Fuel System Operation & Maintenance Manual (Principal Manual)

Models LVC-3-3A, LVC-3-3PA, LVC-5-4PA, LVC-5-5BPA, LVC-5-5PA, LHC-6-6BA and LHC-6-6BPA Carburetors

September 25, 2023

Part No. AFS-IOM-01

Fuel System Operation & Maintenance Manual

AVStar Part Number: AFS-IOM-01

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RECORD OF REVISIONS

Revision	Revision Date	Revised By	Revision Description
Original	9/25/2023	CES	Original Release of Manual - Part No. AFS-IOM-01

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SERVICE DOCUMENT LIST

NOTICE: The following is a list of service documents referenced in, incorporated into, or applicable to the information in this manual. Always refer to the latest revision of any service document (including any supplements) for changes or additional information.

Document Number	Subject
AVStar AFS-IOM-01	Fuel System Operation & Maintenance Manual (Principal Manual)
AVStar AFS-IPC-01	LVC-3-3 & LVC-5-4 Illustrated Parts Catalog
AVStar AFS-IPC-02	LVC-5-5 Illustrated Parts Catalog
AVStar AFS-IPC-03	LHC-6-6 Illustrated Parts Catalog
AVStar FSM LVC-S	LVC-3-3 & LVC-5-4 Overhaul Manual
AVStar FSM LVC-5-5	LVC-5-5 Overhaul Manual
AVStar FSM LHC-6-6	LHC-6-6 Overhaul Manual
AVStar AFS-SB7	Overhaul Periods for AVStar Carburetors
AVStar AFS-SB8	Carburetor Throttle Body to Bowl Retaining Screw Inspection
AVStar AFS-SB14	New Fuel Nozzle for Guimbal Helicopters
AVStar AFS-SB15	LVC-5-5PA & LVC-5-5BPA AVStar Carburetors Manufactured in 2011
Lycoming S.B. 398	Fuel, Recommendations Regarding Use of Incorrect
Lycoming S.I 1070	Specified Fuels for Spark Ignited Gasoline Aircraft Engine Models
Lycoming S.I 1080	Maintenance Items for Special Attention
Lycoming S.I. 1002	Air Filters, Carburetor, Proper Maintenance
Lycoming S.I. 1009	Overhaul, Recommended Time Between (TBO)
Lycoming S.I. 1132	Magneto Drop-Off
Lycoming S.I. 1148	Carburetor Heat Control, Use of
Lycoming S.I. 1301	Primer and Fuel Injector Lines, Identification
Lycoming S.I. 1427	Engine Break-In and Oil Consumption Test Limits
Lycoming S.I. 1484	Carburetor or Fuel Injector Servo Unit Hold Down Nuts, Installation Torque for Fuel Metering Device
Lycoming S.I. 1523	Carburetor Manufacturer's Cross Referenced
Lycoming S.I. 1530	Engine Inspection in Particulate-Laden Environments
Lycoming S.L. L114	Engine and Accessory Maintenance Publications
Lycoming S.L. L247	Shelf Life Requirements
Lycoming S.L. L253	Warranty repair of AVStar Fuel System
Lycoming SSP-112-4	Service Bulletins Letters and Instructions
Lycoming SSP-1776-3	Service Table of Limits and Torque Value Recommendations

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ABBREVIATIONS AND ACRONYMS

C	
CHT	Cylinder Head Temperature
F	
FAA	Federal Aviation Administration
FAR	Federal Aviation (and Space) Regulation
FOD	Foreign Object Debris
G	
GAMA	General Aviation Manufacturers Association
I	
ICAs	Instructions for Continued Airworthiness
in-lbs.	Inch Pounds (torque)
IOM	Installation, Operation and Maintenance Manual
IPC	Illustrated Parts Catalog
L	
lb.	Pound
M	
MEK	Methyl-Ethyl-Ketone
O	
OM	AFS-OM: AVStar Overhaul Manual
P	
P/N	Part Number
psi	Pounds per square inch
S	
SAE	Society of Automotive Engineers (oil viscosity)
SB	Service Bulletin
SI	Service Instