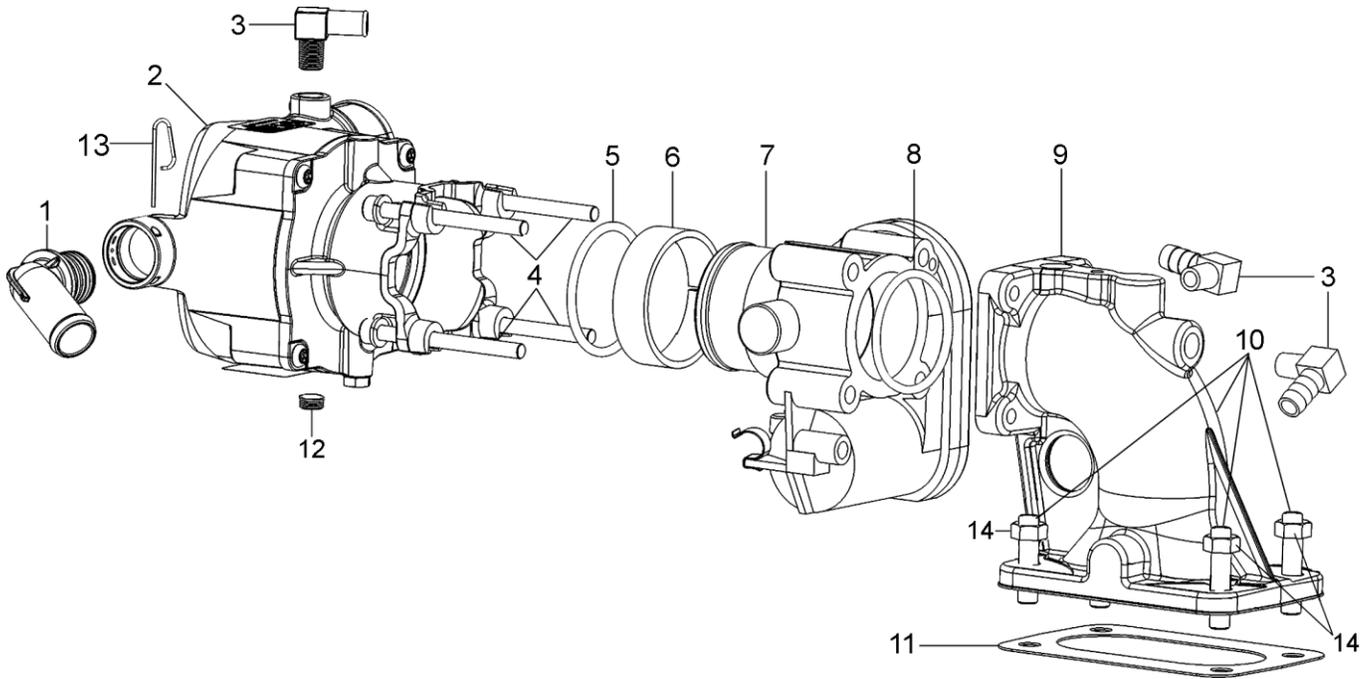


EXHAUST SYSTEM (LPG, GASOLINE & BI-FUEL, 2007-2008)

Item #	Description	Qty	Part Number
1	Three-Way Cat/Muffler Standard	1	C12-50184-001
	Three-Way Cat/Muffler BCS (C35)	1	C12-50305-001
	Three-Way Cat/Muffler BCS (C55)	1	C12-50304-001
2	Exhaust Manifold	2	NSS
3	Shield, Exhaust Manifold	2	NSS
4	Shield, Exhaust Manifold	2	NSS
5	Gasket, Exhaust Manifold	2	NSS
6	Gasket, Exhaust Manifold	2	NSS

4.3L MCFA Lift Trucks

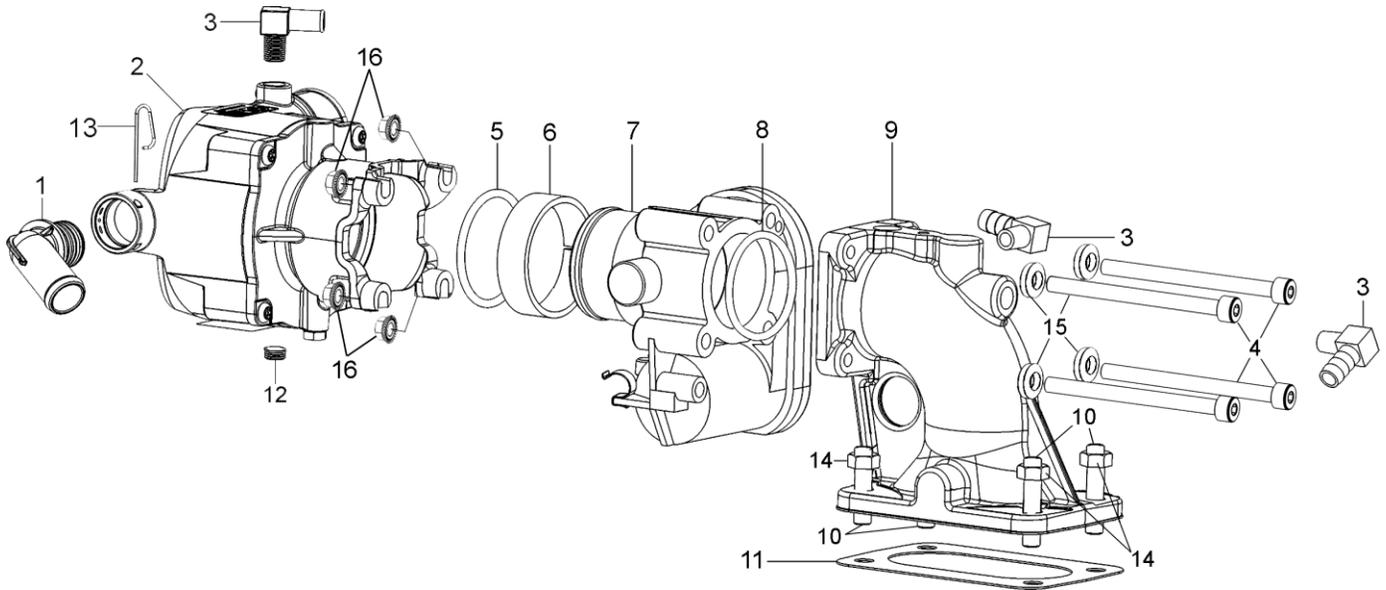
MIXER AND THROTTLE BODY ASSEMBLY (2007)



Item#	Description	Qty	Part Number
1	Fitting, 70-Degree, 3/4" OD	1	AF4-31197-001
2	Carburetor ASM, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8 NPT 3/8 Hs 90 El Brass	3	401-02
4	Screw, Hex Sock Cap	4	S1-30295-0660
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	Adapter, Elbow, 4.3L Lx-Bos SIII LP	1	A3-30940-001
10	Stud, 5/16-18 X 1 3/4", Torx	4	32501396
11	Gasket, Carb Mounting, 2bbl, 4.3L	1	G1-50251-001
12	Plug, 1/8 NPT 3/16 Hex Sch Brass	1	P3-46
13	Retaining Pin	1	P1-30559
14	Nut, 5/16-18, Flanged	4	N1-30876-031

*Included in Repair Kit RK-FT150

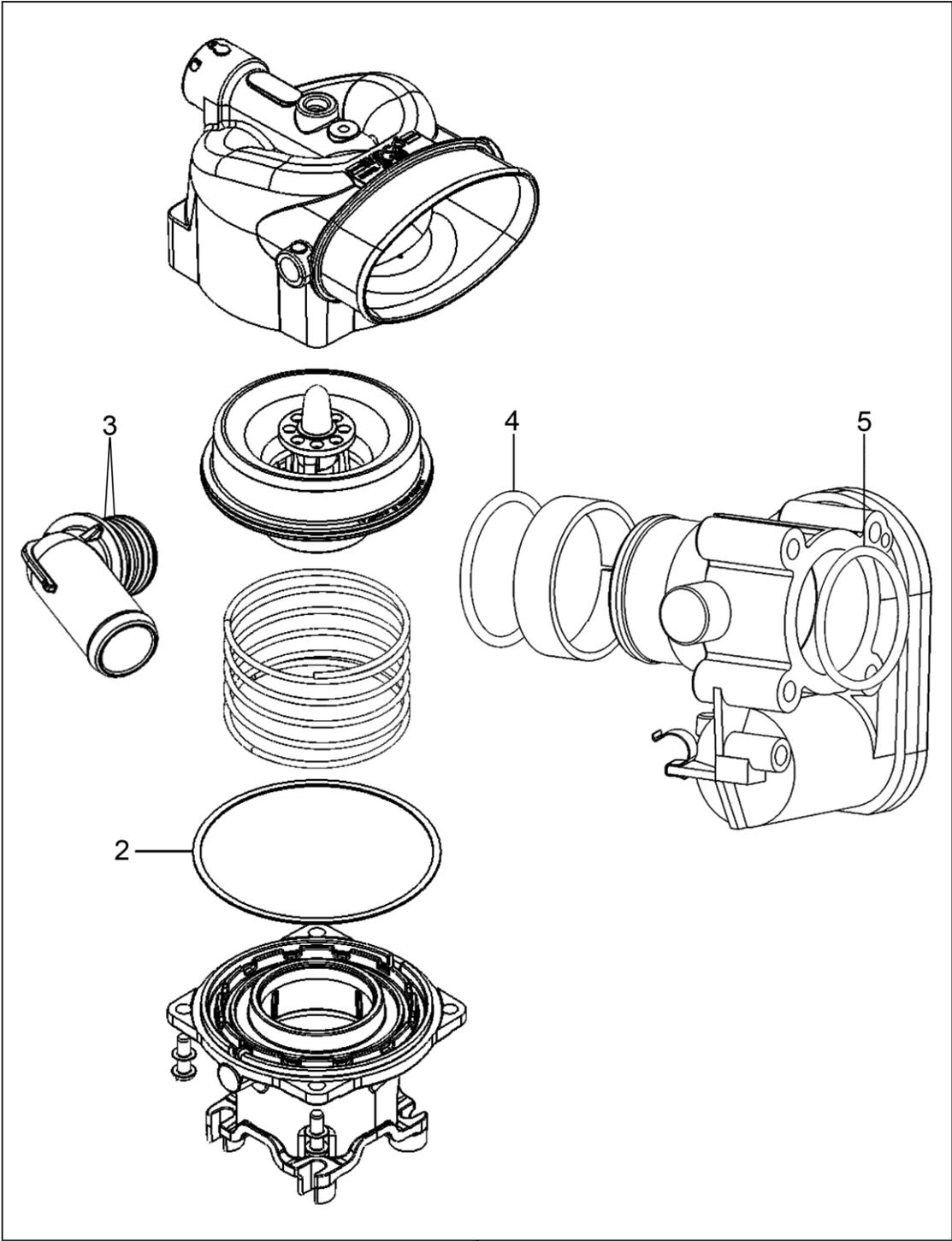
MIXER AND THROTTLE BODY ASSEMBLY (2008)



Item#	Description	Qty	Part Number
1	Fitting, 70-Degree, 3/4" OD	1	AF4-31197-001
2	Carburetor ASM, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8 NPT 3/8 Hs 90 El Brass	3	401-02
4	Screw, Hex Sock Cap	4	S1-30295-0670
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	Adapter, Elbow, 4.3L Lx-Bos SIII LP	1	A3-30940-001
10	Stud, 5/16-18 X 1 3/4", Torx	4	32501396
11	Gasket, Carb Mounting, 2bbl, 4.3L	1	G1-50251-001
12	Plug, 1/8 NPT 3/16 Hex Sch Brass	1	P3-46
13	Retaining Pin	1	P1-30559
14	Nut, 5/16-18, Flanged	4	N1-30876-031
15	Washer, Conical, Spring 6mm	4	W1-31039-006
16	Nut, Hex, Flange Serrated M6 X 1.0"	4	N1-30876-M06

*Included in Repair Kit RK-FT150

MIXER REPAIR KIT (2007-2008)

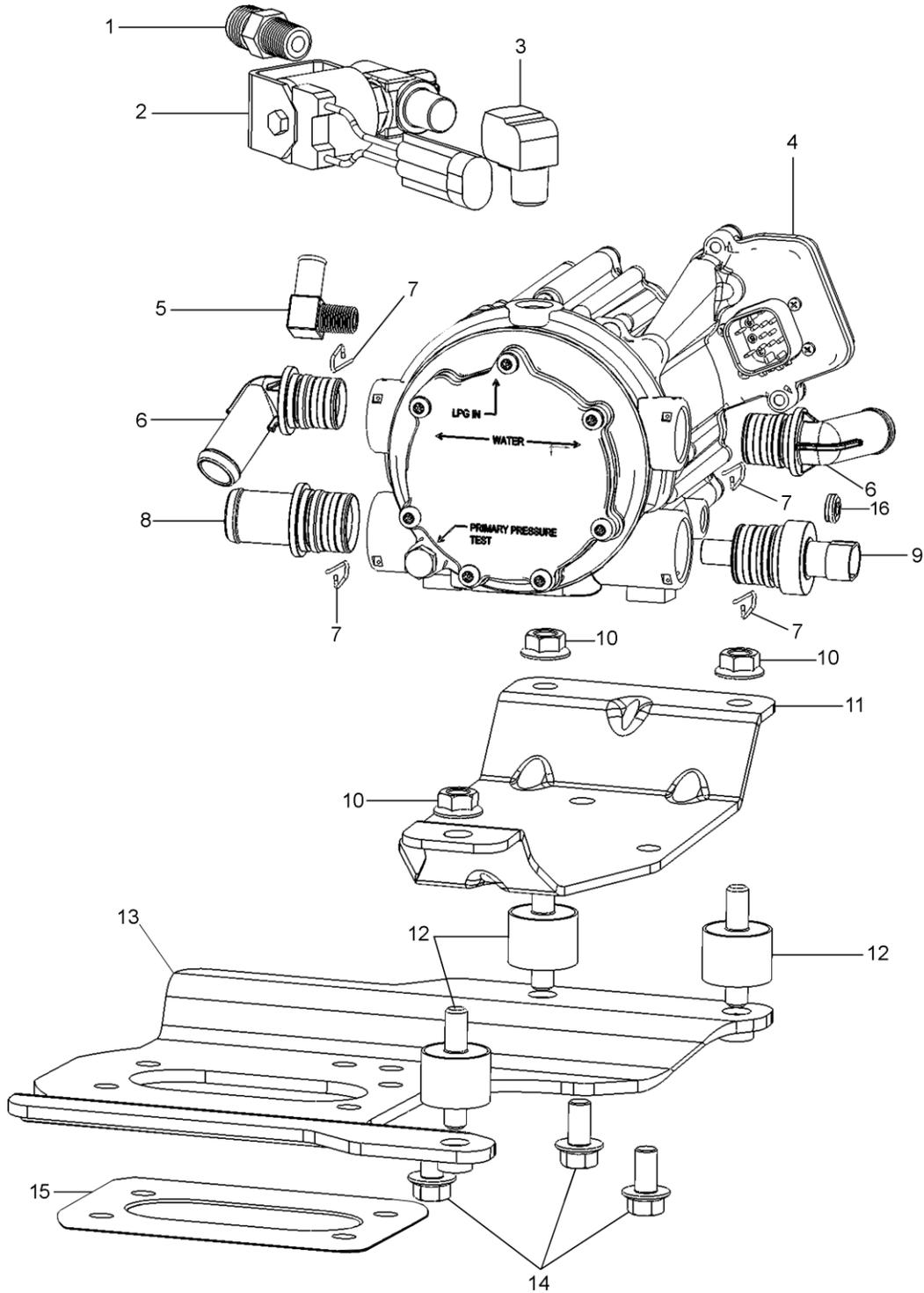


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MIXER REPAIR KIT (2007-2008)

Item#	Description	Qty	Part Number
1	(Includes Items 2-5)	1	RK-FT150
2	Gasket	1	G1-31252-150
3	O-Ring	2	S3-31195-001
4	O-Ring	1	S3-1524-004
5	O-Ring	1	S3-1524-003

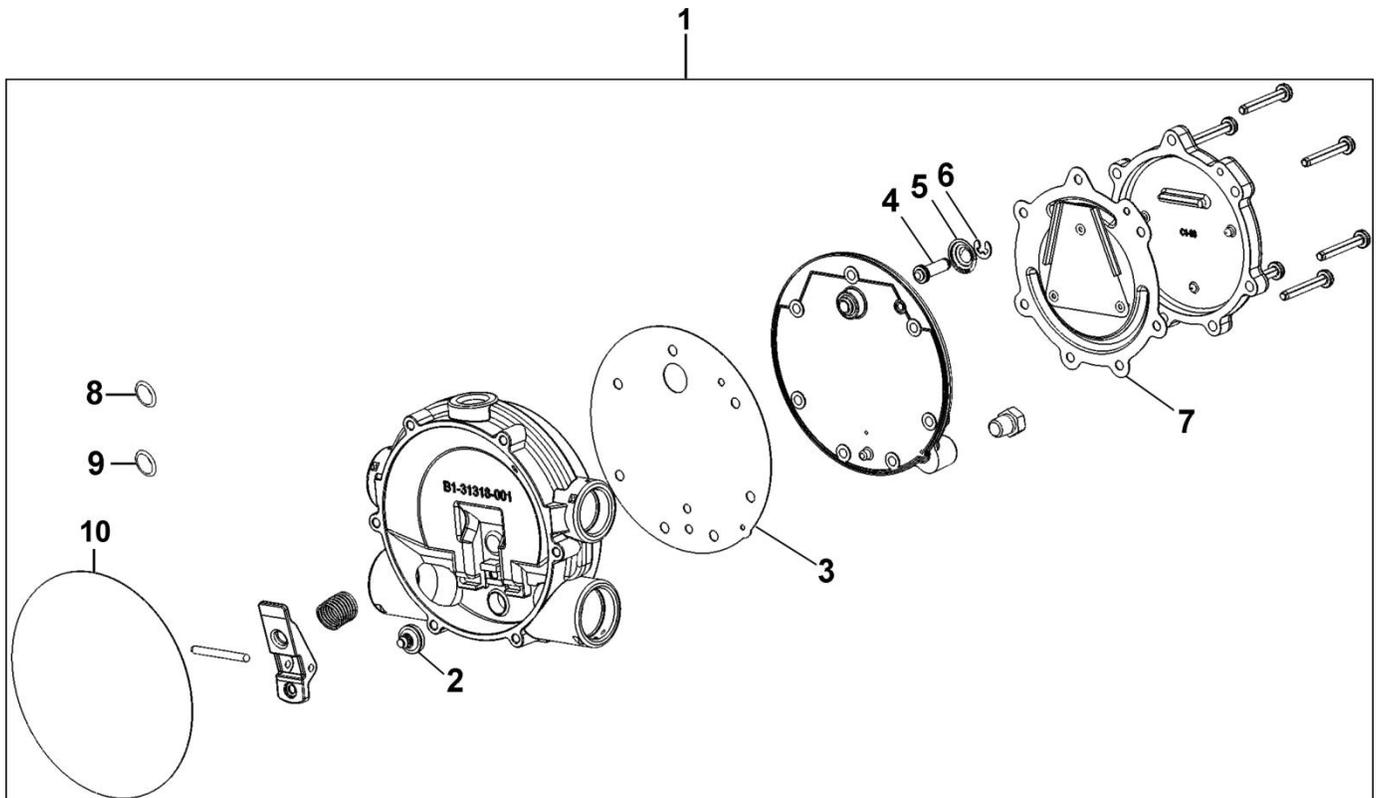
EPR ASSEMBLY (2007-2008)



EPR ASSEMBLY (2007-2008)

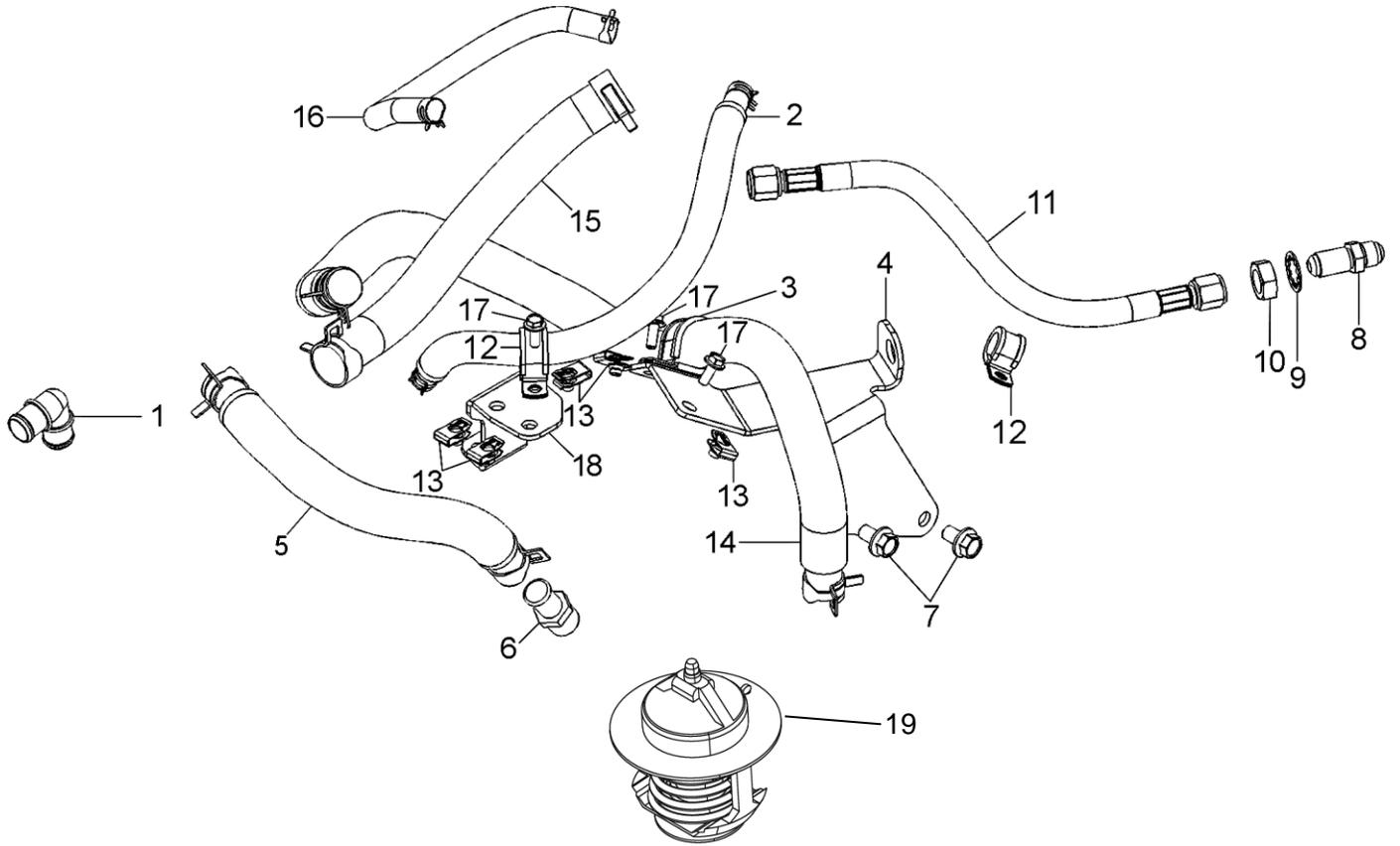
Item#	Description	Qty	Part Number
1	Fitting, ¼ NPT 3/8 Flare Brass	1	F4-14220
2	Valve, LPG Shut-Off	1	ET98-30515-001
3	Fitting, ¼ NPT Street 90 Elbow Brass	1	F4-14184-002
4	Electronic Pressure Regulator, EPR	1	EPR-50388-001
5	Fitting, 90 Deg. 1/8 NPT X 3/8	1	401-02
6	Fitting Assembly, 20 Degree	2	AF4-30614
7	Retaining Clip	4	P1-30559
8	Fitting Ass'y, Straight, 3/4"Od	1	AF4-31193-001
9	Temperature Sensor Ass'y	1	See Sensors
10	Nut, Hex Flange, Serrated	3	N1-30876-M08
11	Bracket, EPR-Upper	1	N/A
12	Mount Vibration, 2 Studs	3	R5-50080-002
13	Bracket, Mtg EPR, 2bbl, 4.3l	1	B4-50223-001
14	Screw, Hex Flange-M8x1.25x16	3	S1-30871-02-0816
15	Gasket, Carb Mounting, 2bbl, 4.3L	1	G1-50251-001
16	Plug, 1/8 NPT 3/16" Hex Sch Brass	1	P3-46

REGULATOR REPAIR KIT (2007-2008)



Item#	Description	Qty	Part Number
1	Kit, Minor Repair (Includes items 2-10 only)	1	RK-EPR-3
	Kit, Major (Includes All parts shown in box, assembled)	1	RK-EPR-4
2	Seat, Secondary	1	NSS
3	Gasket, Body Secondary	1	NSS
4	Pin, Primary	1	NSS
5	Spring, Primary	1	NSS
6	Clip, Primary	1	NSS
7	Diaphragm, Primary	1	NSS
8	O-ring	4	NSS
9	O-ring	4	NSS
10	Seal, Clamp Plate, EPR	1	NSS

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL & THERMOSTAT (2007)



4.3L MCFA Lift Trucks

Spectrum Series III



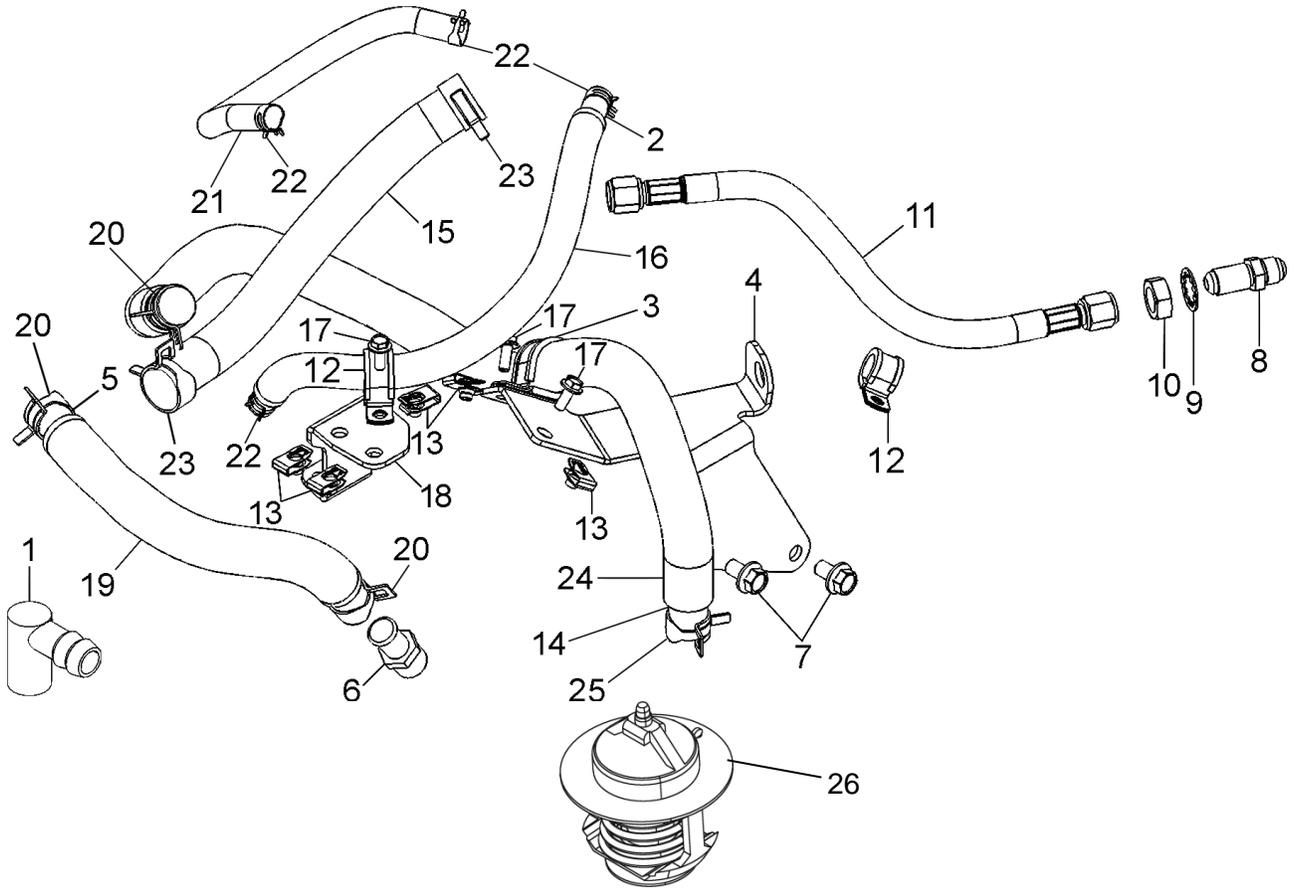
HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (2007)

Item #	Description		Qty	Part Number	GM Part Number
1	Elbow, Vent GM		1		1263193
2	Balance Hose, Ass'y 350mm	Hose 3/8" Fuel/Oil 1.16'L	1	H1-19253-015	
		Clamp, Hose, .69" OD	2	C2-16664-1	
		Conduit, Round Convolutod 1.13'L	1	NSS	
3	Clamp, Loop Cushioned, 8mm hole x 32mm		1	C2-30880-020	
4	Bracket, Fuel Line Support 4.3L		1	B4-50258-001	
5	Coolant Hose, Ass'y 300 mm	Hose Coolant 5/8" Dia. 1.02'L	1	H1-19255-016	
		Clamp, Hose	2	C2-16664-2	
		Conduit, Rnd Slit 0.92'L	1	NSS	
6	Fitting, 1/2NPT X 5/8 Hose		1	7171440	
7	3/8"-16x5/8" Bolt Fn Gr5		2		95200000
8	Fitting, Bulkhead #6 SAE-45deg		1	F4-50259-001	
9	Washer-Lock, Internal Tooth 5/8		1	W1-1588-010	
10	Nut, Hex Jam - 5/8-11		1	N1-30326-162	
11	LPG Hose Ass'y, CGA 340mm		1	AH1-50301-001	
12	Clamp, Loop Cushioned, 5/16" Bolt X .63" ID		2	C2-30880-012	
13	Nut, Clip M6		5	N1-50181-0640	
14	Coolant Hose Ass'y, 750mm	Hose Coolant 5/8" 2.46'L	1	H1-19255-017	
		Clamp, Hose	2	C2-16664-2	
		Conduit, Rnd Slit 2.28'L	1	NSS	
15	Vapor Hose Ass'y, 290mm	Hose 3/4" Fuel/Oil Bulk 0.95'L	1	H1-19253-016	
		Clamp, Hose	2	C2-16664-4	
16	PCV Hose Ass'y, 310mm	Hose 3/8" ID Fuel/Oil Bulk 0.98'L	1	H1-19253-014	
		Clamp, Hose	2	C2-16664-1	
17	Screw, Hex, Flange, M6 X 16mm		3	S1-30871-02-0616	
18	Bracket, Air Pipe, 4.3L, MCFA		1	7176730	

THERMOSTAT

Item #	Description	Qty	GM Part Number
19	Thermostat, 170°	1	10202456

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL & THERMOSTAT (2008)



4.3L MCFA Lift Trucks

Spectrum Series III



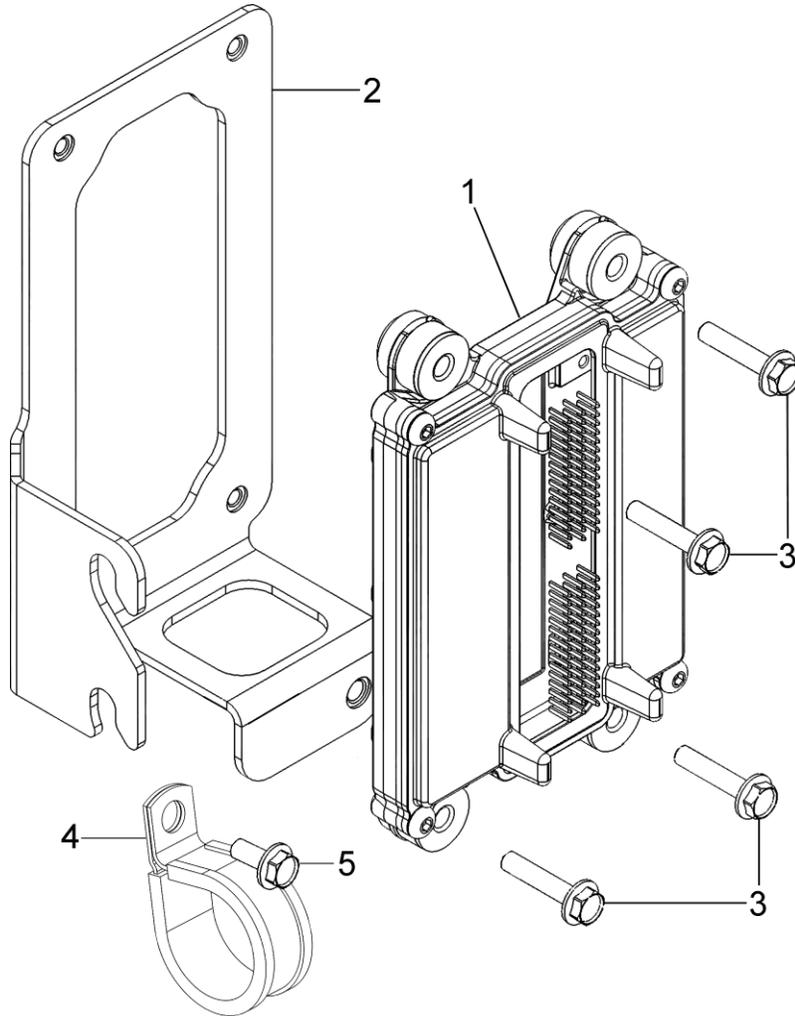
HOSE ASSEMBLIES COOLANT/VACUUM/FUEL & THERMOSTAT (2008)

Item #	Description	Qty	Part Number	GM Part Number
1	Fitting, Elbow, 90 degree PCV	1	F4-30912-001	
2	Hose 3/8" Fuel/Oil 13.88" Long	1	H1-19253-015	
3	Clamp, Loop Cushioned, 5/16 .750 ID	1	C2-30880-012	
4	Bracket, Fuel Line Support 4.3L	1	B4-50258-001	
5	Hose, 5/8" ID Coolant 12.25" L	1	H1-19255-016	
6	Fitting, 1/2" NPT x 5/8 Hose	1	7171440	
7	3/8"-16x2-1/8" Bolt Fn Gr5	2		12552096
8	Fitting, Bulkhead #6 SAE-45deg	1	F4-50259-001	
9	Washer-Lock, Internal Tooth 5/8	1	W1-1588-010	
10	Nut, Hex Jam-5/8-11	1	N1-30326-162	
11	LPG Hose Ass'y	1	AH1-50301-001	
12	Clamp	2		15664822
13	Nut, Clip M6	5	N1-50181-0640	
14	Hose, ID Coolant 29.50" L Coolant	1	H1-19255-017	
15	Hose 3/4" ID Fuel/Oil 11.75" L	1	H1-19253-016	
16	Conduit, Round, Convolutud	1	NSS	
17	Screw, Hex, Flange, M6 X 16mm	3	S1-30871-02-0616	
18	Bracket, Air Pipe, 4.3L, MCFA	1	7176730	
19	Conduit, Round Convolutud	1	NSS	
20	Clamp, Hose OD .88	3	C2-14106-006	
21	Hose, Fuel Oil, 3/4" ID 11.75" L	1	H1-19253-014	
22	Clamp, Hose, .69 OD	4	C2-16664-1	
23	Clamp, Hose 19mm	2	C2-16664-4	
24	Conduit, Round, Convolutud	1	NSS	
25	Clamp, Hose 1/2 to 1 1/8SAE 10	1	C2-14106-006	

THERMOSTAT

Item #	Description	Qty	GM Part Number
26	Thermostat, 170°	1	10202456

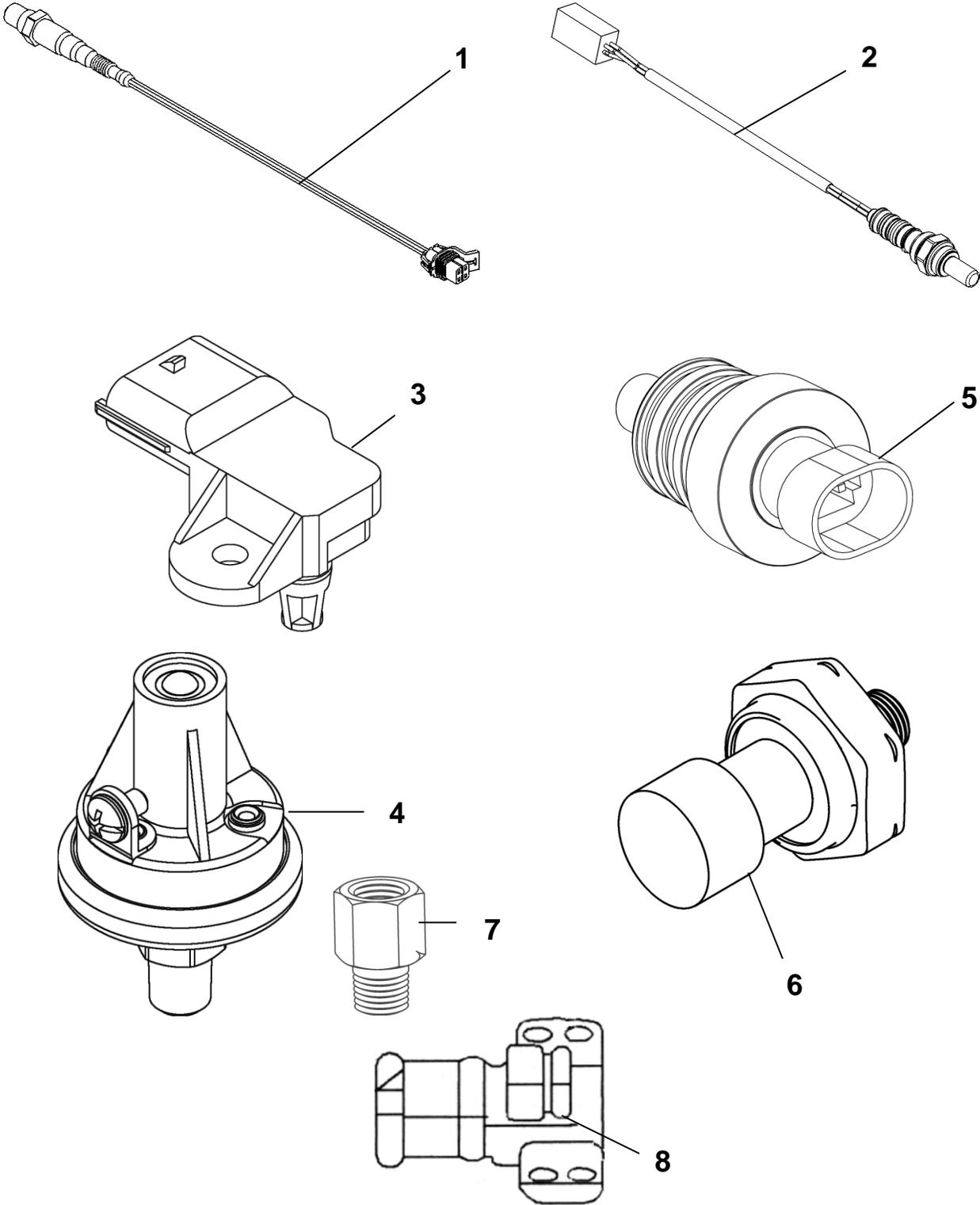
ENGINE CONTROL MODULE (2007-2008)



Item #	Description	Qty.	Part Number
1	Engine Control Module (ECM)	1	E1687001
2	Bracket, ECM	1	B4-50169-001
3	Bolt, M6-1.0 x 32 M	4	S1-30871-02-0635
4	Clamp, L, Cushioned-8mm Hole x 32mm	1	C2-30880-020
5	Bolt, M8-1.25 x 20mm, Flange	1	S1-30871-02-0820

Note: All ECMs are sold as un-programmed generic hardware modules. The service technician must flash the appropriate .mot file before the ECM can be used in the application. IMPCO Technologies does not supply the .mot files. These files must be acquired through the OEM service network. Service technicians must be factory authorized to access these files. If you are not able to access these files through your OEM network, you must purchase a pre-programmed ECM through your authorized OEM parts supplier. To receive Spectrum Series III training please visit our website at www.impcotechnologies.com.

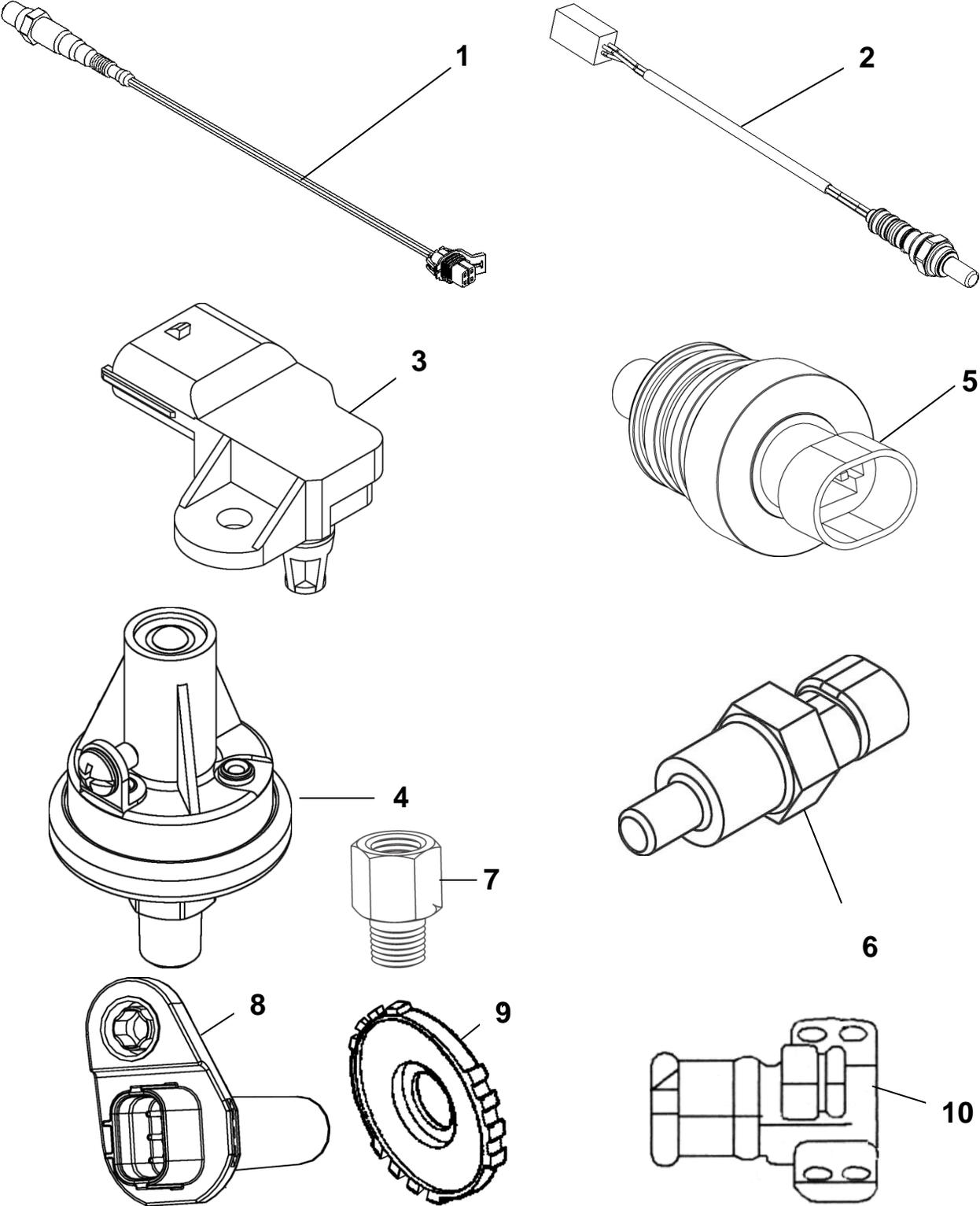
SENSORS (2007)



SENSORS (2007)

Item#	Description	Qty	Part Number	GM Part Number
1	HEGO, Post Catalyst	1	S8-50234-001	
2	HEGO, Pre-Catalyst	1	7176700	
3	Sensor, TMAP	1	E1466001	
4	Oil Pressure Switch	1	S10-50352-001	
5	LPG Temp Sensor	1	AS8-31353-001	
6	Coolant Temp Sensor	1		15326386
7	Adapter, Oil Sender	1	7242360	
8	Camshaft Sensor	1		10485432

SENSORS (2008)



SENSORS (2008)

Item #	Description	Qty	Part Number	GM Part Number
1	HEGO*, Post Catalyst	1 (early production) 2 (later production)	S8-50234-001	
2	HEGO*, Pre-Catalyst	1 (early production)	7176700	
3	Sensor, TMAP	1	E1466001	
4	Oil Pressure Switch	1	S10-50352-001	
5	LPG Temp Sensor	1	AS8-31353-001	
6	Coolant Temp Sensor	1		15326386
7	Adapter, Oil Sender	1	7242360	
8	Crank Sensor	1		12595966
9	CKP Sensor Reluctor Ring	1		93442981
10	Camshaft Sensor	1		10485432

Note: In later production 2008 applications

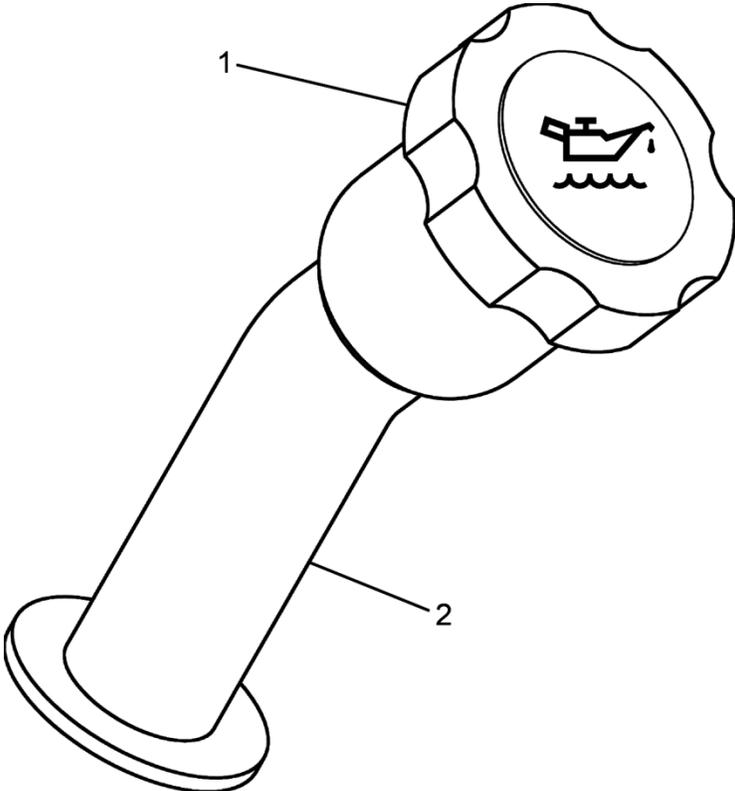
P/N: S8-50234-001 replaces P/N 7176700.

4.3L MCFA Lift Trucks

Spectrum Series III

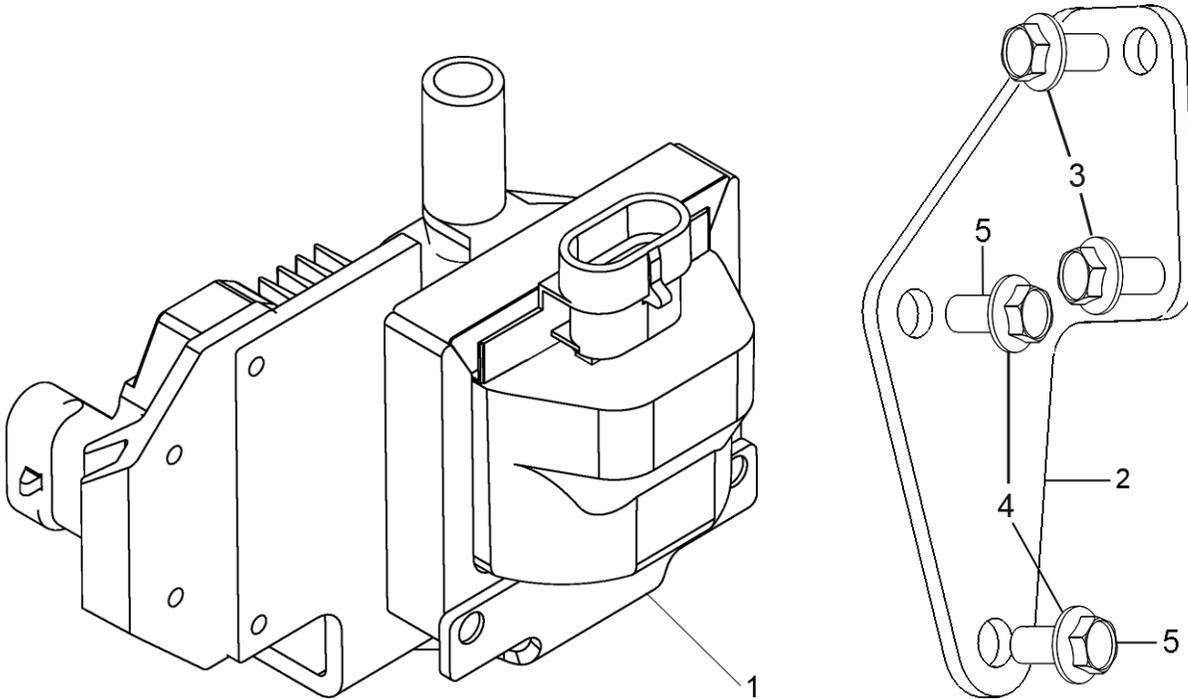


OIL FILL RISER/CAP & MISC HARDWARE (2007-2008)



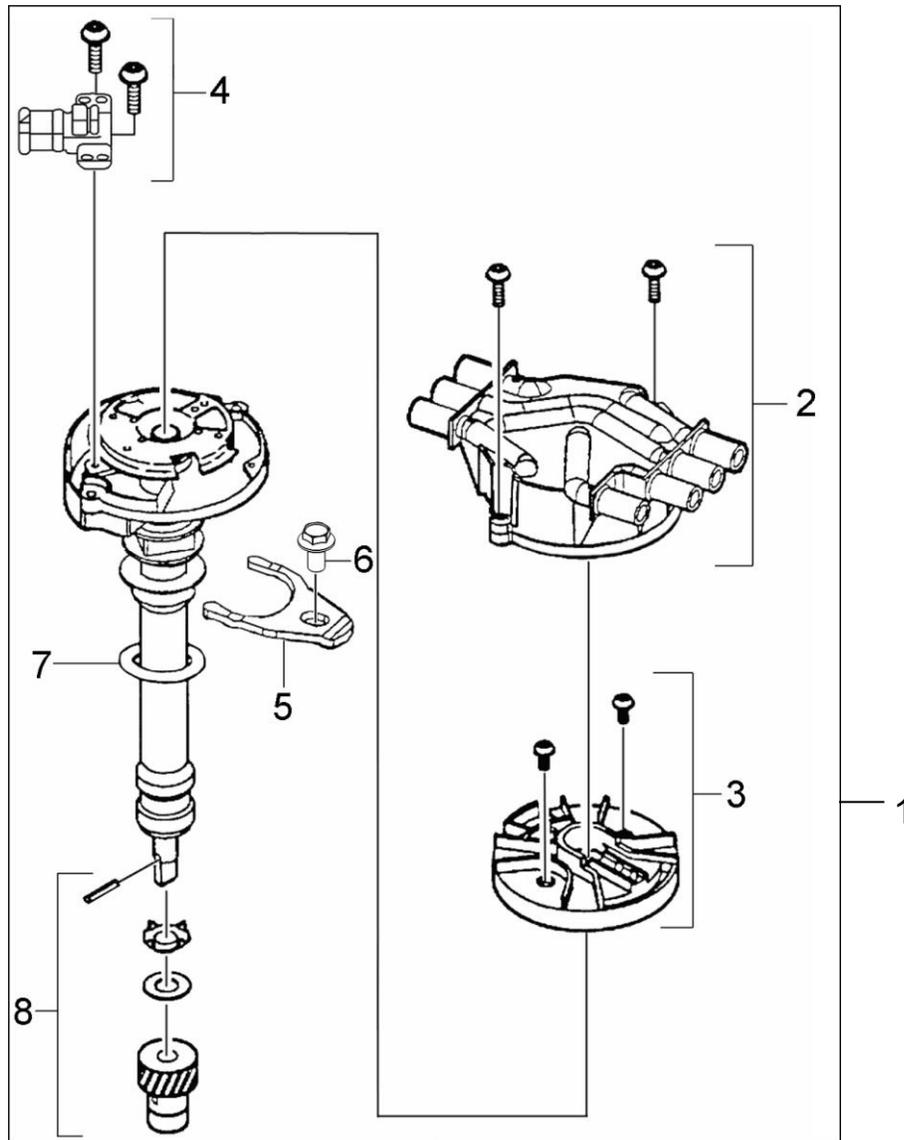
Item #	Description	Qty	GM Part Number
1	Oil Fill Cap	1	12573336
2	Oil Fill Tube Extension	1	12570623

IGNITION MODULE/COIL (2007-2008)



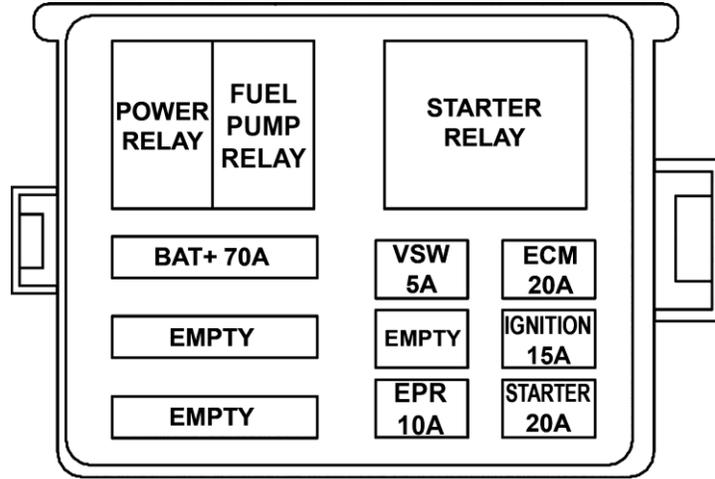
Item #	Description	Qty	Part Number	GM Part Number
1	Ignition Control Module & Coil	1		93804365
2	Bracket, Ignition Coil	1	B4-50092-001	
3	Screw Hex Flange M8-1.25 x 16MM	2	S1-30871-02-0816	
4	Washer, Lock 3/8"	2	93300000	
5	Screw, Hex Head SEMS 3/8"-16 x 3/4"	2	90305250	

DISTRIBUTOR (2007-2008)

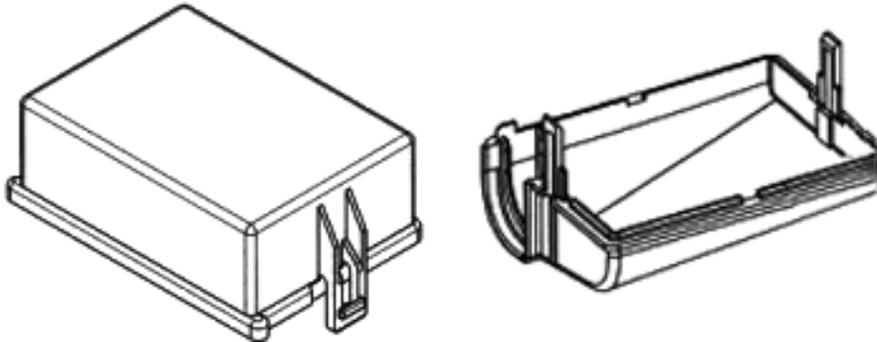


Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245490	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

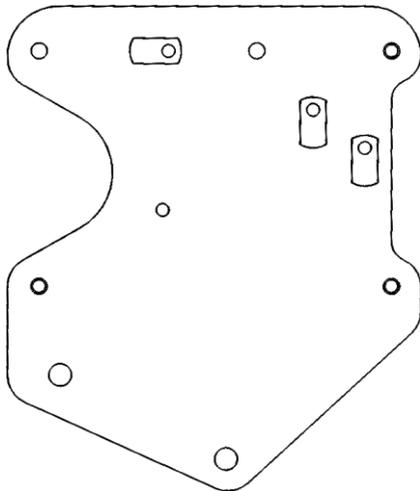
WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)



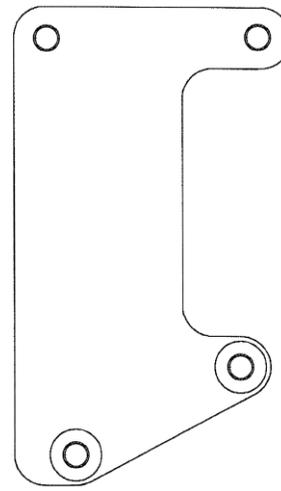
Fuse Box Covers



Fuse Box Mounting Brackets



Original Bracket



New Bracket

4.3L MCFA Lift Trucks

Spectrum Series III



WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)

Item #	Description	Qty	Part Number	Manuf. P/N
1 (Not Shown)	Main Wire Harness	1	E1707101 (2007 & Early 2008) E1707401 (Later 2008)	
Power Relay	Power Relay	1	885014	885014
Starter Relay	Starter Relay	1	792185	792185
Alternator 60A Fuse	60A Maxi Fuse	1	938198	938198
VSW 5A Fuse	5A Minifuse	1	7380660	914572
ECM 20A Fuse	20A Minifuse	1	7381270	914592
Ignition 15A Fuse	15A Minifuse	1	7381120	230898
EPR 10A Fuse	10A Minifuse	1	914584	914584
Starter 20A Fuse	20A Minifuse	1	7381270	914592
	Fuse Box Cover (Top) w/Label	1	E-6131-1	
	Fuse Box Cover (Top) w/o Label	1	E-6131	
	Fuse Box Cover (Bottom)	1	E-6132	
	Fuse Box Mounting Bracket, Original	1	7370810	
	Fuse Box Mounting Bracket, New	1	B4-51072-001	

WIRE HARNESS REPAIR (2007-2008)

The individual wire harness connectors listed below replace connectors on P/N E1707100, MCFA LPG Spectrum Series III Wire Harness. Each connector or “pigtail” is pre-wired and tested.

Connector #	Pigtail Part #	Connector Description	Application
C002	PT-E1707100-C002	Pigtail, Service Only	LPG Temperature Sensor
C003	PT-E1707100-C003	Pigtail, Service Only	Shut-Off Valve
C004	PT-E1707100-C004	Pigtail, Service Only	HEGO 2, Includes Clip
C005	PT-E1707100-C005	Pigtail, Service Only	HEGO 1, Includes Clip
C006	PT-E1707100-C006	Pigtail, Service Only	Bosch TMAP
C007	PT-E1707100-C007	Pigtail, Service Only	ECT Sensor
C008	PT-E1707100-C008	Pigtail, Service Only	Oil Pressure Switch
C009	PT-E1707100-C009	Pigtail, Service Only	Ignition Coil
C010	PT-E1707100-C010	Pigtail, Service Only	Ground
C011	PT-E1707100-C011	Pigtail, Service Only	Ignition Module
C012	PT-E1707100-C012	Pigtail, Service Only	Vehicle Interface Connector
C013	PT-E1707100-C013	Pigtail, Service Only	Starter Solenoid
C014	PT-E1707100-C014	Pigtail, Service Only	Diagnostic Connector Includes Protective Cap & Clip
C015	PT-E1707100-C015	Pigtail, Service Only	Crank Sensor
C016	PT-E1707100-C016	Pigtail, Service Only	Cam Sensor
C017	PT-E1707100-C017	Pigtail, Service Only	Bosch Throttle
C018	PT-E1707100-C018	Pigtail, Service Only	EPR
C019	PT-E1707100-C019	Pigtail, Service Only	Battery Pos (+)
C020	PT-E1707100-C020	Pigtail, Service Only	Alternator Pos (+) Includes Boot
C021	PT-E1707100-C021	Pigtail, Service Only	Alternator
C022	PT-E1707100-C022	Pigtail, Service Only	Use PT-E1707100-C010
C023	PT-E1707100-C023	Pigtail, Service Only	Alternator Neg (-)

Refer to the wire harness drawing or schematic provided in the IMPCO service manual, identify the connector in need of replacement and its CO (connector) number, then identify the part number using the above table.

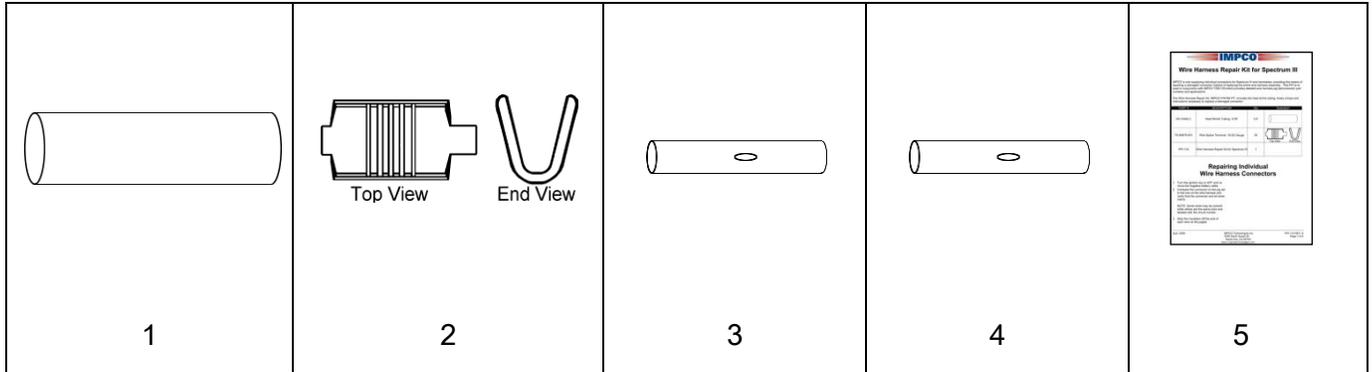
4.3L MCFA Lift Trucks

Spectrum Series III



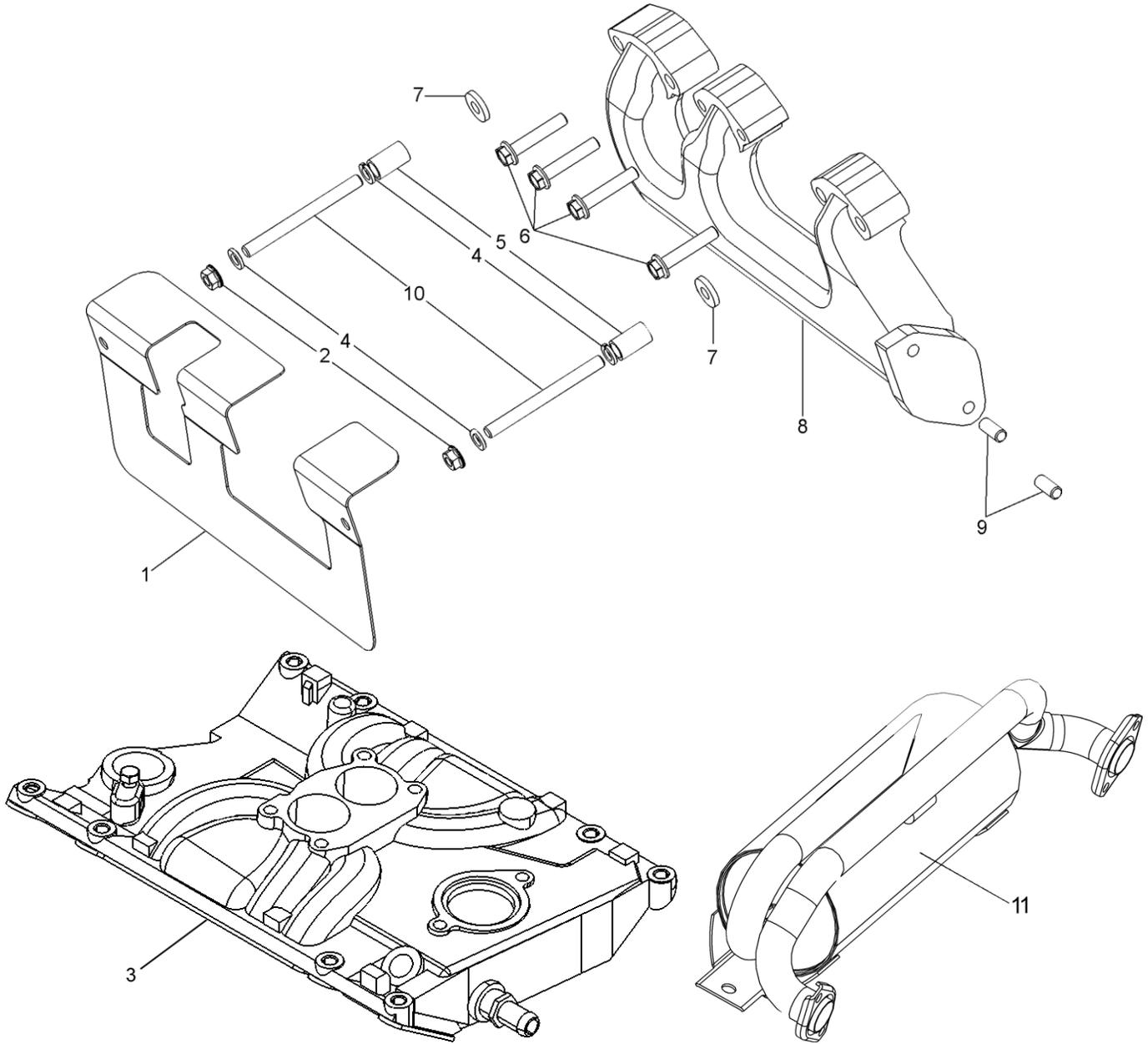
WIRE HARNESS REPAIR (2007-2008)

Repair Kit, P/N RK-PT, provides the following components necessary to splice in a new connector:



Item #	Description	Qty	Part Number
1	Heat Shrink Tubing, 3/16"	3.5'	H5-15342-1
2	Wire Splice Terminal, 16-22 Gauge	30	T4-50879-001
3	Butt Splice, 16-14 gauge wire	30	330368
4	Butt Splice, 12-10 gauge wire	30	330369
5	Wire Harness Repair Kit Instructions for Spectrum III	1	PPI-114

MANIFOLDS & EXHAUST SYSTEM (2007-2008)



4.3L MCFA Lift Trucks

Spectrum Series III



MANIFOLDS & EXHAUST SYSTEM (2007-2008)

Item#	Description	Qty	Part Number	GM Part Number
1	Shield, Exhaust Manifold	2	7152020	
2	Nut, Hex, 3/16-16	4	95300000	
3	Intake Manifold	1		12595828
4	Washer, Lock 3/8"	8	93300000	
5	Spacer, 16mm OD x 32mm LG MCFA	4	7151980	
6	Bolt, 3/8"-16-2" hex, flange Gr8	8	90328200	
7	Washer, Flat 3/8" ID 3/16" thick	4		00666674
8	Manifold, Exhaust, RH	1	7152040	
	Manifold, Exhaust, LH	1	7152030	
9	Stud, Exhaust M10-1.25 x 25mm	4	7151990	
10	Stud, Exhaust 3/8" x 16 x 4-14"	4	7152050	
11	Catalytic Converter	1	C12-50185-001	

SERVICE BLOCK (2007-2008)

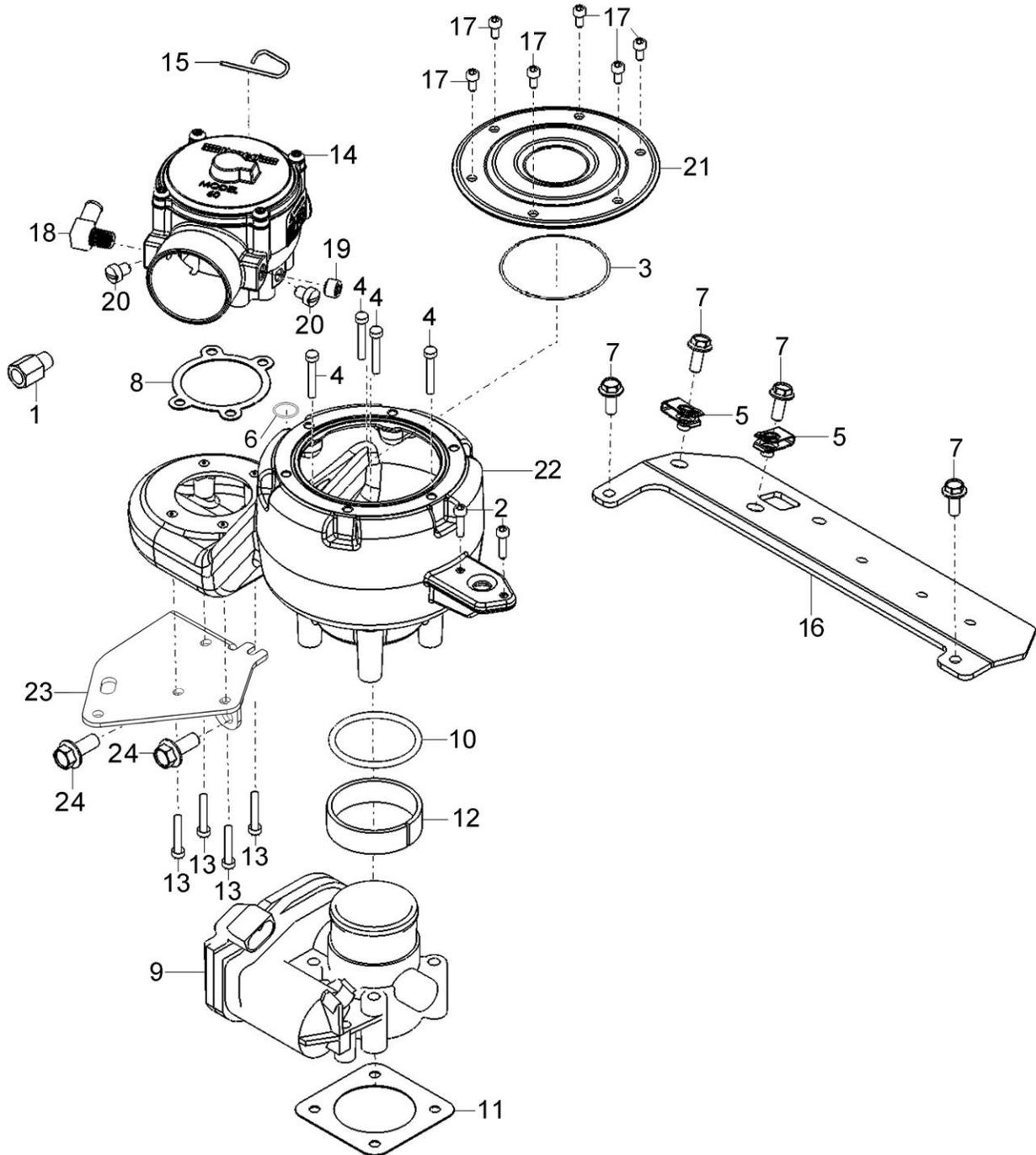


Description	Qty	GM Part Number (For Reference Only)
2007 Service Block	1	7043321*
2008 Service Block	1	12593055*

*Requires that the distributor, ignition coil and other minor bolt-on parts be transferred from the original engine.

NMHG 2.0 & 2.2L Lift Trucks

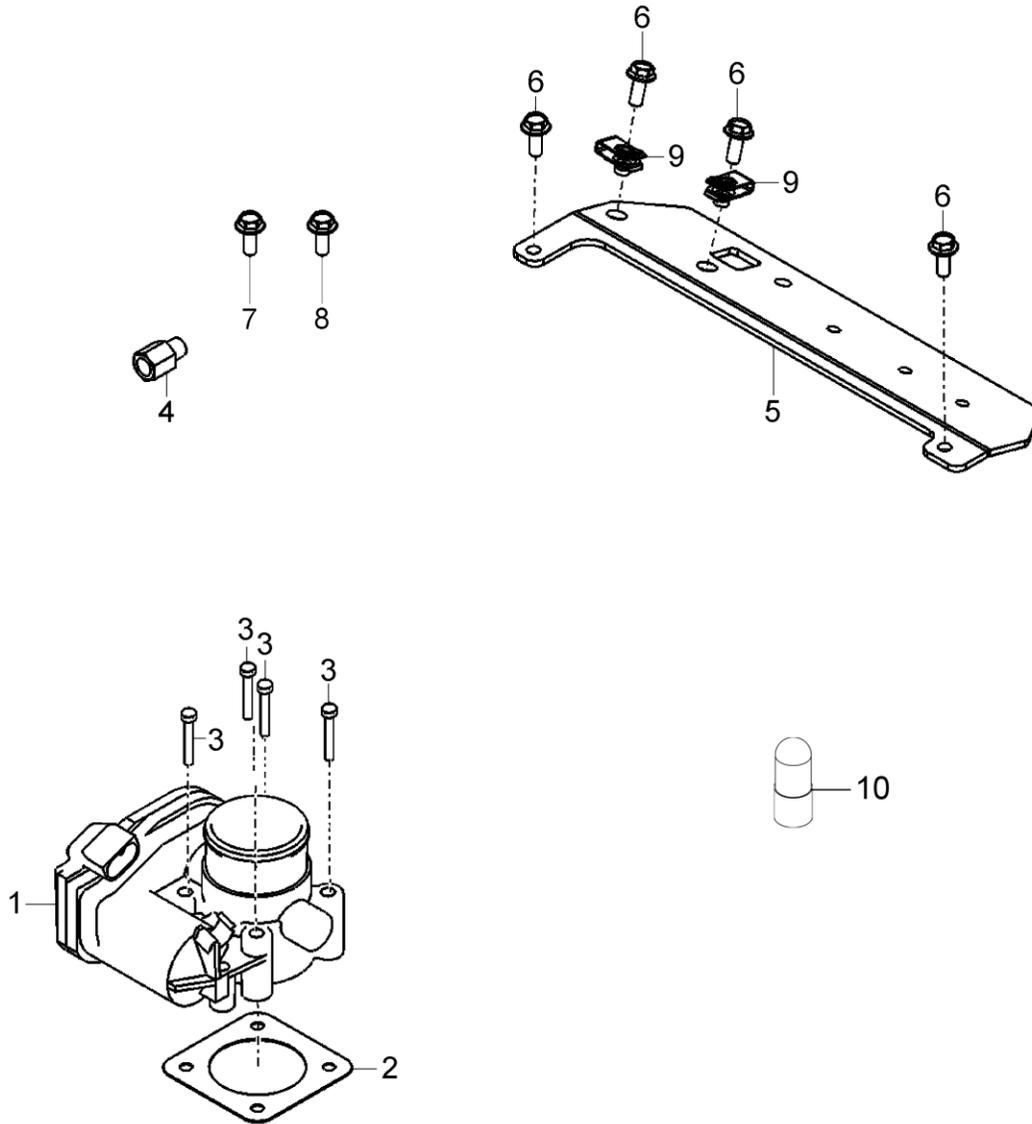
MIXER AND THROTTLE BODY ASSEMBLY (LPG, 2007-2008)



MIXER AND THROTTLE BODY ASSEMBLY (LPG, 2007-2008)

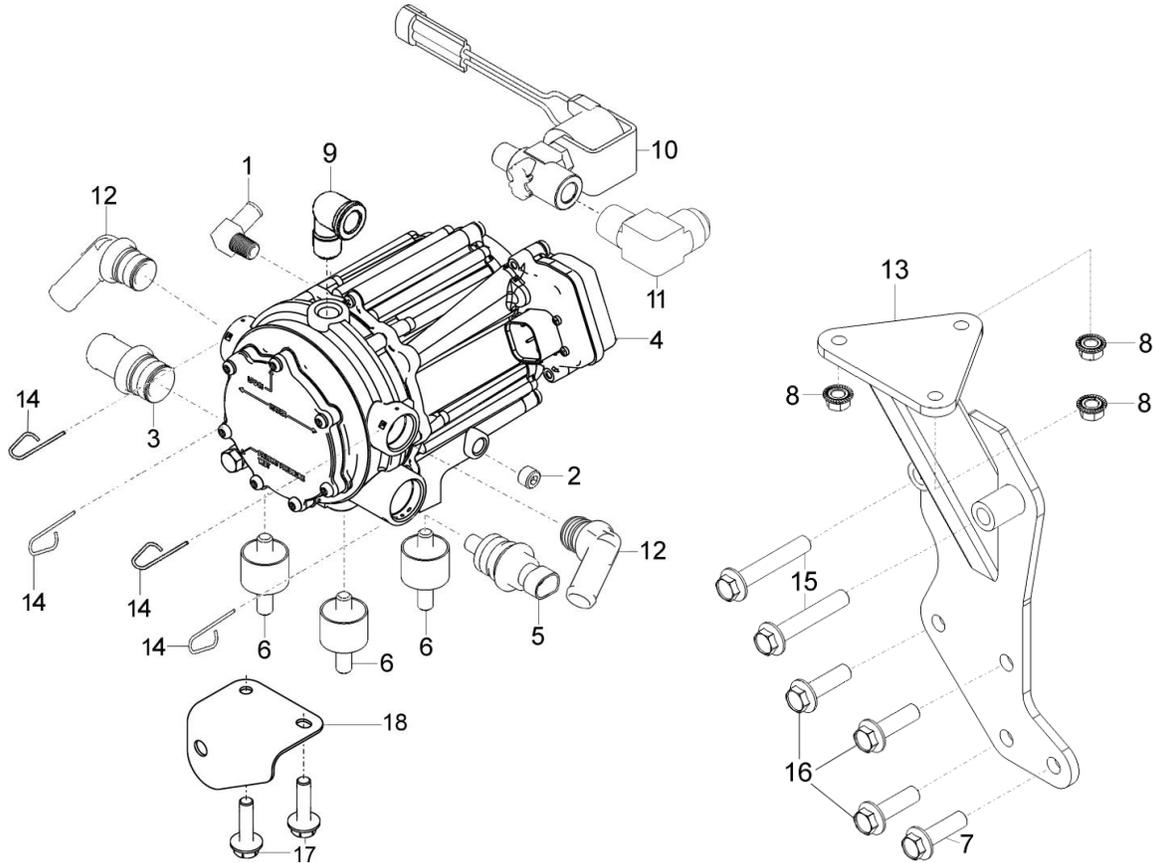
Item#	Description	Qty	Part Number
1	Adapter, Nipple Tube Fitting (Oil Sender)	1	A4-50175-001
2	Screw, Hex Cap, MAP Sensor M4x16	2	S1-30295-0416
3	O-Ring	1	S3-1524-005
4	Screw, SHCS-w/Sealant Lock	4	S1-50237-12-0690
5	Nut, Clip M6	2	N1-50181-0640
6	Seal, Air Intake (IAT) Sensor	1	S3-50236-001
7	Screw, Hex Flange, M6 X 16MM	4	S1-30871-02-0616
8	Gasket, Throttle-Mixer, 100, 125	1	G1-11
9	Throttle Body 40 mm, BOSCH	1	E1312100
10	O-ring Nitrile	1	S3-1524-004
11	Gasket, BOSCH TBI	1	G1-50449-001
12	Sleeve, Plastic BOSCH Throttle	1	S6-30976-001
13	Screw, M6x10 mm	4	S1-50237-21-0548
14	Mixer, 60 Series	1	FT60M-30741-52-005
15	Pin Retainer (also used on EPR)	1	P1-30559
16	Brkt, Relay NACCO Series III	1	7370840
17	Screw	6	S1-50237-41-0512
18	Fitting, 1/8 NPT 3/8Hs 90El Nyl	1	F4-12
19	Plug, 1/8 NPT Hex Hd Stl Oxd	1	P3-46
20	Screw, 1/4x28 x 5/16	2	S1-69
21	Cover, Air Intake	1	NSS
22	Adapter, Mixer to Throttle	1	NSS
23	Bracket, Air Box Support	1	B4-50233-001
24	Screw, Hex Flange, M10 x 18mm	1	S1-30871-04-1018

THROTTLE BODY (GASOLINE, 2007-2008)



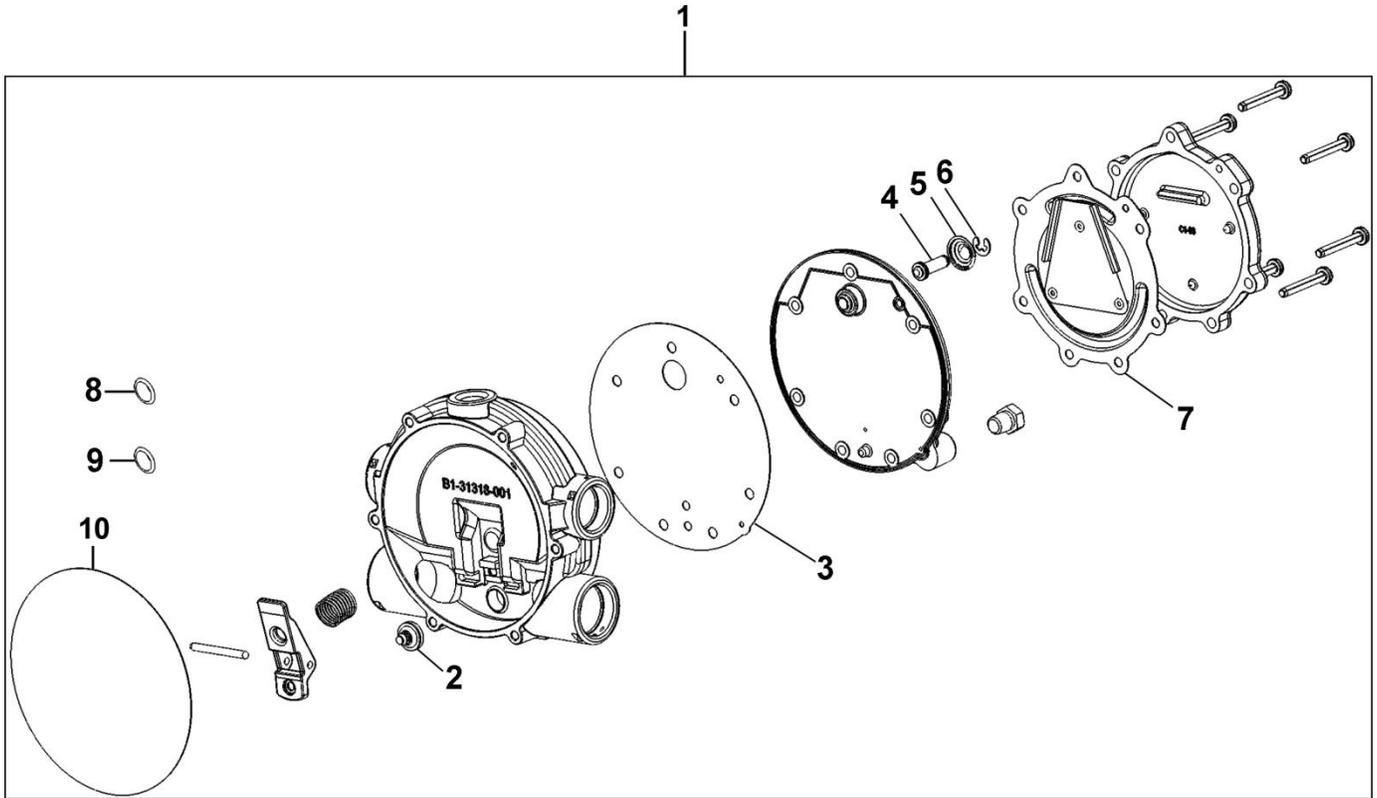
Item#	Description	Qty	Part Number
1	BOSCH Throttle Body 40 mm	1	E1312100
2	Gasket, BOSCH TBI	1	G1-50449-001
3	Bolt, M6 X 1.0 X 50 mm	4	S1-30295-0650
4	Adapter, Nipple Tube Fitting	1	A4-50175-001
5	Bracket, Relay NACCO Series III	1	7370840
6	Screw, Hex Flange, M6 X 16 mm	4	S1-30871-02-0616
7	Screw, M6x10 mm	4	S1-30871-02-0610
8	Screw, Hex Flange, M8 X 10MM	1	S1-30871-02-0810
9	Nut, Clip M6	1	N1-50181-0640
10	5/16" Rubber Cap for unused Intake Manifold fitting.	1	C2-10760-003

EPR ASSEMBLY (LPG, 2007-2008)



Item#	Description	Qty	Part Number
1	Fitting, 1/8 NPT X 3/8 H 90° EL NYL	1	F4-12
2	Plug, 1/8 NPT 3/16 Hex SCH Brass	1	P3-46
3	Fitting, Assy., Straight, 3/4"	1	AF4-31193-001
4	Electronic Pressure Regulator, (EPR)	1	EPR-50388-001
5	Sensor, Fuel Temperature	1	AS8-31353-001
6	Vibration Mounts	3	R5-50080-002
7	Screw, Hex Flange-M10X1.25X35	1	S1-30871-04-1035
8	Nut-Hex Flange	3	N1-30876-M08
9	Fitting, 1/4 NPT Street 90 EL Brass	1	F4-16238-1
10	Valve, LPG Shut-off	1	ET98-30515-001
11	Fitting, 1/4 NPT 3/8 Flare Brass 90°	1	F4-25
12	Fitting, Ass'y, 70-degree 5/8"	2	AF4-30614
13	Bracket, EPR	1	7176720
14	Pin Retainer (also used on Mixer)	4	P1-30559
15	Screw, Hex Flange-M10X1.25X60	2	S1-30871-04-1060
16	Screw, Hex Flange	3	S1-30871-04-1030
17	Screw, Hex Flange, M6-1.0 X 12mm	2	S1-30871-02-0612
18	Bracket, Retaining Hose	1	B4-50319-001

EPR REGULATOR REPAIR (LPG, 2007-2008)

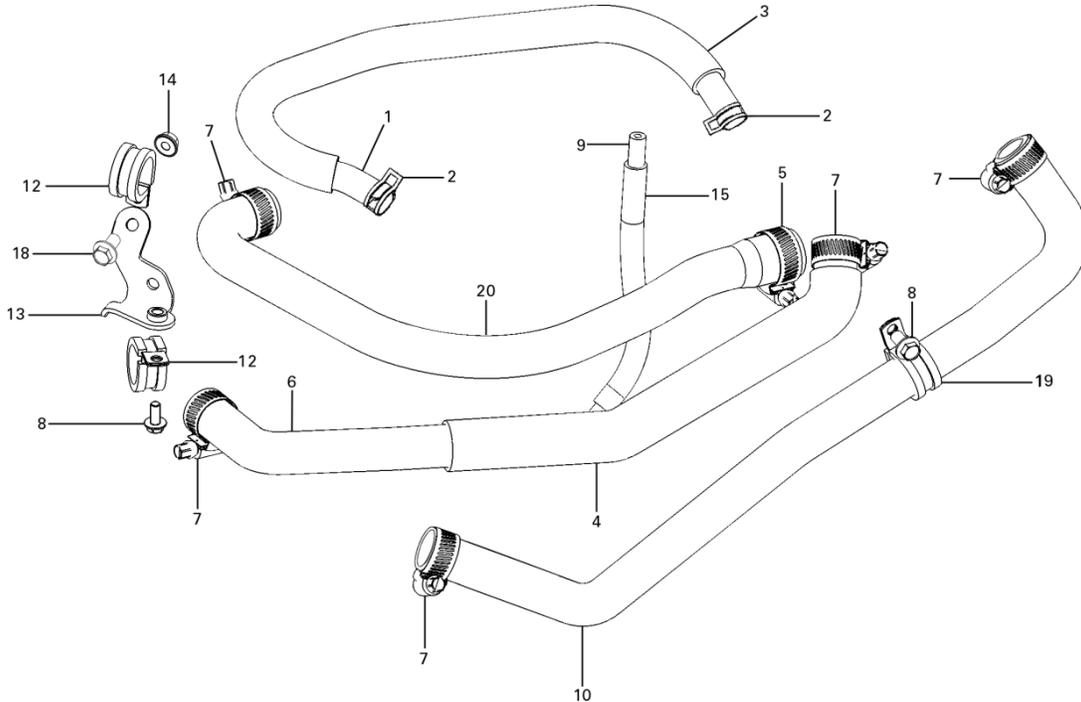


EPR REGULATOR REPAIR (LPG, 2007-2008)

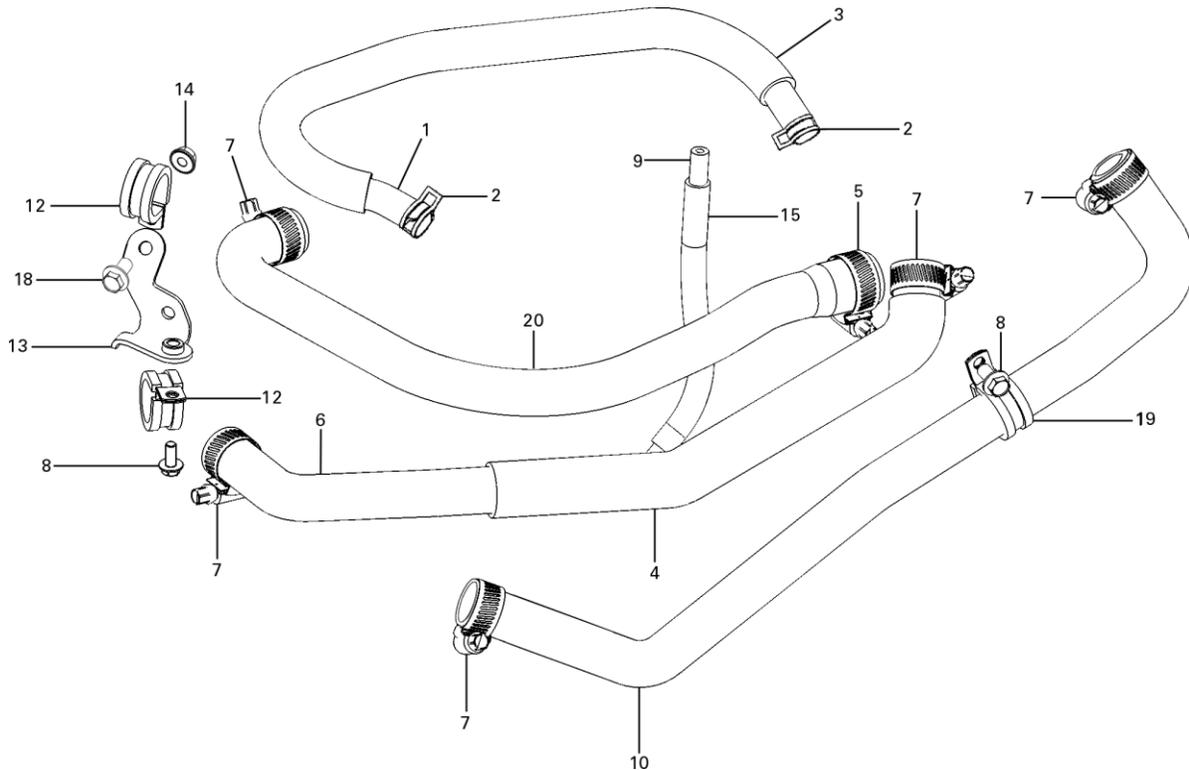
Item#	Description	Qty	Part Number
1	Kit, Minor Repair (Includes items 2-10 only)	1	RK-EPR-3
	Kit, Major (Includes All parts shown in box, assembled)	1	RK-EPR-4
2	Seat, Secondary	1	NSS
3	Gasket, Body Secondary	1	NSS
4	Pin, Primary	1	NSS
5	Spring, Primary	1	NSS
6	Clip, Primary	1	NSS
7	Diaphragm, Primary	1	NSS
8	O-ring	4	NSS
9	O-ring	4	NSS
10	Seal, Clamp Plate, EPR	1	NSS

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (LPG, 2007-2008)

For Engines With a 10mm (3/8”), 90° Coolant Hose Fitting:



For Engines With a 5/8”, Straight Coolant Hose Fitting:



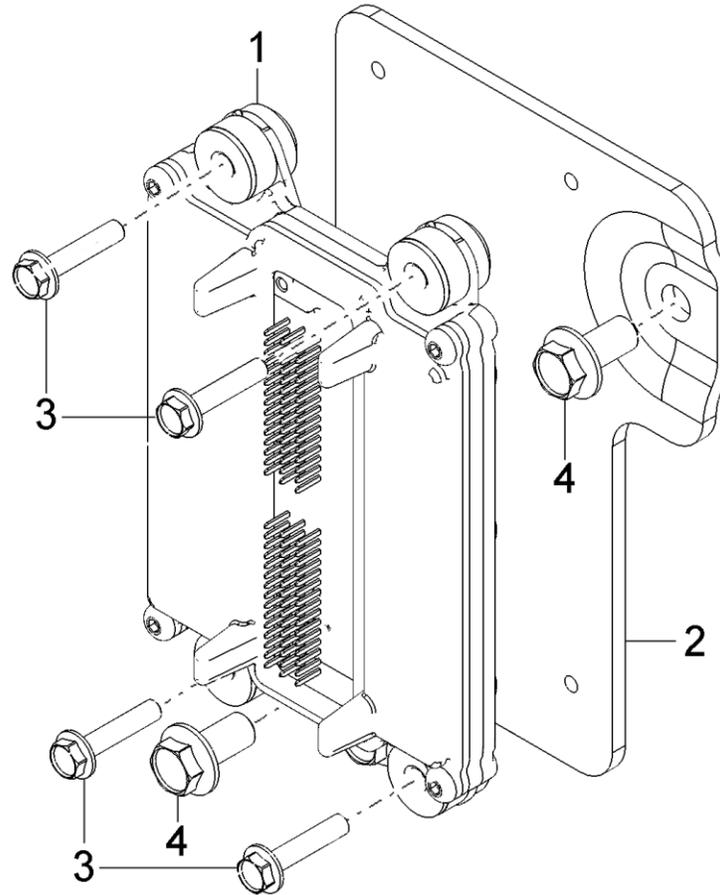
HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (LPG, 2007-2008)

Item#	Description	Qty	Part Number
1	Hose, Balance 3/8"	1	H1-19253-010
2	Clamp, Hose	2	C2-16664-1
3	Conduit, Round Convolute 5/8" ID	1	W3-50302-004
4	Conduit, Round Convolute	1	NSS
5	Clamp, Hose	1	C2-14106-006
6	Hose, Formed-Coolant	1	H1-50253-001
7	Clamp, Hose	5	C2-14106-006
8	Screw, Hex Flange M6 X 16MM	2	S1-30871-02-0616
9	Hose, Vacuum 5/32"	1	H1-19253-011
10	Hose 5/8" ID Formed*	1	H1-50253-001
	Hose, Formed, Coolant**	1	H1-50320-001
11	Hose Coolant ID 3/8"	1	H1-19255-018
12	Clamp, Loop Cushion	2	C2-16653-6
13	Bracket, Hose Support	1	B4-50260-001
14	Nut, Hex Flange Serrated	1	N1-30876-M06
15	Conduit, Round Convolute	1	NSS
16	Adapter 5/8-3/8*	1	A4-50082
17	Clamp, Hose*	2	C2-14106-018
18	Screw, Hex Flange M10x18mm Fine	1	S1-30871-04-1018
19	Clamp, Tubing 7/8" ID	1	C2-16653-6
20	Hose, Fuel (non-1 Ton)	1	H1-50232-001
	Hose, Fuel (1 Ton)	1	H1-50232-002

*Used on engines with a 10mm (3/8"), 90° coolant hose fitting (2007 & early 2008 production).

** For engines with a 5/8", straight coolant hose fitting (later and post 2008 production).

ENGINE ELECTRICAL (LPG & GASOLINE, 2007-2008)



ECM/Calibration Application Table

Hardware Module Part Number	Gov RPM	Engine/Fuel	NMHG ECM Part Number
E1687002	2400	2.0 LPG	8539149
E1687002	2700	2.0 LPG	8539150
E1687001	2400	2.0 GAS	8539155
E1687001	2700	2.0 GAS	8539156
E1687002	2700	2.2 LPG	8539151
E1687001	2700	2.2 GAS	8539157
E1687006	2400	2.0 LPG	8546571
E1687006	2700	2.0 LPG	8546572
E1687006	2700	2.2 LPG	8546573
E1687007	2400	2.0 GAS	1702980
E1687007	2700	2.0 GAS	1702981
E1687007	2700	2.2 GAS	1702982

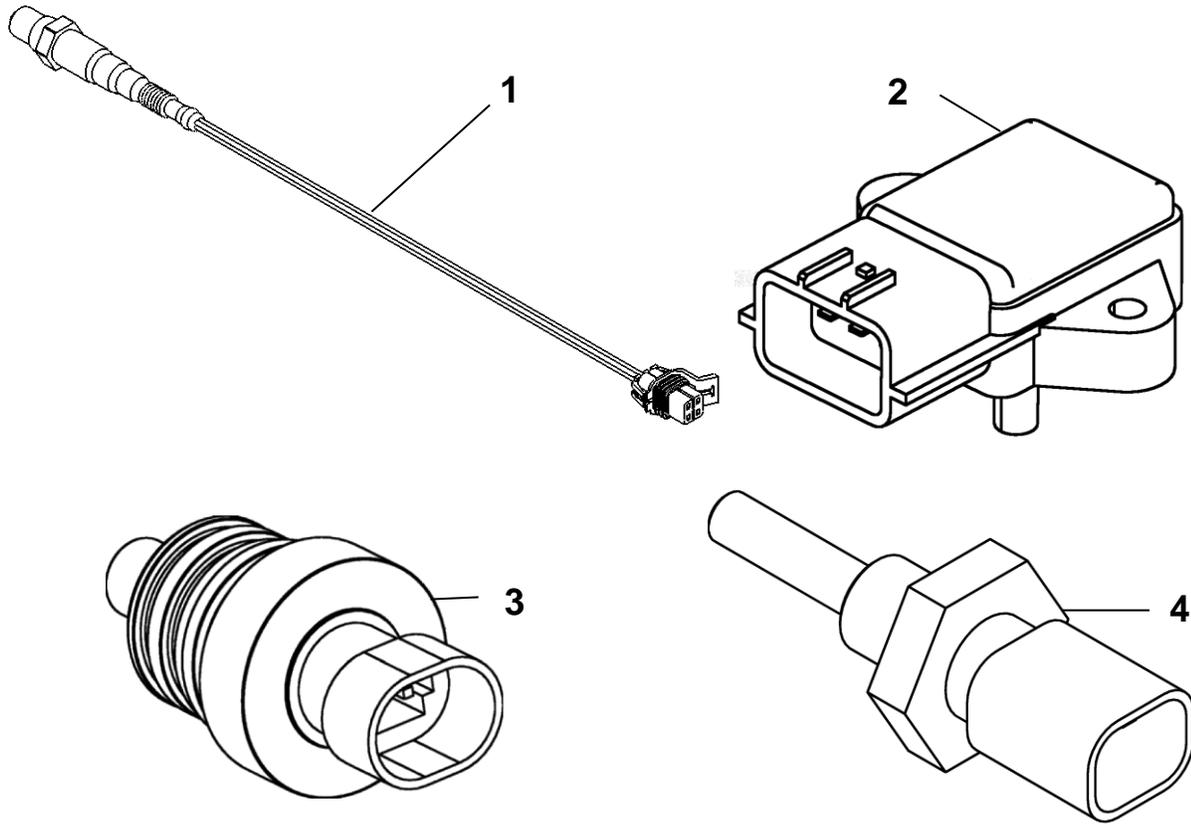
NMHG 2.0 & 2.2L Lift Trucks

Spectrum Series III



Item#	Description	Qty	Part Number
1	Engine Control Module Blank - See Table Above for part number and calibrations	1	See Table Above
2	Bracket, ECM	1	7370830
3	Screw, Hex Flange-M6 X 1 X 30	4	S1-30871-02-0630
4	Screw, Hex Flange, M10 x 1 x 18mm	2	S1-30871-04-1018
Wire Harness (Not Shown)	Engine Harness, Main	1	E1741000(LPG) (Gasoline is NLA)
VSW 5A (Not Shown)	Fuse, Mini-Fuse 5A	1	7380660
EPR 10A (Not Shown)	Fuse, Mini-Fuse 10A	1	914584
MAXI 50A (Not Shown)	Fuse, Maxi-Fuse 50A	1	7381280

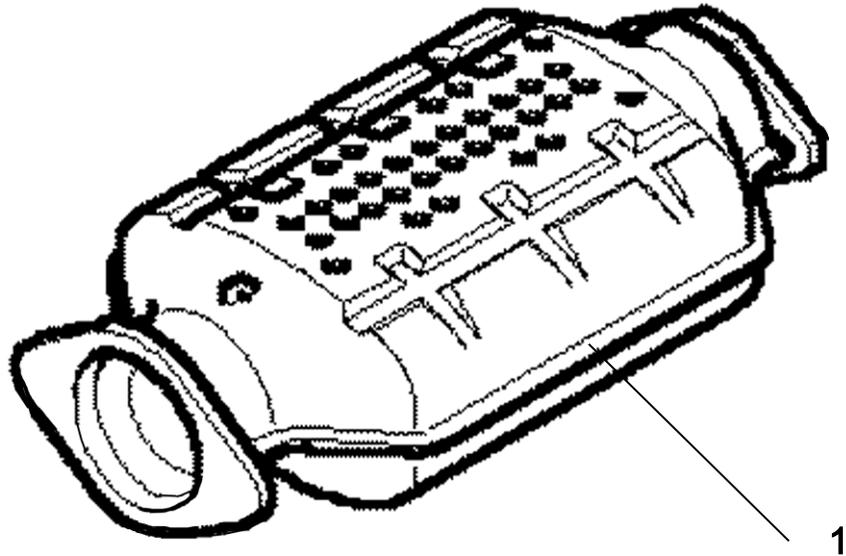
SENSOR LPG (2007-2008)



Item#	Description	Qty	App	Part Number
1	Sensor, Oxy BOSCH LSF4 AU	2	LPG & GASOLINE	S8-50234-001
2	Sensor, MAP	1	LPG	S8-50077
3	Sensor, Air Temp (IAT)	1	LPG	See EPR*
4	Sensor, Coolant Temp	1	LPG & GASOLINE	S8-50079

*See EPR Assembly for Fuel Temp Sensor

EXHAUST SYSTEM (LPG & GASOLINE, 2007-2008)



Item#	Description	Qty	App	Part Number
1	Catalytic Converter	1	All	7332570

WIRE HARNESS REPAIR (LPG, 2007-2008)

The individual wire harness connectors listed below replace connectors on P/N E1741000 Spectrum Series III Wire Harness. Each connector or “pigtail” is pre-wired and tested.

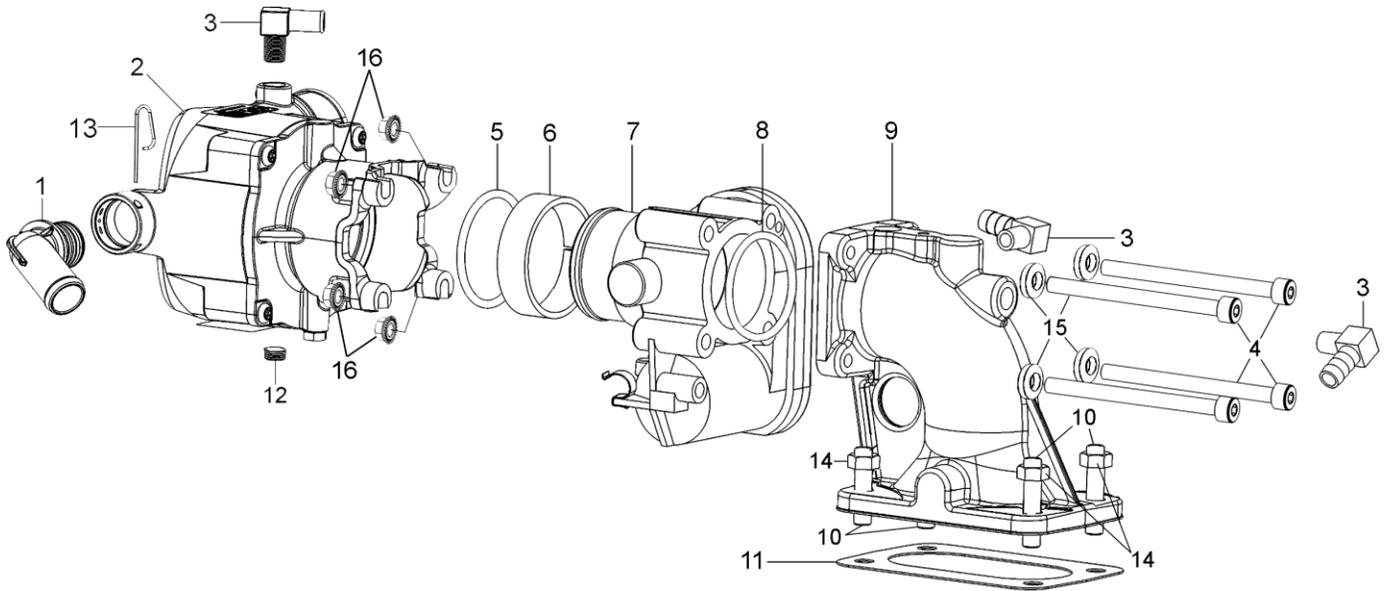
Connector#	IMPCO P/N	Connector Description
C003	PT-E1741000-C003	ECM Test Port
C004	PT-E1741000-C004	LPG Shut-off Valve
C005	PT-E1741000-C005	LPG Temp Sensor
C006	PT-E1741000-C006	Post-Cat HEGO
C007	PT-E1741000-C007	ECT
C008	PT-E1741000-C008	IAT
C009	PT-E1741000-C009	MAP
C010	PT-E1741000-C010	Oil Pressure Sensor
C011	PT-E1741000-C011	Ground
C012	PT-E1741000-C012	LPG Low Pressure Sensor
C013	PT-E1741000-C013	Air Filter Restriction Indicator
C015	PT-E1741000-C015	Pre-Cat HEGO
C016	PT-E1741000-C016	VIC 8-Pin
C017	PT-E1741000-C017	VIC 6-Pin
C018	PT-E1741000-C018	VIC 4-Pin
C019	PT-E1741000-C019	Diagnostic Connector
C020	PT-E1741000-C020	Ignition Suppressor
C021	PT-E1741000-C021	Cam Angle Sensor
C022	PT-E1741000-C022	EPR Interface
C023	PT-E1741000-C023	Starter Solenoid
C024	PT-E1741000-C024	Ignition Coil, Cyl #4
C025	PT-E1741000-C025	Ignition Coil, Cyl #3
C026	PT-E1741000-C026	Ignition Coil, Cyl #2
C027	PT-E1741000-C027	Ignition Coil, Cyl #1
C028	PT-E1741000-C028	Bosch Throttle Body
C029	PT-E1741000-C029	Alternator
C030	PT-E1741000-C030	Alternator (Ring Terminal)
C031	PT-E1741000-C031	Batt +
C032	PT-E1741000-C032	Fuse Holder
N/A	PT-E1741000-MAXI	Maxi Fuse Holder

ENGINE ELECTRICAL (LPG & D/F)

Calibrated ECM Part Number	Calibration Number	Engine/Fuel	Governed Speed	Idle Speed
2071612	2071612H	2.0 LPG	2700	800
2091612	2091612J	2.0 Dual Fuel	2700	800

4.3L Generic Lift Trucks

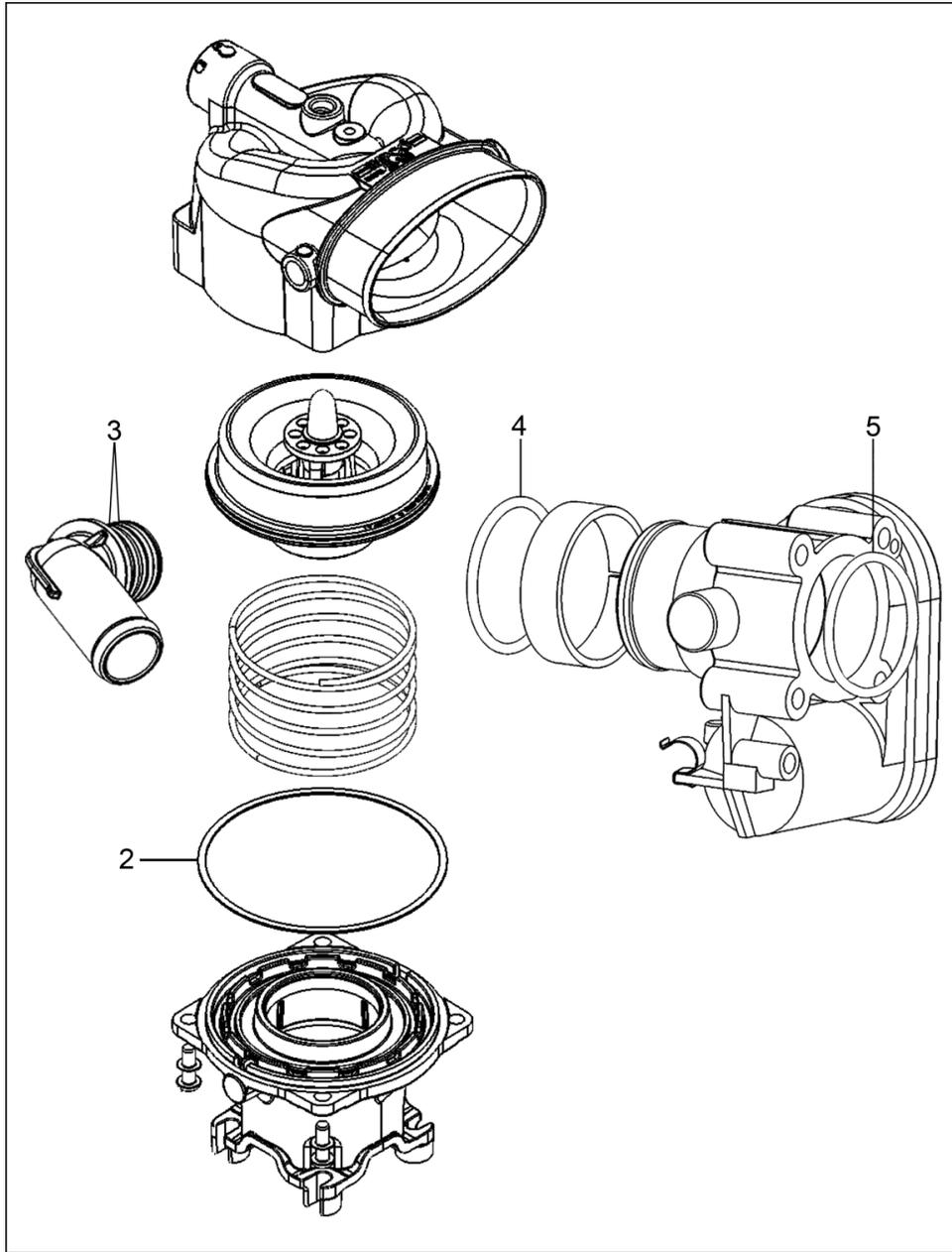
MIXER AND THROTTLE BODY ASSEMBLY (2007-2008)



Item#	Description	Qty	Part Number
1	Fitting, 70-Degree, 3/4" OD	1	AF4-31197-001
2	Carburetor ASM, 20-150	1	FT150-30919-20-001
3	Fitting, 1/8 NPT 3/8 Hs 90 El Brass	3	401-02
4	Screw, Hex Sock Cap	4	S1-30295-0670
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	Adapter, Elbow, 4.3L Lx-Bos SIII LP	1	A3-30940-001
10	Stud, 5/16-18 X 1 3/4", Torx	4	32501396
11	Gasket, Carb Mounting, 2bbl, 4.3L	1	G1-50251-001
12	Plug, 1/8 NPT 3/16 Hex Sch Brass	1	P3-46
13	Retaining Pin	1	P1-30559
14	Nut, 5/16-18, Flanged	4	N1-30876-031
15	Washer, Conical, Spring 6mm	4	W1-31039-006
16	Nut, Hex, Flange Serrated M6 X 1.0"	4	N1-30876-M06

*Included in Repair Kit RK-FT150

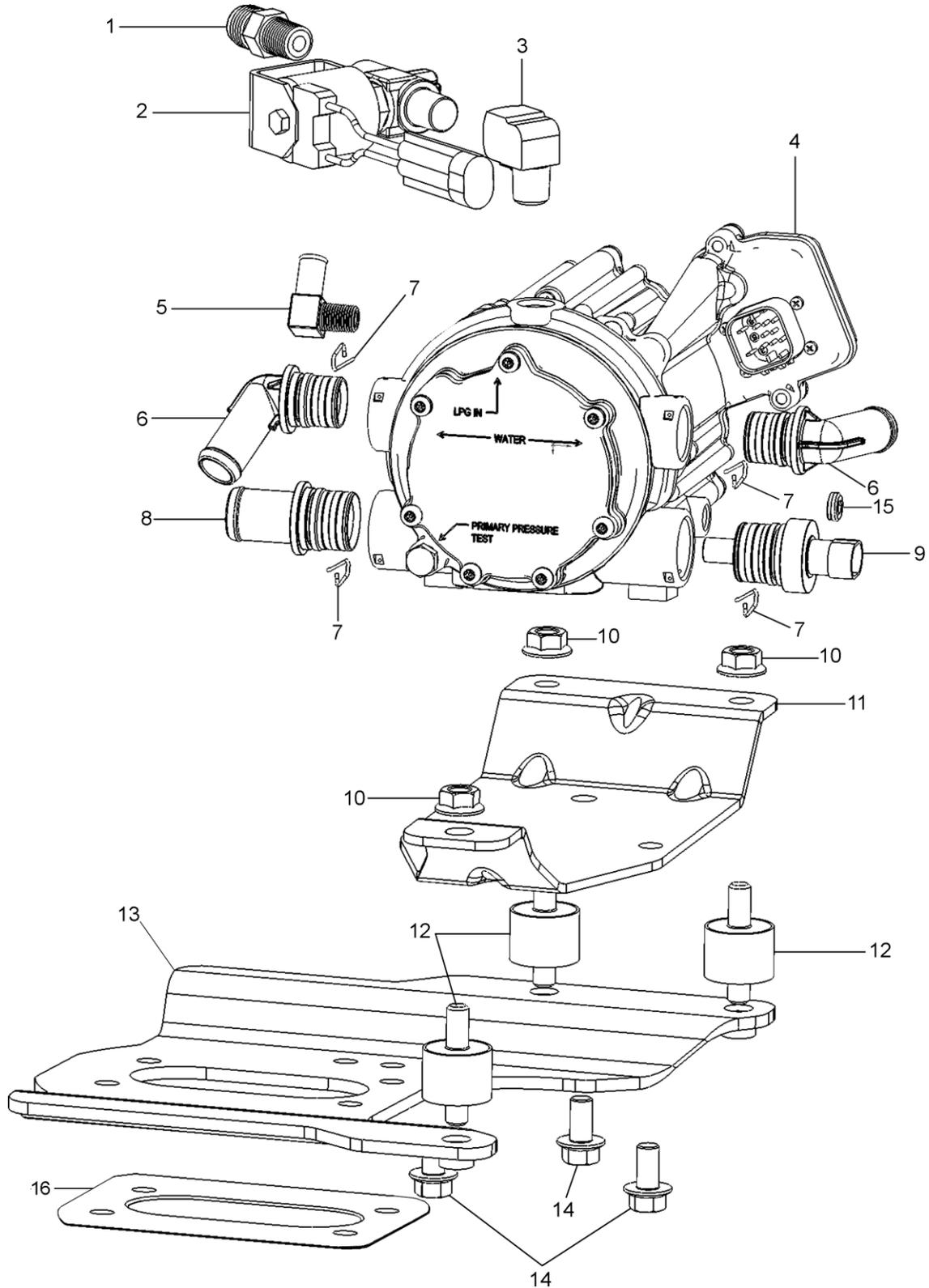
MIXER REPAIR KIT (2007-2008)



1

Item#	Description	Qty	Part Number
1	(Includes Items 2-5)	1	RK-FT150
2	Gasket	1	G1-31252-150
3	O-Ring	2	S3-31195-001
4	O-Ring	1	S3-1524-004
5	O-Ring	1	S3-1524-003

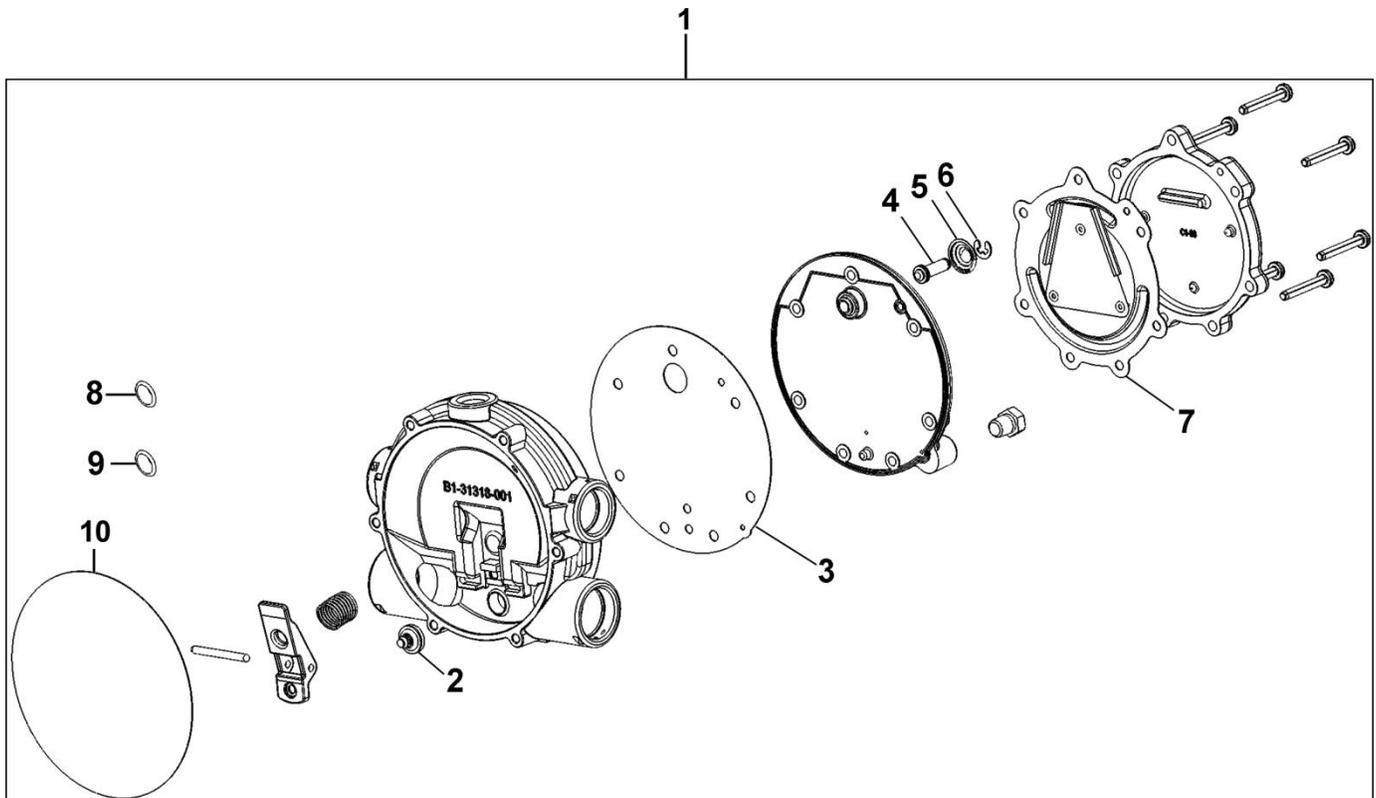
EPR ASSEMBLY (2007-2008)



EPR ASSEMBLY (2007-2008)

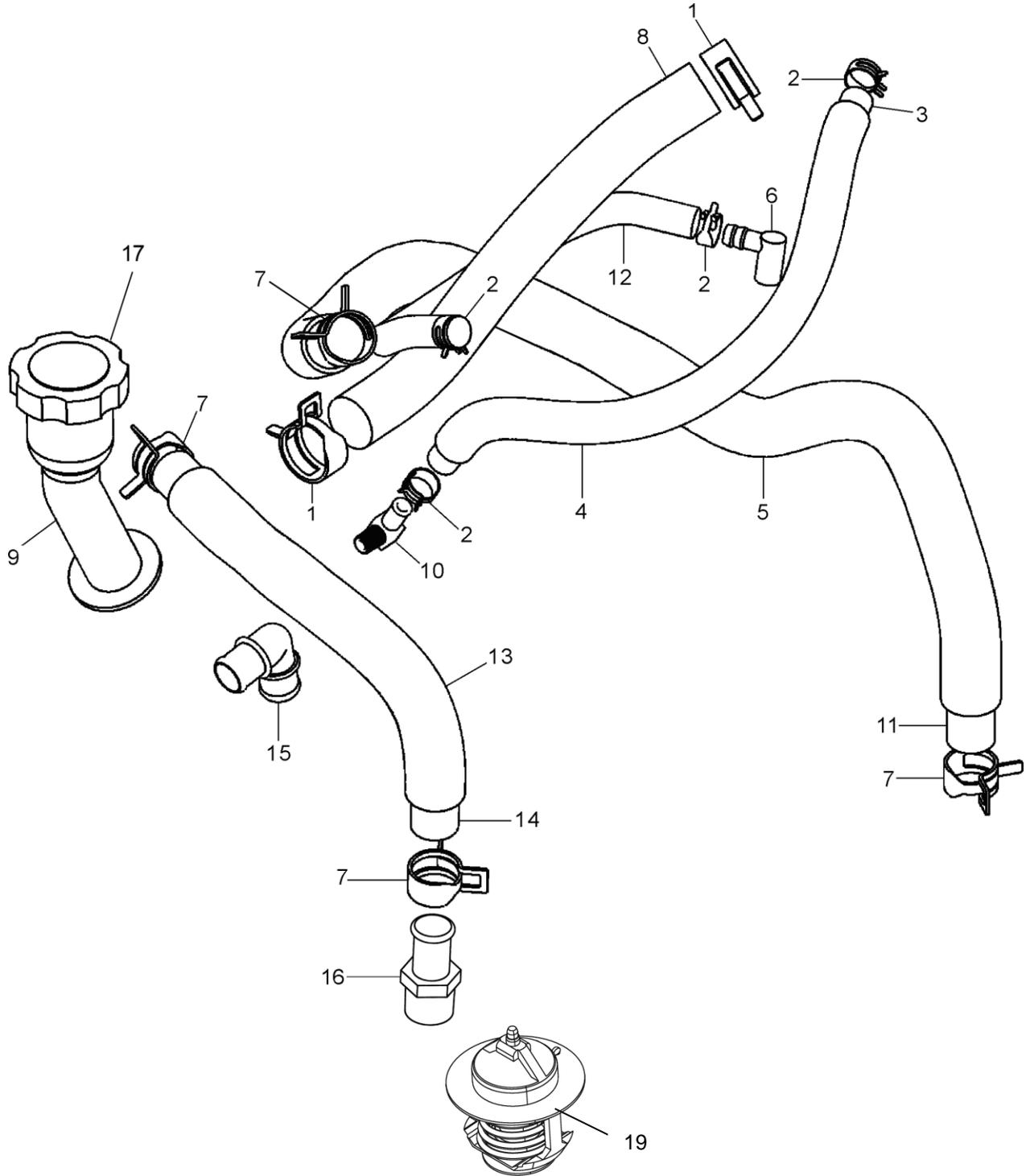
Item#	Description	Qty	Part Number
1	Fitting, ¼ NPT 3/8 Flare Brass	1	F4-14220
2	Valve, LPG Shut-Off	1	ET98-30515-001
3	Fitting, ¼ NPT Street 90 Elbow Brass	1	F4-16238-1
4	Electronic Pressure Regulator, EPR	1	EPR-50388-001
5	Fitting, 90 Deg. 1/8 NPT X 3/8	1	F4-12
6	Fitting Assembly, 70 Degree	2	AF4-30614
7	Retaining Clip	4	P1-30559
8	Fitting Ass'y, Straight, 3/4"Od	1	AF4-31193-001
9	Temperature Sensor Ass'y	See Sensors	
10	Nut, Hex Flange, Serrated	3	N1-30876-M08
11	Bracket, EPR-Upper	1	N/A
12	Mount Vibration, 2 Studs	3	R5-50080-002
13	Bracket, Mtg EPR, 2bbl, 4.3l	1	B4-50223-001
14	Screw, Hex Flange-M8x1.25x16	3	S1-30871-02-0816
15	Plug, 1/8 NPT 3/16" Hex Sch Brass	1	P3-46
16	Gasket, Carb Mounting, 2bbl, 4.3L	1	G1-50251-001

REGULATOR REPAIR KIT (2007-2008)



Item#	Description	Qty	Part Number
1	Kit, Minor Repair (Includes items 2-10 only)	1	RK-EPR-3
	Kit, Major (Includes All parts shown in box, assembled)	1	RK-EPR-4
2	Seat, Secondary	1	NSS
3	Gasket, Body Secondary	1	NSS
4	Pin, Primary	1	NSS
5	Spring, Primary	1	NSS
6	Clip, Primary	1	NSS
7	Diaphragm, Primary	1	NSS
8	O-ring	4	NSS
9	O-ring	4	NSS
10	Seal, Clamp Plate, EPR	1	NSS

HOSE ASSEMBLIES COOLANT/VACUUM/FUEL & THERMOSTAT (2007-2008)



4.3L Generic Lift Trucks

Spectrum Series III

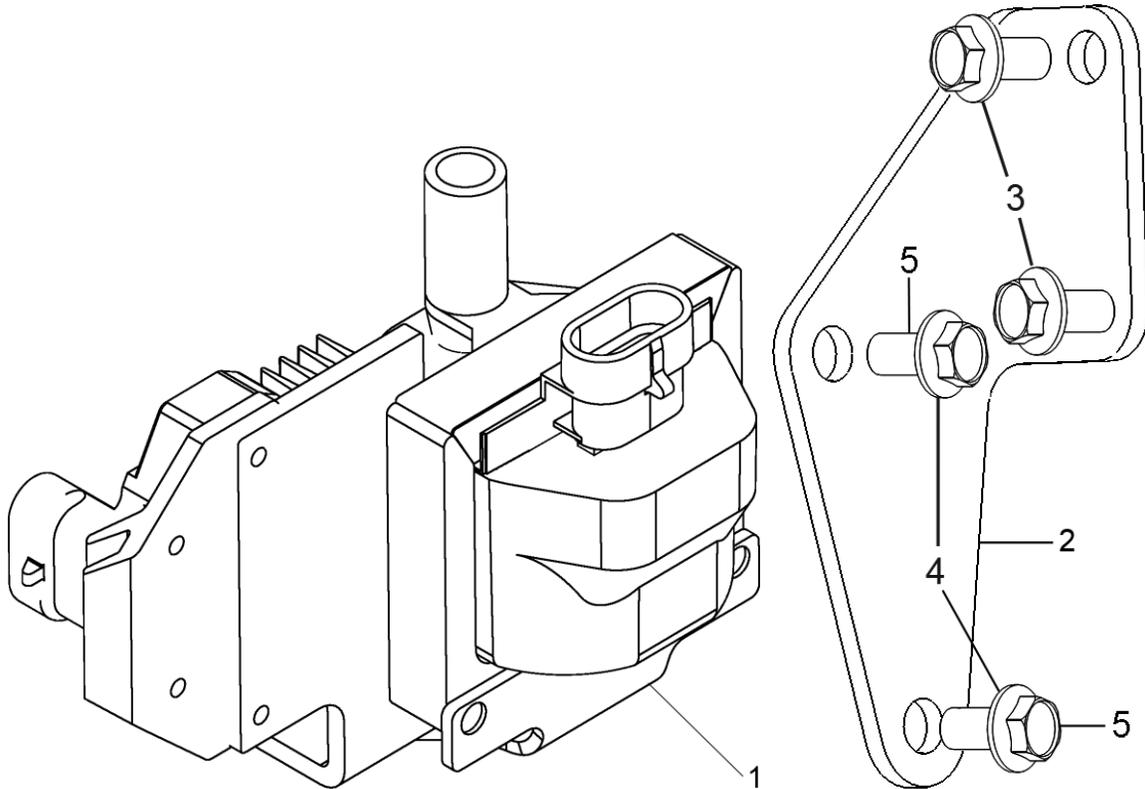


HOSE ASSEMBLIES COOLANT/VACUUM/FUEL & THERMOSTAT (2007-2008)

Item#	Description	Qty	Part Number	GM Part Number
1	Clamp, Hose, 19mm	2	C2-16664-4	
2	Clamp, Hose, .88 OD	4	C2-16664-1	
3	Hose, 3/8" Fuel/Oil 13.88"	1	H1-19253-015	
4	Conduit, Convolutd	1	NSS	
5	Conduit, Convolutd	1	NSS	
6	Fitting, Elbow, 90 Deg PCV	1	F4-30912-001	
7	Clamp, Hose, .69 OD	4	C2-16664-2	
8	Hose, 3/4" ID Fuel Oil 11.75"	1	H1-19253-016	
9	Riser, Oil Fill 4.3L	1		12570623
10	Fitting 1/8 NPT 3/8 90 Elbow Nylon	1	F4-12	
11	Hose, 5/8" ID Coolant 29.50"	1	H1-19255-017	
12	Hose, 3/8" Fuel Oil 11.75"	1	H1-19253-014	
13	Conduit, Convolutd	1	NSS	
14	Hose, 5/8" Coolant 12.25"	1	H1-19255-016	
15	Elbow, Vent, GM	1		1263193
16	Fitting, Barb St. 1/2 x 5/8	1	7171440	
17	Oil Fill Cap	1		12573336

THERMOSTAT

Item#	Description	Qty	GM Part Number
18	Thermostat, 170°	1	10202456

IGNITION MODULE/COIL (2007-2008)


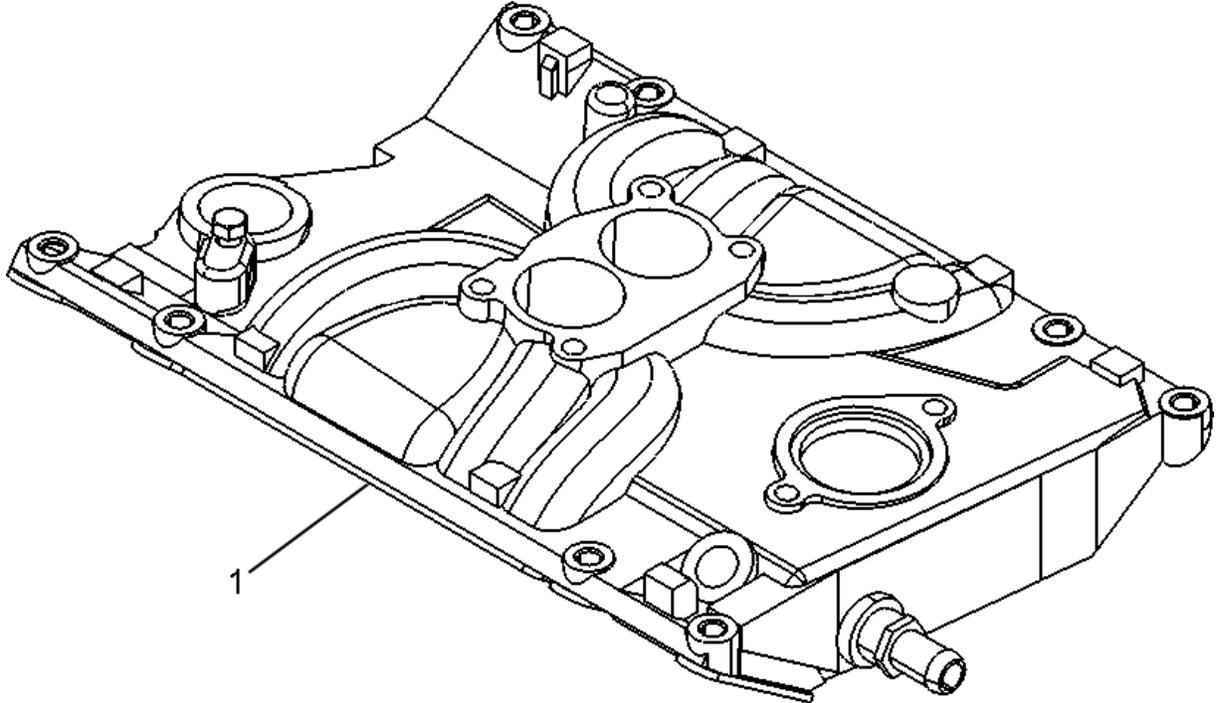
Item#	Description	Qty	Part Number	GM Part Number
1	Ignition Control Module & Coil	1		93804365
2	Bracket, Ignition Coil	1	B4-50092-001	
3	Screw Hex Flange M8-1.25 x 16MM	2	S1-30871-02-0816	
4	Washer, Lock 3/8"	2	93300000	
5	Screw, Hex Head SEMS 3/8"-16 x 3/4"	2	90305250	

4.3L Generic Lift Trucks

Spectrum Series III

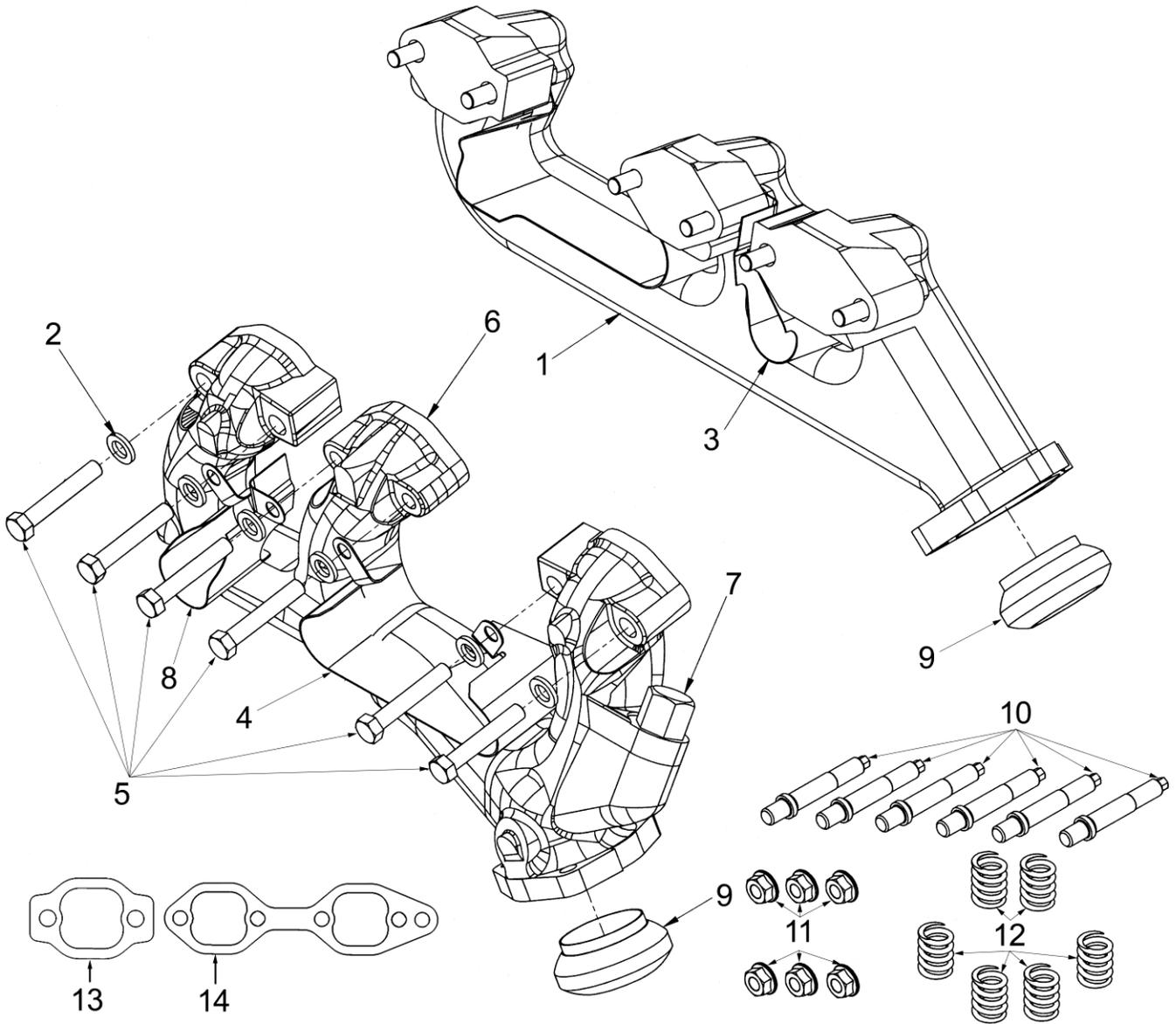


INTAKE MANIFOLD (2007-2008)



Item#	Description	Qty	GM Part Number
1	Intake Manifold	1	12595828

EXHAUST MANIFOLD (2007-2008)



4.3L Generic Lift Trucks

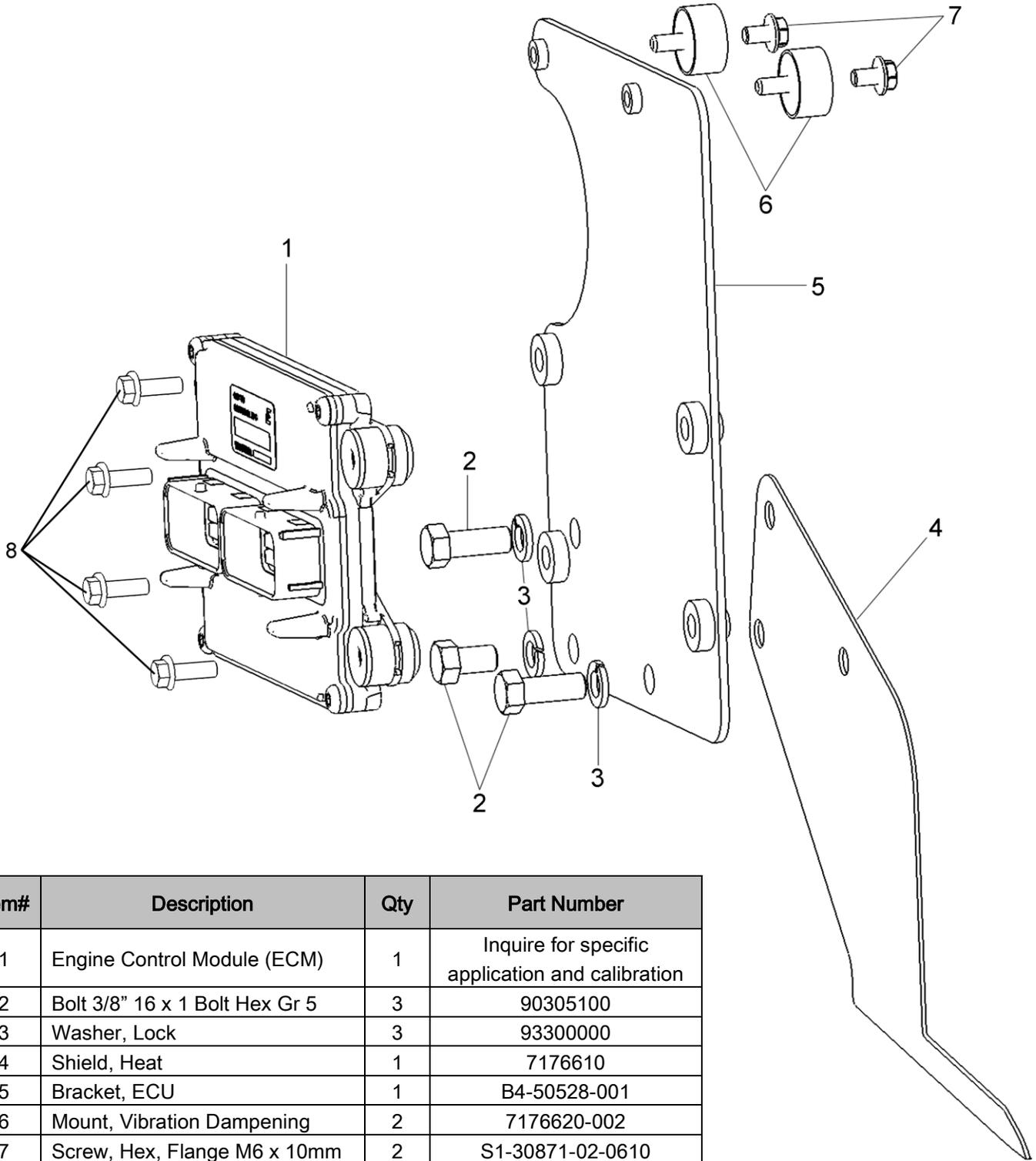
Spectrum Series III



EXHAUST MANIFOLD (2007-2008)

Item #	Description	Qty	Part Number	GM Part Number
1	Exhaust Manifold, RH	1		12550172
2	Washer, Exhaust Manifold	12	W1-50595-037	
3	Shield, Spark Plug Single	1		1015861
4	Shield, Spark Plug Double	2		12551505
5	Bolt, 3/8" 16 x 2 1/4" Hex Gr 5	12	90305225	
6	Exhaust Manifold, LH	1		12552325
7	Cap, Exhaust Manifold	1	7151570	
8	Shield, Spark Plug Single	1	NSS	
9	Gasket, Exhaust Flange 4.3L	2		12555091
10	Stud, Exhaust Manifold	6		15677737
11	Nut, M10 x 1.5	6	7151900	
12	Spring, Exhaust Manifold	6	7151890	
13	Gasket, Exhaust Manifold	2	NSS	
14	Gasket, Exhaust Manifold	2	NSS	

ENGINE CONTROL MODULE (2007-2008)



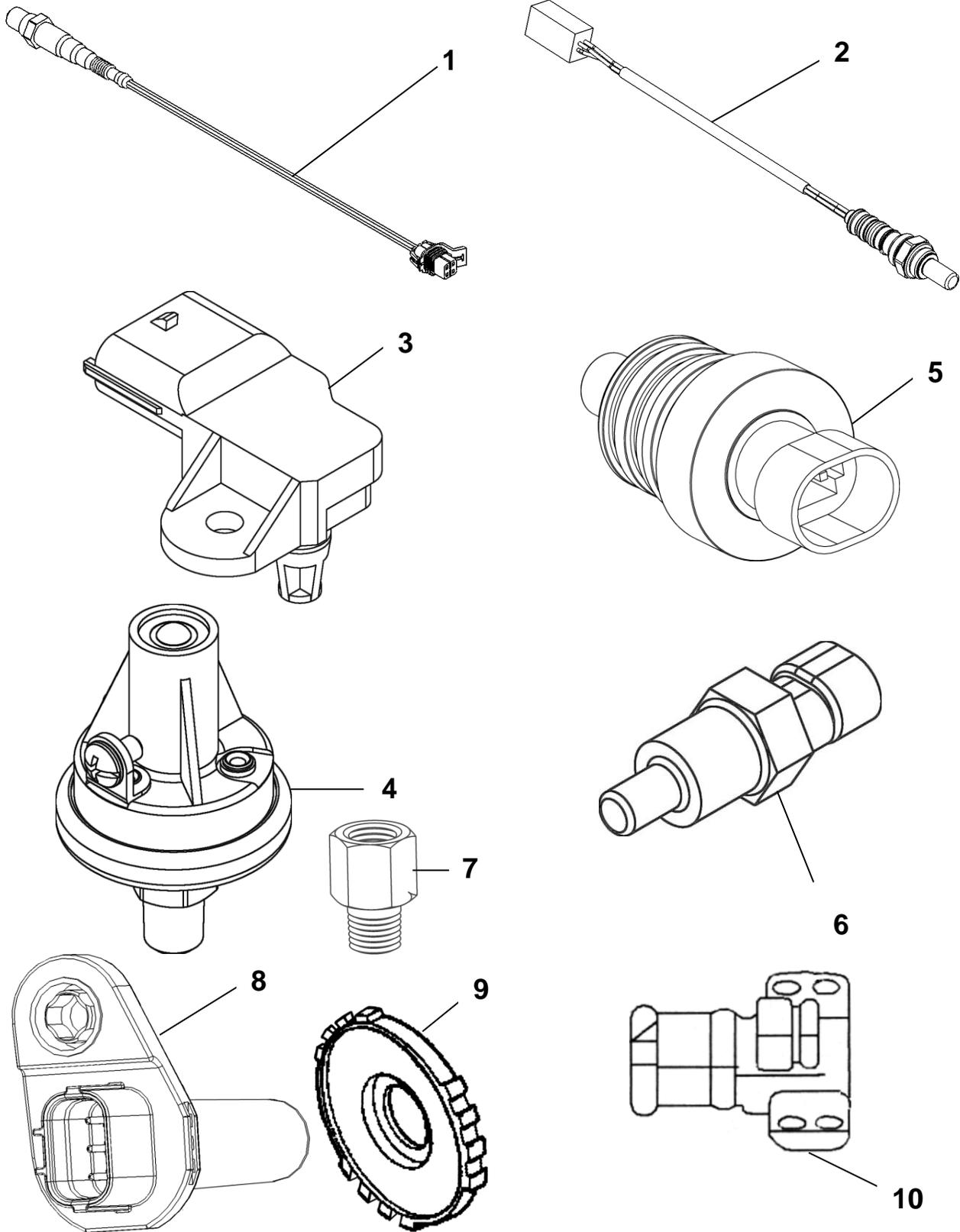
Item#	Description	Qty	Part Number
1	Engine Control Module (ECM)	1	Inquire for specific application and calibration
2	Bolt 3/8" 16 x 1 Bolt Hex Gr 5	3	90305100
3	Washer, Lock	3	93300000
4	Shield, Heat	1	7176610
5	Bracket, ECU	1	B4-50528-001
6	Mount, Vibration Dampening	2	7176620-002
7	Screw, Hex, Flange M6 x 10mm	2	S1-30871-02-0610
8	Bolt, M6-1.0 x 32 M	4	S1-30871-02-0635

4.3L Generic Lift Trucks

Spectrum Series III



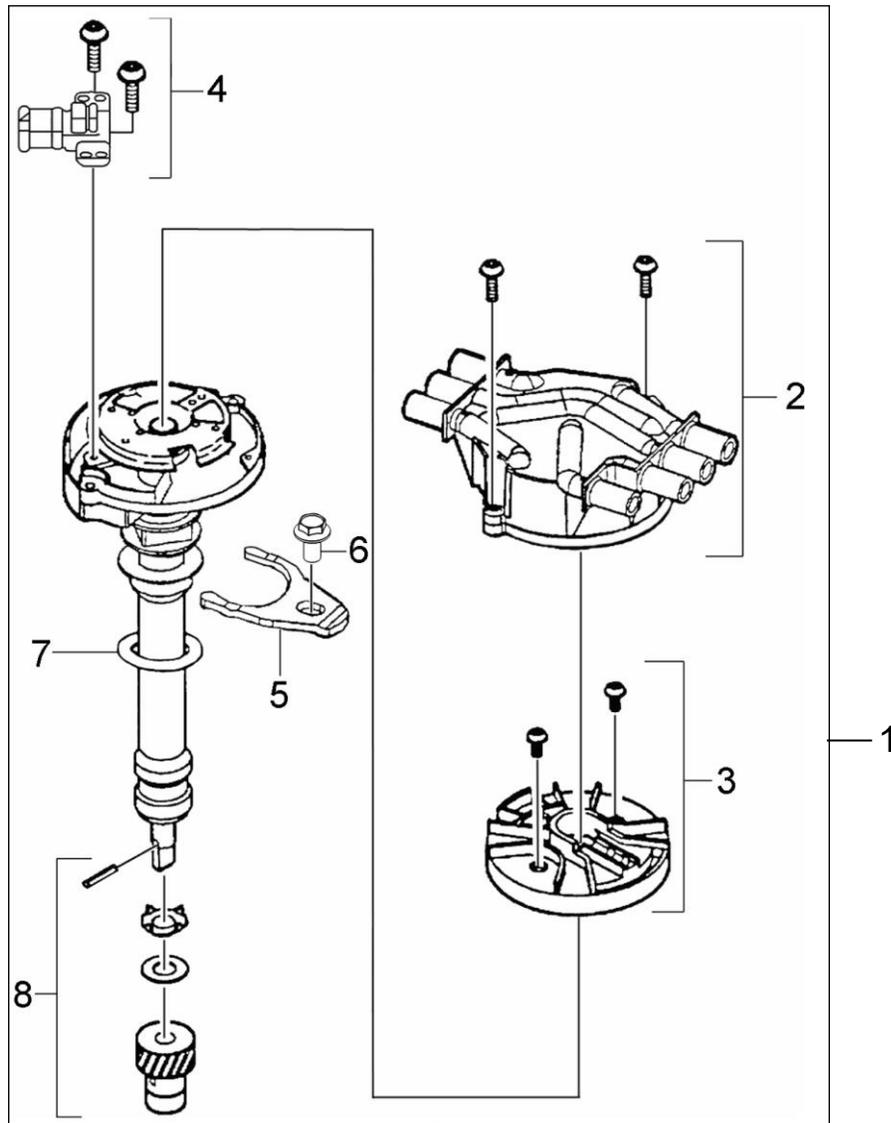
SENSORS (2007-2008)



SENSORS (2007-2008)

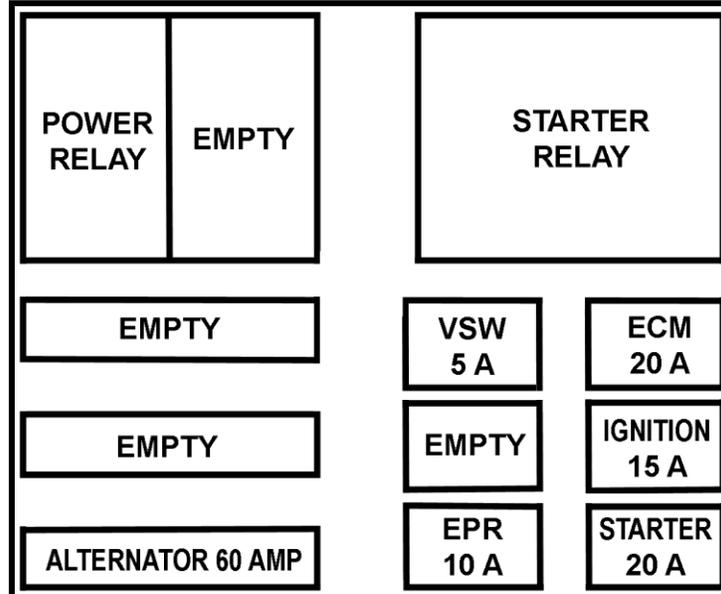
Item#	Description	Qty	Part Number	GM Part Number
1	HEGO, Post Catalyst	1	S8-50234-001	
2	HEGO, Pre-Catalyst	1	7176700	
3	Sensor, TMAP	1	E1466001	
4	Oil Pressure Switch	1	S10-50352-001	
5	LPG Temp Sensor	1	AS8-31353-001	
6	Coolant Temp Sensor	1		15326386
7	Adapter, Oil Sender	1	7242360	
8	Crank Sensor	1		12595966
9	CKP Sensor Reluctor Ring	1		93442981
10	Camshaft Sensor	1		10485432

DISTRIBUTOR (2007-2008)

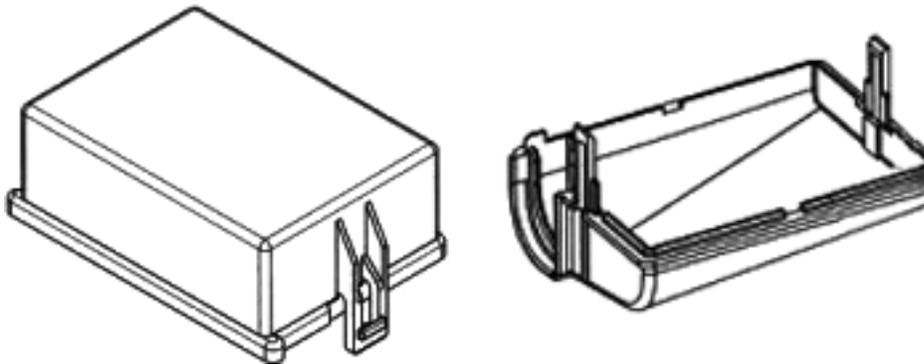


Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Distributor Ass'y (Complete-includes 2-9 below)	1		12598210
2	Cap, Distributor (Includes Screws)	1		10452458
3	Rotor, Distributor (Includes Screws)	1		10452457
4	Camshaft Sensor (Includes Screws for Cam Sensor, Cap and Rotor)	1		10485432
5	Clamp, Distributor	1	7245430	
6	Distributor Hold-down Bolt	1	S1-30871-01-0825	
7	Gasket, Distributor	1		10108445
8	Gear, Distributor Kit	1		10457356

WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)



Fuse Box Layout



Fuse Box Covers

4.3L Generic Lift Trucks

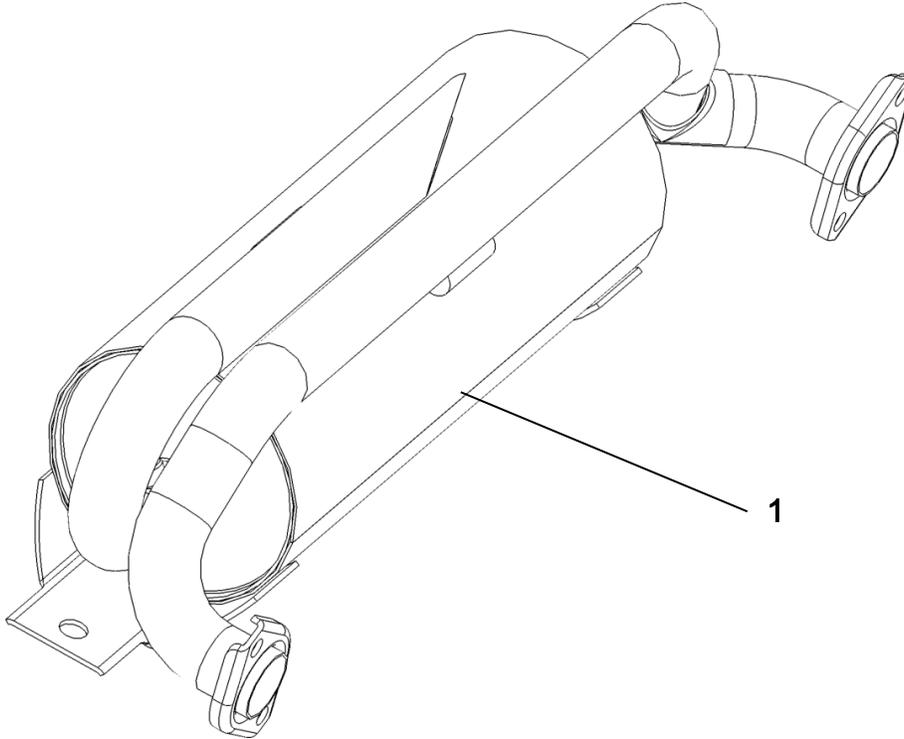
Spectrum Series III



WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)

Item #	Description	Qty	Part Number	Manuf. P/N
1 (Not Shown)	Main Wire Harness	1	E1707101	
Power Relay	Power Relay	1	885014	1043897
Starter Relay	Starter Relay	1	792185	792185
Alternator 60A Fuse	60A Maxi Fuse	1	938198	938198
VSW 5A Fuse	5A Minifuse	1	7380660	914572
ECM 20A Fuse	20A Minifuse	1	7381270	914592
Ignition 15A Fuse	15A Minifuse	1	7381120	230898
EPR 10A Fuse	10A Minifuse	1	914584	914584
Starter 20A Fuse	20A Minifuse	1	7381270	914592
-	Fuse Box Cover (Top)	1	E-6131	
-	Fuse Box Cover (Bottom)	1	E-6132	

EXHAUST SYSTEM (2007-2008)



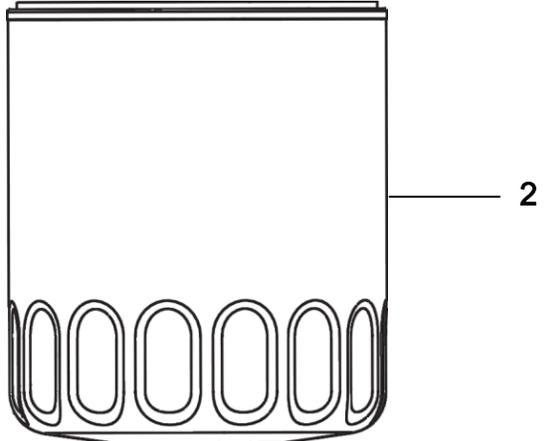
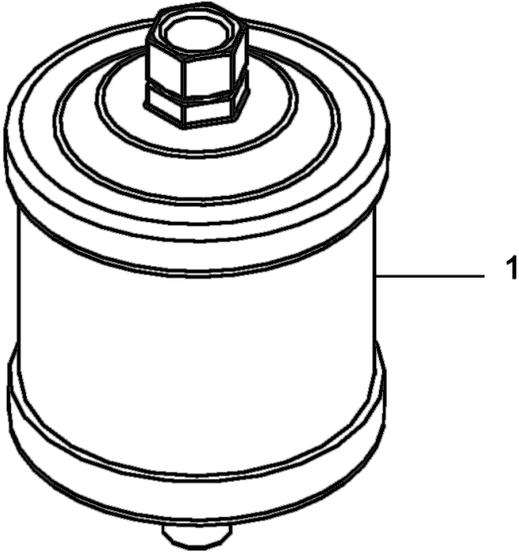
Item #	Description	Qty	Part Number
1	Catalytic Converter	1	C12-50337-001

4.3L Generic Lift Trucks

Spectrum Series III



FILTERS (2007-2008)



Item #	Description	Qty	IMPCO Part Number	GM Part Number
1	Filter, LPG 1/4" NPT x 1/4" NPT	1	F1-30869-001	
2	Filter, Oil PF47			19210284

SERVICE BLOCK (2007-2008)

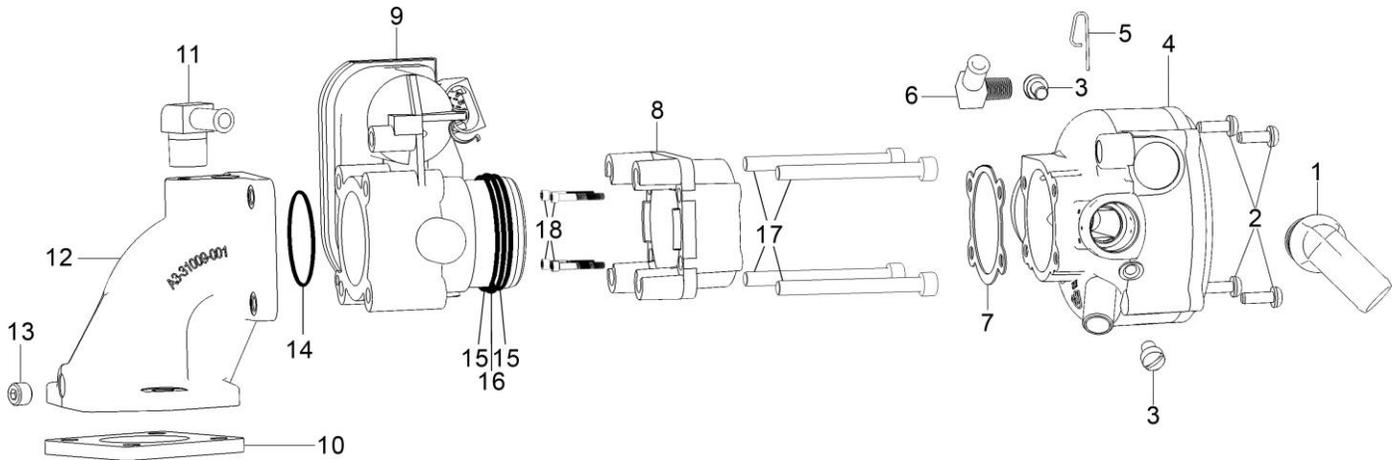


Description	Qty	GM Part Number
2007 Service Block	1	7043321*
2008 Service Block	1	12593055*

*Requires that the distributor, ignition coil and other minor bolt-on parts be transferred from the original engine

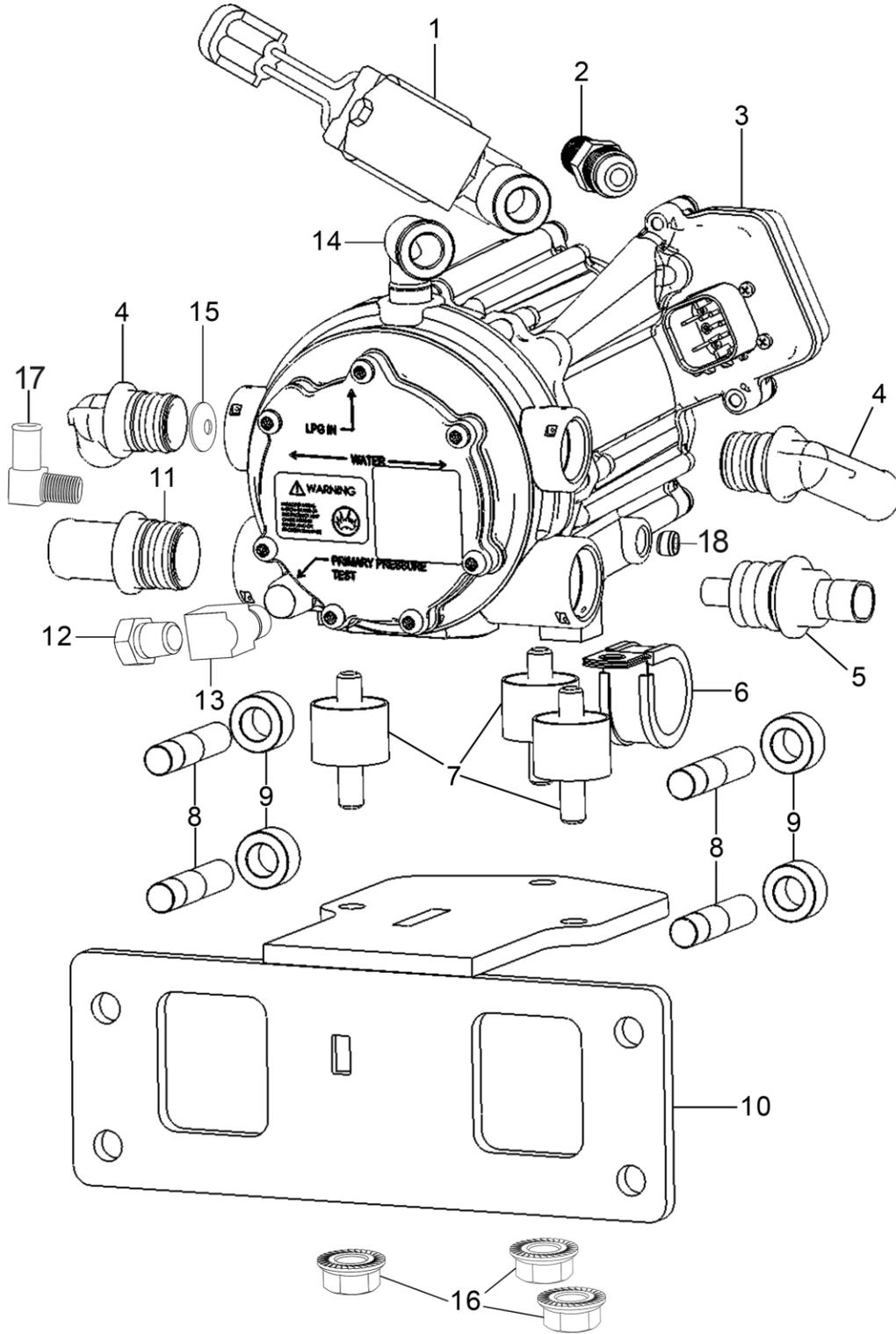
3.0L Generic Lift Trucks

MIXER AND THROTTLE BODY ASSEMBLY (2007-2008)



Item #	Description	Qty	Part Number
1	Fitting, 70 Degree 3/4" OD	1	AF4-31197-001
2	Screw, M5 x 16mm	1	NSS-Tamper Resist
3	Screw, 1/4 x 28x 5/16	2	S1-69
4	Mixer Ass'y, Model 100	1	FT100M-30828-52-003
5	Pin, Retaining	1	P1-30559
6	Fitting, 1/8 NPT 3/8 90 Elbow	1	F4-12
7	Gasket, Throttle Mixer	1	G1-11
8	ADAPTER, BOSCH TBI TO 100 MIXER	1	E1449100
9	Bosch Throttle Body	1	E1312100
10	Gasket, Bosch ETB	1	G1-50449-001
11	Fitting, Throttle Body	1	3H-303B
12	Intake Adapter	1	A3-31009-002
13	Plug, 1/8 NPT 3/16 Hex Brass	1	P3-46
14	O-ring Nitrile	1	S3-1524-003
15	Seal, Quad-ring Bosh ETB	2	S3-50447-001
16	Seal, O-ring Bosch ETB	1	S3-50446-001
17	Screw, Hex Sck Cap M6 X 75 Mm	4	S1-30295-0675
18	Screw, #12-24 X 1 1/2" Gr 5 SHCS	4	S1-50448-001

EPR ASSEMBLY (2007-2008)



3.0L Generic Lift Trucks

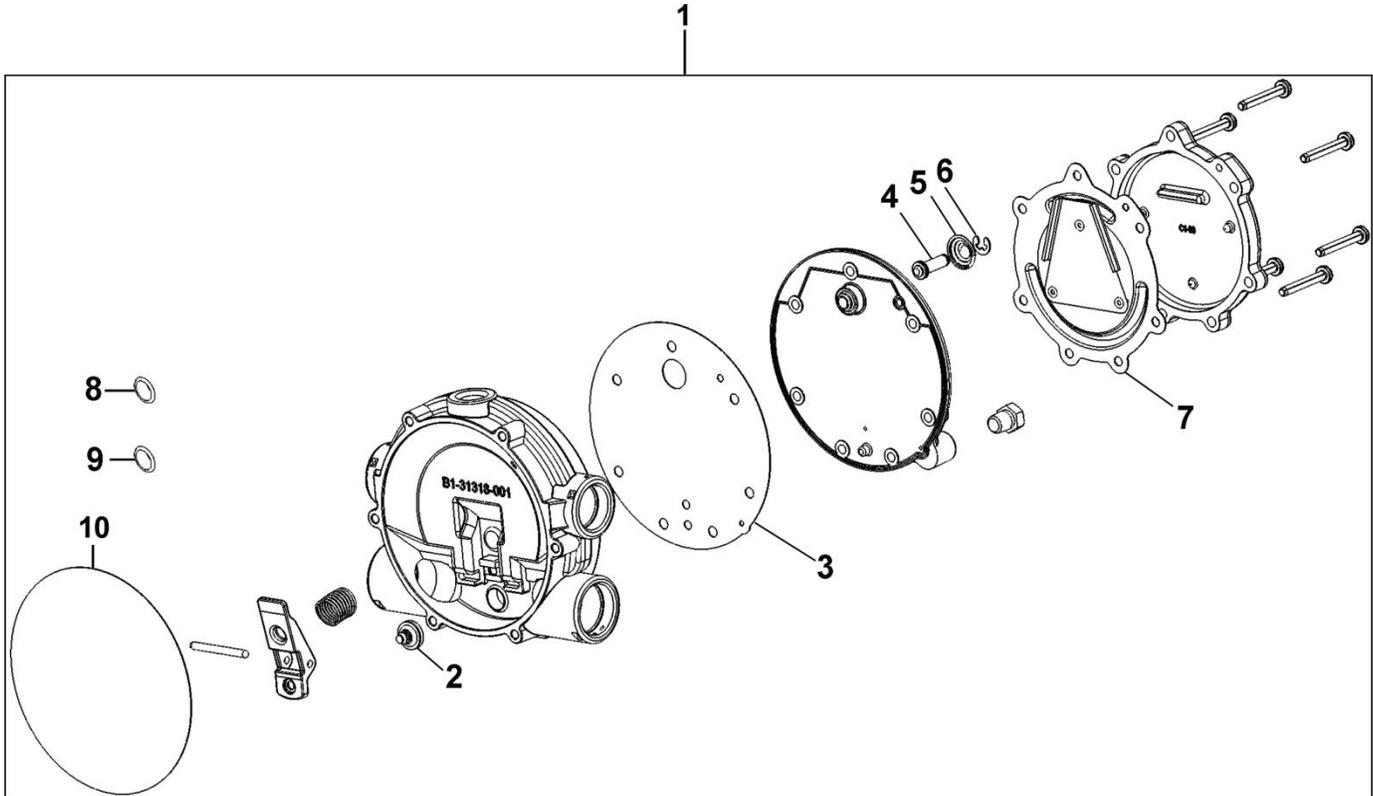
Spectrum Series III



EPR ASSEMBLY (2007-2008)

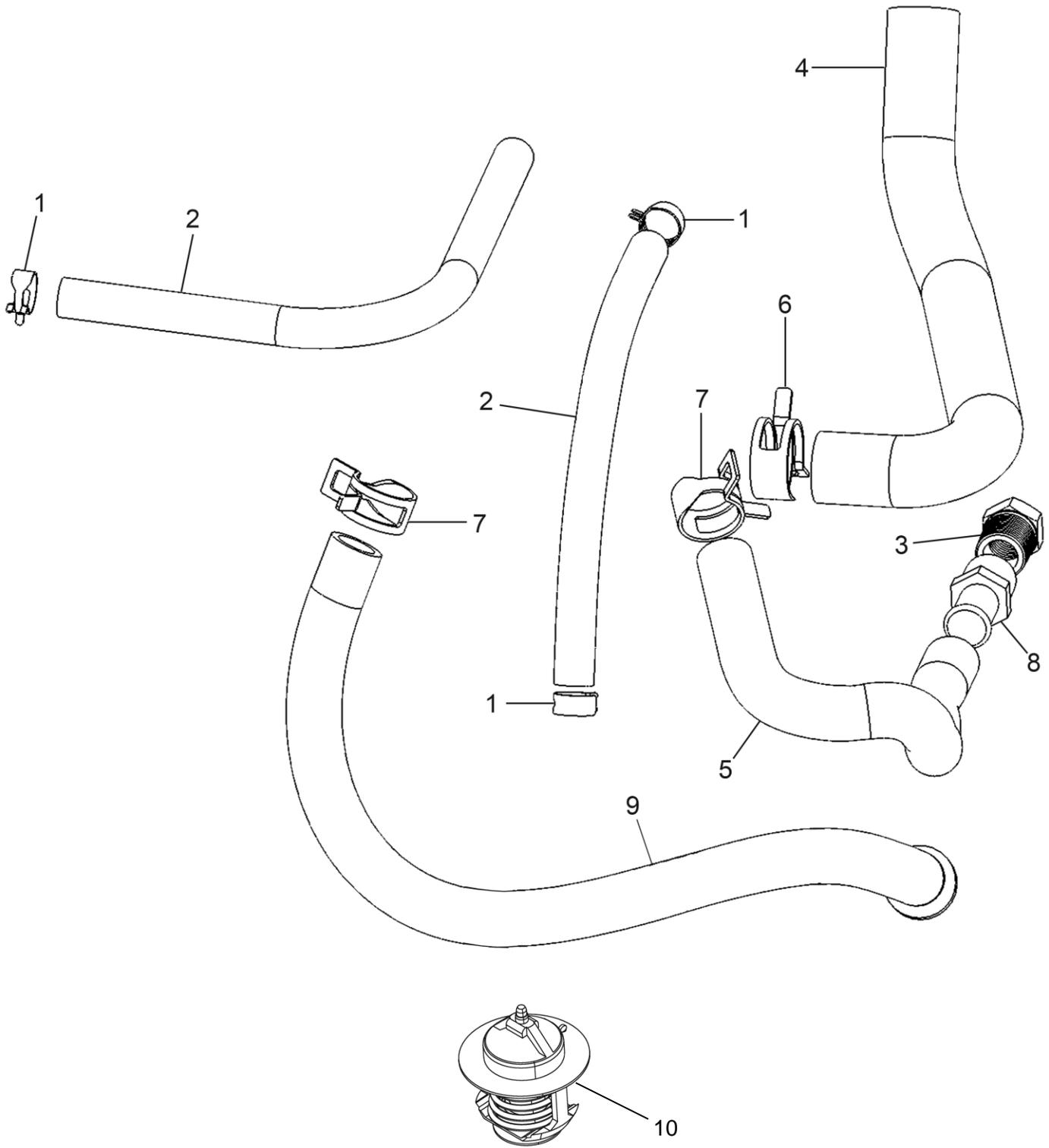
Item #	Description	Qty	Part Number
1	Valve, LPT Shut-Off	1	ET98-30515-001
2	Fitting, ¼ NPT 3/8 Flare Brass	2	F4-14220
3	EPR	1	EPR-50388-001
4	Fitting, 70 degree 5/8" hose	2	AF4-30614
5	Temperature Sensor Assembly	See Sensors Page	
6	Clamp, Shielded	1	C2-30880-016
7	Mount, Vibration	3	R5-50080-002
8	Stud 3/8-16x2"Gr5	4	S3-50596-001
9	Spacer	4	7143810
10	Bracket, EPR Mount	1	NSS
11	Fitting, Straight ¾"	1	AF4-31193-001
12	Plug, 1/8" NPT	1	P3-13
13	Elbow, 1/8NPT Street 90El Br	1	7162170
14	Fitting, ¼" NPT Street 90 Brass	1	F4-16238-1
15	Jet, Coolant Restrictor	1	J1-30872-047
16	Nut, Hex Flange, Serrated M8 X 1.25	1	N1-30876-M08
17	Fitting, 1/8 NPT 3/8 90 Elbow	1	F4-12
18	Plug, 1/8" NPT, Socket Head Brass	1	P3-46

EPR REGULATOR REPAIR (2007-2008)



Item#	Description	Qty	Part Number
1	Kit, Minor Repair (Includes items 2-10 only)	1	RK-EPR-3
	Kit, Major (Includes All parts shown in box, assembled)	1	RK-EPR-4
2	Seat, Secondary	1	NSS
3	Gasket, Body Secondary	1	NSS
4	Pin, Primary	1	NSS
5	Spring, Primary	1	NSS
6	Clip, Primary	1	NSS
7	Diaphragm, Primary	1	NSS
8	O-ring	4	NSS
9	O-ring	4	NSS
10	Seal, Clamp Plate, EPR	1	NSS

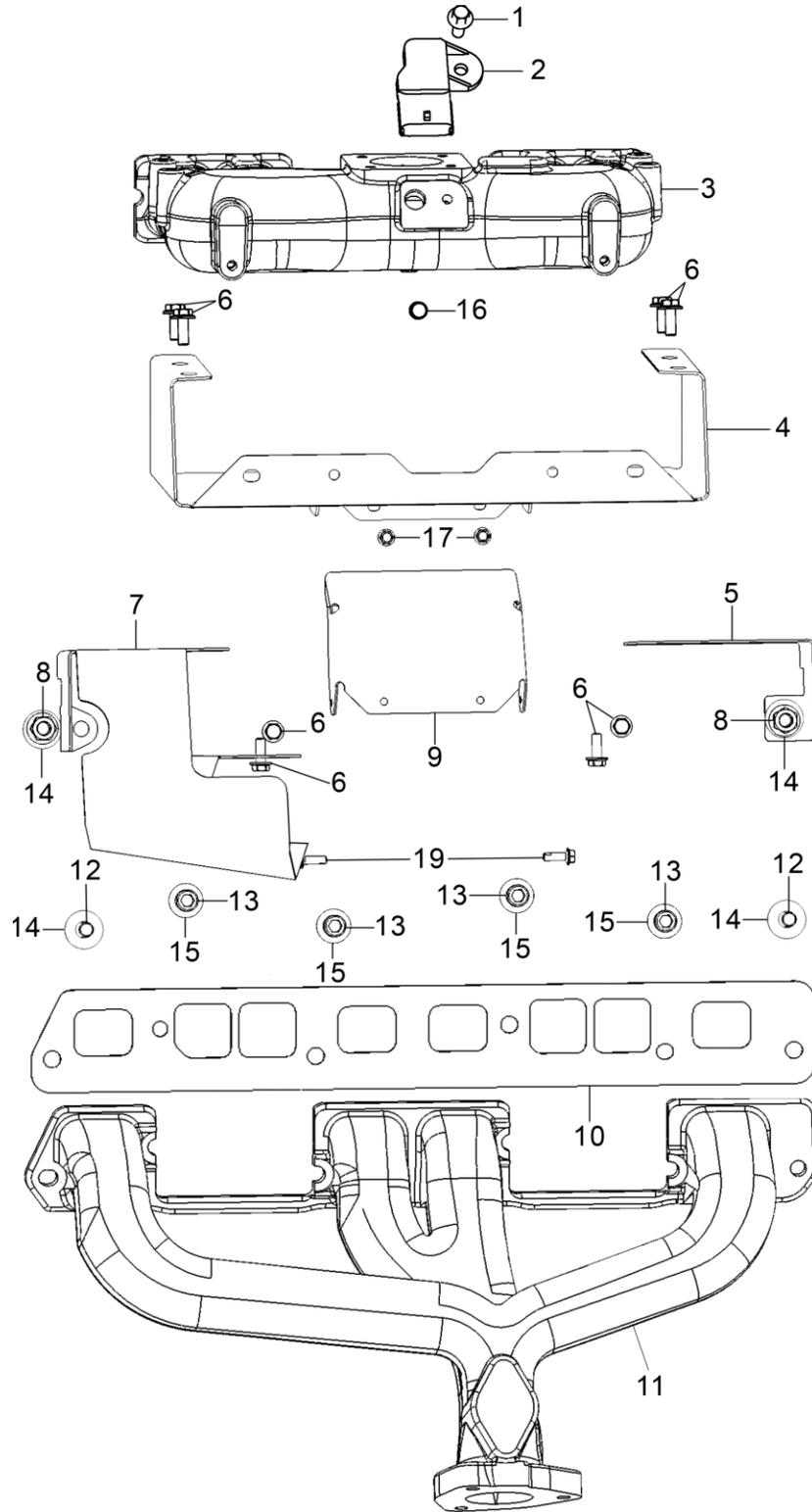
HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (2007-2008)



HOSE ASSEMBLIES COOLANT/VACUUM/FUEL (2007-2008)

Item #	Description	Qty	Part Number	GM Part Number
1	Clamp, Hose, .69 Od, Blk	3	C2-16664-1	
2	Hose, 3/8" Id Fuel/Oil Bulk	2	H1-19231-004	
3	Bush, 1/2-14mx3/8-18f NPT Br	1	7176570-06	
4	Hose, 3/4" Fuel Va, Formed	1	H1-50176-001	
5	Hose, Formed Gate 18770	1	H1-50599-001	
6	Clamp, Hose, 19mm Nominal	1	C2-16664-4	
7	Clamp, Hose, .88 Od, Blk	1	C2-16664-2	
8	Fitting, Barb St 1/2px5/8h Br	1	7171440	
9	Hose, Formed Gate 18770	1	H1-50599-001	
10	Thermostat, 180°	1		10202456

MANIFOLDS (2007-2008)



MANIFOLDS (2007-2008)

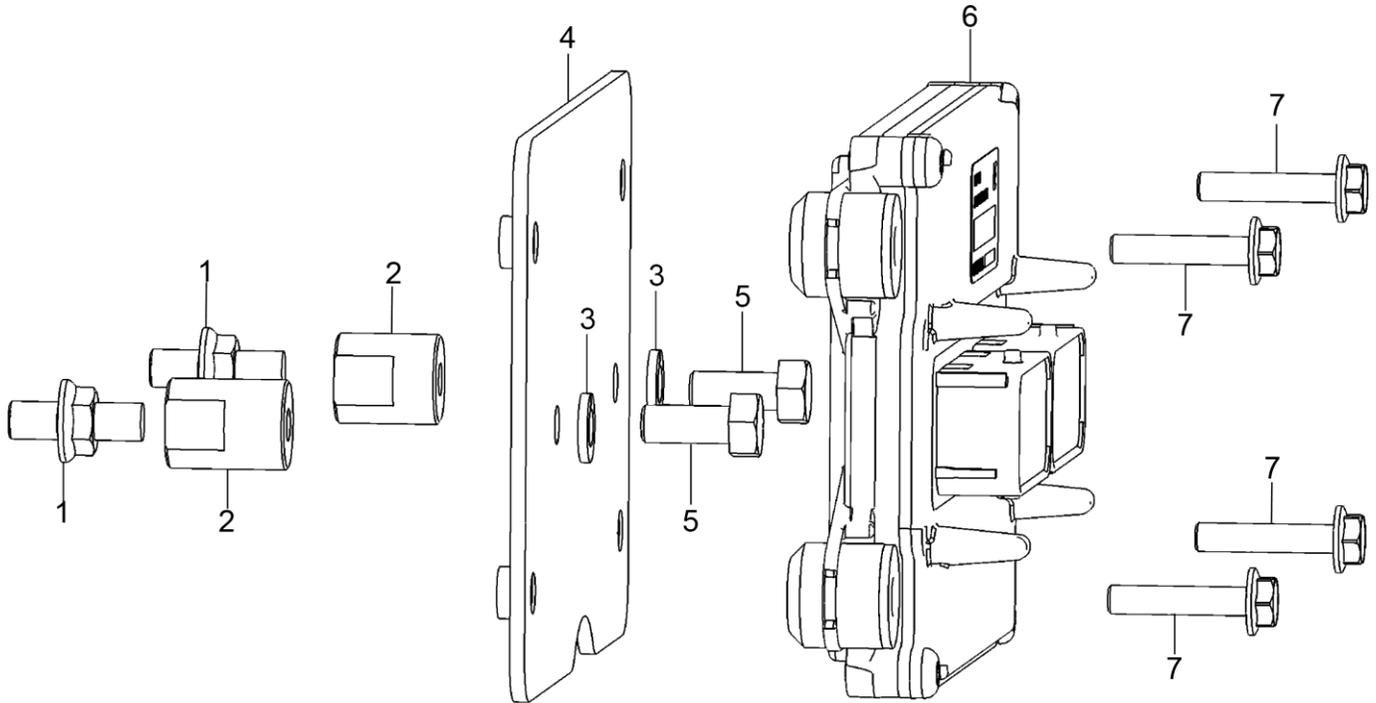
Item #	Description	Qty	Part Number
1	M6 x 1.00 x 15mm Bolt Flange 8.8	1	98227016
2	Bosch TMAP Sensor	1	See Sensor Section
3	Manifold, Intake GM 3.0L RB	1	7152141
4	Shield, Heat GM 3.0L Outer	1	NSS
5	Shield, Heat-Exhaust	1	G4-50067-001
6	Screw, Hex Flange, M6 x 16mm	8	S1-30871-02-0616
7	Shield, Heat Alternator	1	G4-50068-001
8	Nut, Hex Flange, Serrated	2	N1-30876-M10
9	Shield, Heat GM 3.0L Inner	1	NSS
10	Gasket, Int/Exh GM 3.0L	1	7152170
11	Manifold, Exhaust GM .30L	1	7152150
12	Stud, 3/8"-16 x 1 x 5/8" Gr 8	2	71834
13	3/8" - 16 x 1" Bolt Soc Head Gr 8	4	90368100
14	Washer, Flat 3/8" SAE	4	W1-50666-037
15	Washer, Hardened	4	W1-50595-037
16	Plug, 1/8" NPT 3/16" Hex Brass	1	P3-46
17	Screw, Hex FL, Lock M5 x 0.8-48mm	2	S1-50237-21-0548

3.0L Generic Lift Trucks

Spectrum Series III

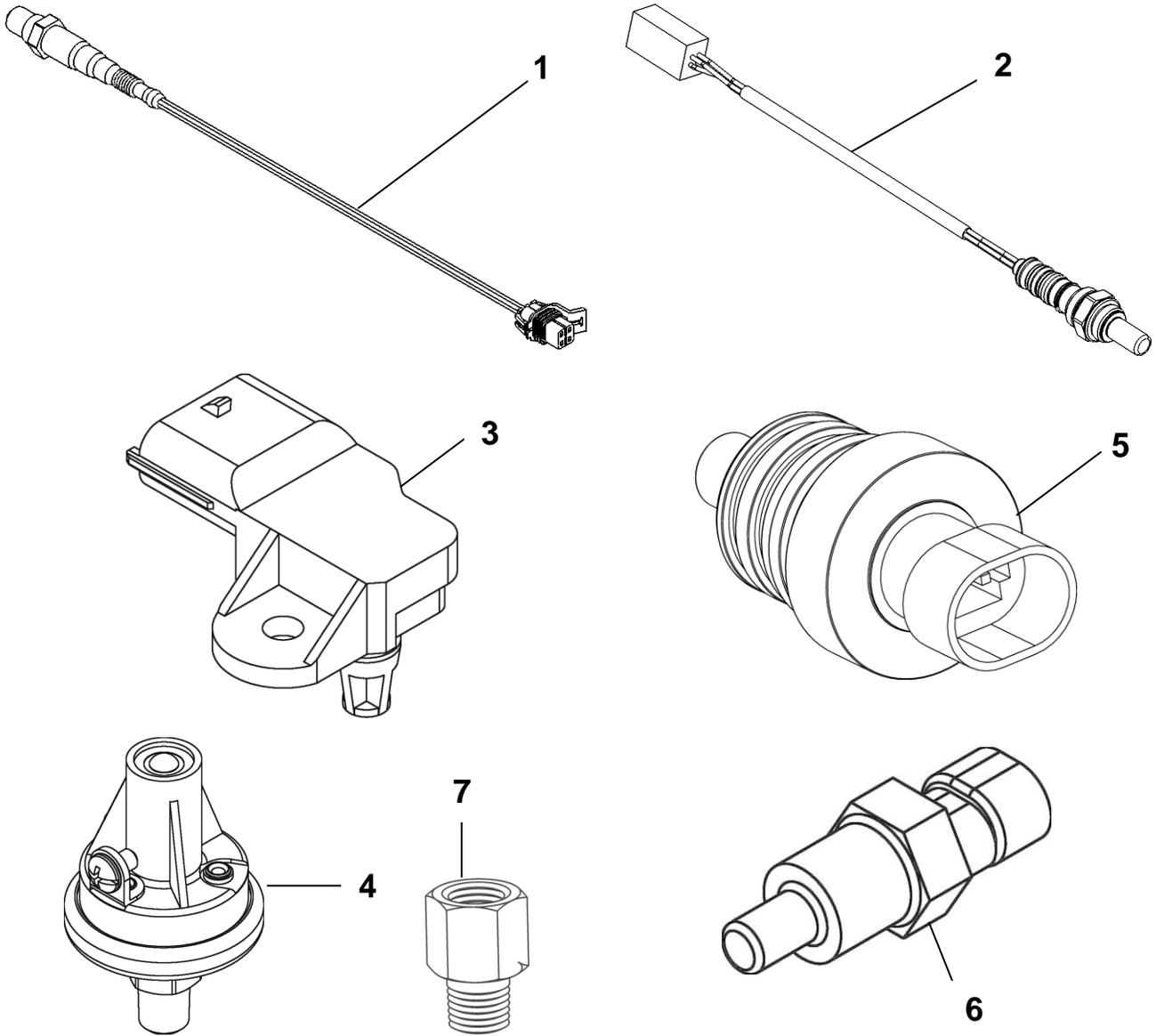


ENGINE CONTROL MODULE (2007-2008)



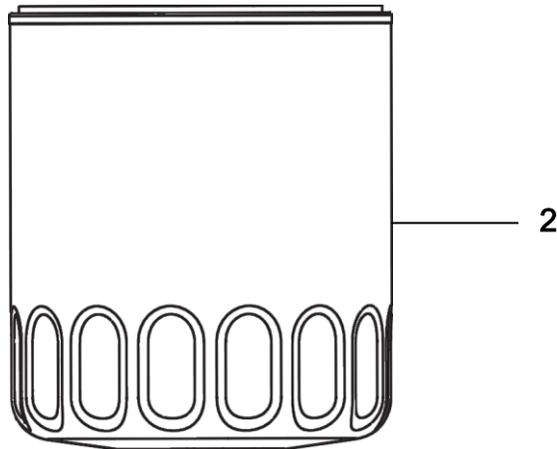
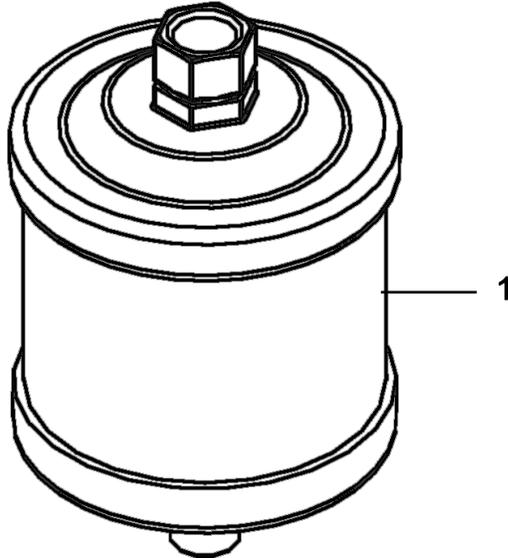
Item #	Description	Qty	Part Number	GM Part Number
1	Stud 5/16-18 x 5/16 24	2		352169
2	Spacer, ECM Mount 1.00	2	S3-50066-001	
3	Washer, Lock, Med 5/16"	2	93200000	
4	Brkt, ECM Mount 3.0L	1	B4-50063-001	
5	5/16-24 x 3/4" Bolt Grade 5	2	90215075	
6	Engine Control Module Blank	1	Inquire for specific application and calibration	
7	Screw, Hex Flange M6 x 1 x 30	4	S1-30871-02-0630	

SENSORS (2007-2008)



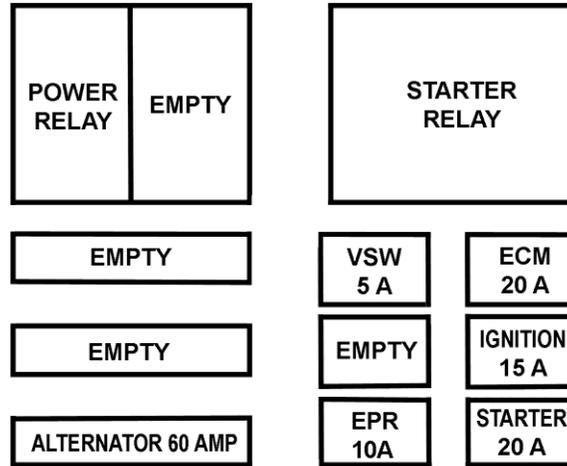
Item #	Description	Qty	Part Number	GM Part Number
1	HEGO 1, Pre-Catalyst	1	7176700	
2	HEGO 2, Post Catalyst	1	S8-50234-001	
3	Sensor, TMAP	1	E1466001	
4	Oil Pressure Switch	1	S10-50352-001	
5	LPG Temp Sensor	1	AS8-31353-001	
6	Coolant Temp Sensor	1		15326386
7	Adapter, Oil Sender	1	7242360	

FUEL FILTERS (2007-2008)

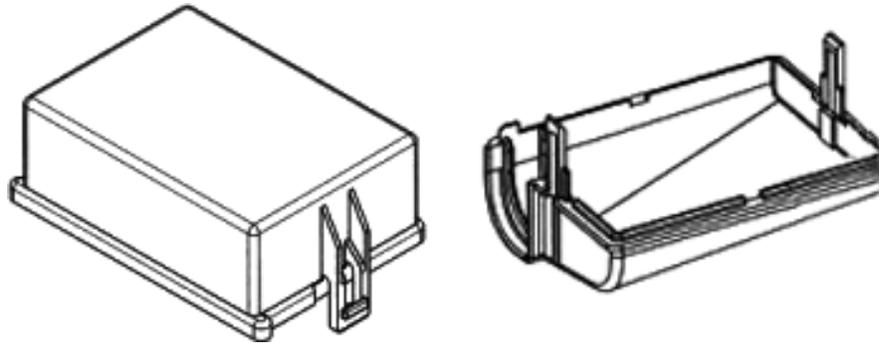


Item #	Description	Qty	Part Number	GM Part Number
1	Fuel Filter, LPG	1	F1-30869-001	
2	Filter, Oil PF-454			25324052

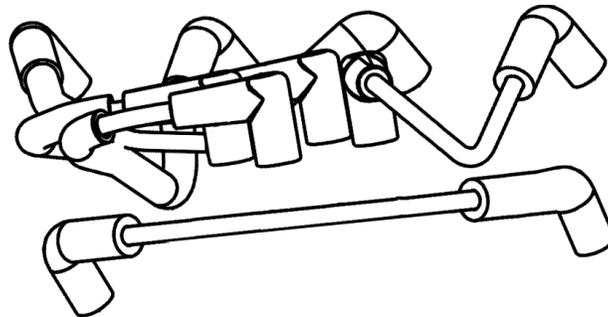
WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)



WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX



FUSE BOX COVERS



SPARK PLUG WIRES

3.0L Generic Lift Trucks

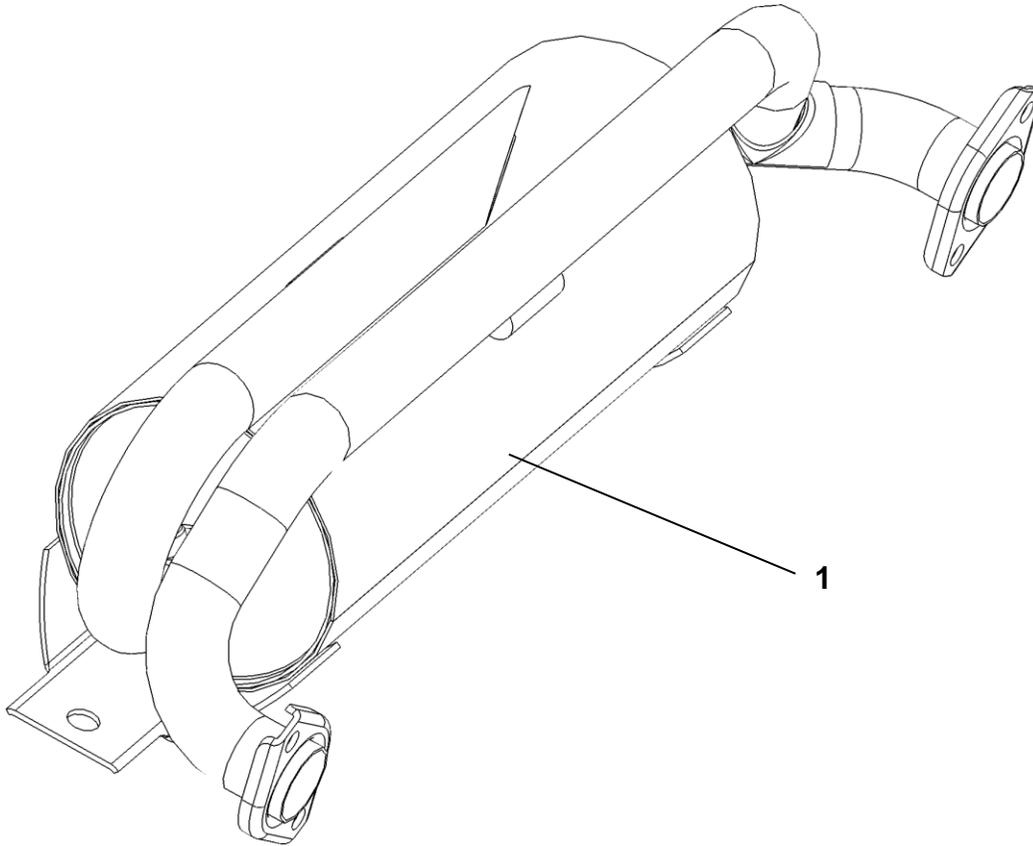
Spectrum Series III



WIRE HARNESSSES/ENGINE ELECTRICAL/FUSE BOX (2007-2008)

Item	Description	Qty	Part Number	Manuf. P/N
Wire Harness (Not Shown)	Wire Harness, Main Engine 3.0L LPG	1	E1739100	
Spark Plug Wires	Set of Four Spark Plug Wires, including the Ignition Coil Wire	1	33000596	
Power Relay	Power Relay	1		885014
Starter Relay	Starter Relay	1		792185
Alternator 60A Fuse	60A Maxi Fuse	1	1054112	Littelfuse 299060
VSW 5A Fuse	5A Minifuse	1	7380660	Littelfuse 297005
EPR 10A Fuse	10A Minifuse	1	914584	Littelfuse 297010
ECM 20A Fuse	20A Minifuse	1	7381270	Littelfuse 297020
Ignition15A Fuse	15A Minifuse	1	7381120	Littelfuse 3660990
Starter 20A Fuse	20A Minifuse	1	7381270	Littelfuse 3660827
-	Fuse Box Cover (Top) w/o Label	1	E-6131	
-	Fuse Box Cover (Bottom)	1	E-6132	

EXHAUST SYSTEM (2007-2008)



Item #	Description	Qty	Part Number
1	Catalytic Converter	1	C12-50307-001
	Catalytic Converter, 4.66" x 6"		C12-50321-001
	Catalytic Converter, 4.66" x 3"		C12-50321-002

Definitions

Air Valve Vacuum (AVV): The vacuum signal taken from below the air valve assembly and above the throttle butterfly valve.

ADP: Adaptive Digital Processor.

Air/Fuel Ratio: The amount or balance of air and fuel in the air/fuel mixture that enters the engine.

Analog Voltmeter: A meter that uses a mechanical needle to point to a value on a scale of numbers. It is usually of the low impedance type and used to measure voltage and resistance.

Aromatics: Pertaining to or containing the six-carbon ring characteristic of the benzene series. Found in many petroleum distillates.

Backfire: Combustion of the air/fuel mixture in the intake or exhaust manifolds. A backfire can occur if the intake or exhaust valves are open when there is a mistimed ignition spark.

Benzene: An aromatic (C_6H_6). Sometimes blended with gasoline to improve anti-knock value. Benzene is toxic and suspected of causing cancer.

Bi-Fueled: A vehicle equipped to run on two fuels.

Blow-By: Gases formed by the combustion of fuel and air, which ordinarily should exert pressure only against the piston crown and first compression ring. When rings do not seal, these gases escape or "blow by" the side of the piston into the crankcase.

BTU: British Thermal Unit. A measurement of the amount of heat required to raise the temperature of 1lb. of water 1 degree F.

Butane: An odorless, colorless gas, C_4H_{10} found in Natural Gas and petroleum. One of the five LP gases.

CAFE: Corporate Average Fuel Economy.

CARB: California Air Resources Board.

Carbon Monoxide (CO): A chemical compound of a highly toxic gas that is both odorless and colorless.

Carburetor: An apparatus for supplying an internal-combustion engine a mixture of vaporized fuel and air. In this catalog, a "carburetor" includes both a mixer and throttle body.

Cathode Ray Tube: A vacuum tube in which cathode rays usually in the form of a slender beam are projected on a fluorescent screen and produce a luminous spot.

Circuit: A path of conductors through which electricity flows.

Closed Loop Operation: Applies to systems utilizing an oxygen sensor. In this mode of operation, the system uses oxygen sensor information to determine air/fuel ratio. Adjustments are made accordingly and checked by comparing the new oxygen sensor to previous signals. No stored information is used.

CNG: Compressed Natural Gas.

CKP: Crankshaft Position Sensor

CMP: Camshaft Position Sensor

CNG: Compressed Natural Gas

Conductor: A material, normally metallic, that permits easy passage of electricity.

Contaminants: Impurities or foreign material present in fuel.

Control Module: One of several informal names for a solid state microcomputer which monitors engine conditions and controls certain engine functions; i.e. air/fuel ratio, injection and ignition time, etc. The formal name and the one used throughout this manual is ECM, or Engine Control Module.

Converter: A LPG fuel system component containing varying stages of fuel pressure regulation combined with a vaporizer.

Cryogen: A refrigerant used to obtain very low temperatures.

Current: The volume or flow of electrons through a conductor. Measured in amperes or amps.

DBW: Drive By Wire

Dedicated Fuel System: A motor fuel system designed to operate on only one fuel type.

DG: Digester Gas

Diaphragm: A thin, flexible membrane that separates two chambers. When the pressure in one chamber is lower than in the other chamber, the diaphragm will move toward the side with the low pressure.

Diaphragm Port: The external port located at the fuel inlet assembly and connected to the vacuum chamber above the air valve diaphragm.

DLC: Data Link Connector.

DTC: Diagnostic Trouble Code

DST: Diagnostic Scan Tool

Definitions



DVOM: Digital Volt/ohm Meter. A meter that uses a numerical display in place of a gauge and is usually of the high impedance type.

ECT: Engine Coolant Temperature.

ECM: Electronic Control Module

ECOM: A DLC cable supporting CAN and serial communication with a Spectrum II or III ECM.

EFI: Electronic Fuel Injection. A fuel injection system, which uses a microcomputer (ECM) to determine and control the amount of fuel, required by, and injected into, a particular engine.

EGO: Exhaust Gas Oxygen, used to describe a sensor. Also known as "HEGO" (Heat Exhaust Gas Oxygen) sensor, "O₂" or "Oxygen sensor."

EGR: Exhaust Gas Recirculation.

EPA: Environmental Protection Agency: A regulating agency of the Federal government which, among other duties, establishes and enforces automotive emissions standards.

Ethanol: Grain alcohol (C₂H₅OH), generally produced by fermenting starch or sugar.

Evaporative Emissions Controls: An automotive emission control system designed to reduce hydrocarbon emissions by trapping evaporated fuel vapors from the fuel system.

Excess Flow Valve: A check valve that is caused to close by the fuel when the flow exceeds a predetermined rate.

FTV: Fuel Trim Valve.

FFV: Flexible Fuel Vehicle.

Firing Line: The portion of an oscilloscope pattern that represents the total amount of voltage being expended through the secondary circuit.

FMVSS: Federal Motor Vehicle Safety Standards.

FPP: Foot Pedal Position Sensor

Fuel Injector: a spring loaded, electromagnetic valve which delivers fuel into the intake manifold, in response to an electrical input from the control module.

Fuel Lock: A solenoid-controlled valve located in the fuel line to stop the flow when the engine stops or the ignition switch is off.

Gasohol: 10 percent ethanol, 90 percent gasoline. Often referred to as E-10.

Gasoline: A motor vehicle fuel that is a complex blend of hydrocarbons and additives. Typical octane level is 89.

GCP: Spectrum III (90-pin) ECM.

Greenhouse Effect: A scientific theory suggesting that carbon dioxide from the burning of fossil fuels is causing the atmosphere to trap heat and cause global warming.

HC: Hydrocarbon. An organic chemical compound.

HD 10: A fuel of not less than 80% liquid volume propane and not more than 10% liquid volume propylene.

HD 5: A fuel of not less than 90% liquid volume propane and not more than 5% liquid volume propylene.

HDV: Heavy Duty Vehicle.

Heavy Ends: A term used to describe the buildup of wax-like impurities that fall out of LPG when vaporized.

HEGO: Heated Exhaust Gas Oxygen, used to describe a sensor. Also known as "EGO" (Exhaust Gas Oxygen sensor), "O₂" or "Oxygen sensor."

Hg: Chemical symbol for the element mercury. Used in reference to a measure of vacuum (inches of Hg).

Histogram: The graphical version of a table which shows what proportion of values fall into specific categories over a specific period of time.

Hydrocarbon: A chemical compound made up of hydrogen and carbon (HC). Gasoline and almost all other fuels are hydrocarbons.

Hydrostatic Relief Valve: A pressure relief device installed in the liquid LPG hose on a LPG fuel system.

IAT: Intake Air Temperature

Ideal Mixture: The air/fuel ratio at which the best compromise of engine performance to exhaust emissions is obtained. Typically 14.7:1.

Ignition Reserve: The difference between available voltage and the required voltage.

ILEV: Inherently Low Emission Vehicle.

IMPCO: Imperial Machine Products Company.

Impedance: A form of opposition of AC electrical current flow (resistance) measured in ohms.

Insulation: A nonconductive material used to cover wires in electrical circuits to prevent the leakage of electricity and to protect the wire from corrosion.

Intercept: An electrical term for a type of splice where the original circuit is interrupted and redirected through another circuit.

ITK: IMPCO Test Kit

Knock: Sound produced when an engine's air/fuel mixture is ignited by something other than the spark plug, such as a hot spot in the combustion chamber. May be caused by a fuel with an octane rating that is too low and/or incorrect ignition timing. Also called "detonation" or "ping."

Lambda Sensor: A feedback device, usually located in the exhaust manifold, which detects the amount of oxygen present in exhaust gases in relation to the surrounding atmosphere. (See HEGO).

LDV: Light Duty Vehicle.

Lean Mixture: An air to fuel ratio above the stoichiometric ratio; too much air.

LEV: Low Emission Vehicle.

Limp-in or Limp Home: A mode where the ECM or a component has failed, but the vehicle remains operational although the engine may operate minimally. This term may also describe the drivability characteristics of a failed computer system.

Liquid Petroleum Gas (LPG): A fuel commonly known as propane consisting mostly of propane (C_3H_8), derived from the liquid components of Natural Gas stripped out before the gas enters the pipeline, and the lightest hydrocarbons produced during petroleum refining. Octane level of LPG is 107.

LPG: Liquefied Petroleum Gas.

M85: A blend of gasoline and methanol consisting of 85% methanol and 15% gasoline.

Measurements of Pressure: 1 psi=2.06" Hg (mercury) = 27.72" H_2O (water column). At sea level atmospheric pressure is 29.92" Hg.

Methanol: Known as wood alcohol (CH_3OH), a light, volatile, flammable alcohol commonly made from Natural Gas.

MIL: Malfunction Indicator Lamp.

Misfire: Failure of the air/fuel mixture to ignite during the power stroke.

Mixer: Fuel introduction device that does not include a throttle plate.

MFI: Multiport Fuel Injection. A fuel injection system that uses one injector per cylinder mounted on the engine to spray fuel near the intake valve area of combustion chamber.

MSV: Manual Shut-Off Valve. Refers to the manually operated valve on the LPG tank.

MTBE: Methyl Tertiary Butyl Ether. Oxygenate add to gasoline to reduce harmful emissions and to improve the octane rating.

Multi-fuel System: A motor fuel system designed to operate on two different fuels, such as LPG and gasoline.

NG: Natural Gas (see Natural Gas)

Natural Gas: A gas formed naturally from buried organic material, composed of a mixture of hydrocarbons, with methane (CH_4) being the dominant component.

NGV: Natural Gas Vehicle.

NOX: See Oxides of Nitrogen.

OBD: On Board Diagnostic

Octane Rating: The measurement of the antiknock value of a motor fuel.

OEM: Original Equipment Manufacturer, the vehicle manufacturer.

Open-Loop: An operational mode during which control module memory information is used to determine air/fuel ratio, injection timing, etc., as opposed to actual oxygen sensor input.

Orifice: A port or passage with a calibrated opening designed to control or limit the amount of flow through it.

Oscilloscope: An instrument that converts voltage and frequency readings into traces on a cathode ray tube (also see Cathode Ray Tube).

Oxides of Nitrogen: Chemical compounds of nitrogen bonded to various amounts of oxygen (NOX). A chief smog forming-agent.

Oxygen Sensor: An automotive fuel system that produces a signal in accordance with the oxygen content of the exhaust gas. (See Lambda Sensor).

Oxygenate: Oxygenates (such as MTBE, ethanol and methanol) added to gasoline to increase the oxygen content and therefore reduce exhaust emissions.

Definitions



Ozone: A radical oxygen molecule (O_3) that is found in the upper atmosphere and filters out ultraviolet radiation from the sun. Ground level ozone is formed by NOX, during the formation of photochemical smog.

Particulates: Microscopic pieces of solid or liquid substances such as lead and carbon that are discharged into the atmosphere by internal combustion engines.

Positive Crankcase Ventilation (PCV): An automotive emission control system designed to reduce hydrocarbon emissions by routing crankcase fumes into the intake manifold rather than to the atmosphere.

Power Derate: A mode of reduced engine power output for the purposes of protecting engine components during a failure or malfunction.

Pressure Differential: The differential between atmospheric pressure and intake manifold (referred to as vacuum) pressure.

Pressure Regulator: A device to control the pressure of fuel delivered to the fuel injector(s).

Primary Circuit: The low-voltage or input side of the ignition coil.

Propane: An odorless and colorless gas, C_3H_8 , found in Natural Gas and petroleum.

psia: pounds per square inch absolute.

PTV: Pressure Trim Valve

Reactivity: Refers to the tendency of an HC in the presence of NOX and sunlight to cause a smog-forming reaction. The lighter the HC, the lower reactivity tends to be.

Regulator: An assembly used to reduce and control the pressure of a liquid or vapor.

Resistance: The opposition to the flow of current in an electrical circuit. Measured in ohms.

Rest Pressure: Fuel pressure maintained within the system after engine shutdown.

Rich Mixture: An air to fuel ratio below the stoichiometric ratio; too much fuel.

SAE: Society of Automotive Engineers.

Secondary Circuit: The high-voltage output side of the ignition coil.

SEFI or SFI: Sequential Electronic Fuel Injection or Sequential Fuel Injection.

Sensors: Devices that provide the control module with engine information as needed to properly control engine function.

Spark Line: The portion of an oscilloscope pattern that represents the time during which the air/fuel mixture is being burned in the combustion chamber.

Splice: An electrical term for the joining of two or more conductors at a single point.

Stoichiometric Ratio: An ideal fuel/air ratio for combustion in which all of the fuel and most of the oxygen will be burned.

Sulfur Oxides: Chemical compounds where sulfur is bonded to oxygen produced by the combustion of gasoline or any other fuel that contains sulfur. As sulfur oxides combine with water in the atmosphere to form sulfuric acid.

System Pressure: The fuel pressure maintained in the system during normal engine operation.

Tap: An electrical term for a type of splice where the original circuit is not interrupted.

TBI: Throttle Body Injection. Any of several injection systems that have the fuel injector(s) mounted in a centrally located throttle body.

Throttle Body: Controls engine RPM by adjusting the engine manifold vacuum to the mixer. Consists of a housing shaft, throttle liner and butterfly valve.

TLEV: Transitional Low Emission Vehicle.

TMAP: Combined Air Inlet and Manifold Pressure Sensor.

Toluene: A liquid aromatic hydrocarbon C_7H_8 .

TPS: Throttle Position Sensor.

TSB: Technical Service Bulletin.

ULEV: Ultra Low Emission Vehicle.

USB: Universal Serial Bus. A plug or interface supplied on most personal computers.

Vaporizer: A device that transfers heat to liquid LPG, causing it to vaporize into LPG vapor. Many IMPCO regulators perform this function and are often referred to as converters.

Vaporization: A process in which liquid changes states into gas.

Venturi Air Valve Vacuum (VAVV): An amplified air valve vacuum signal coming from the venturi area of the mixer, directly exposed to airflow before the addition of vaporized LPG.

Volt/ohmmeter (VOM): A combination meter used to measure voltage and resistance in an electrical circuit. Available in both analog and digital types. May also referred to as AVOM and DVOM.

Voltage: The electrical pressure that causes current to flow in a circuit. Measured in volts.

Voltage Drop: A lowering of the voltage in a circuit when resistance or electrical load is added.

VSS: Vehicle Speed Sensor

w.c.: Water Column. A unit of pressure (measured in inches)

Xylene: $C_6H_4(CH_3)_2$. Any of three toxic, flammable, and oily isomeric aromatic hydrocarbons that are dimethyl homologues of benzene and usually obtained from petroleum or Natural Gas distillates.

ZEV: Zero Emission Vehicle.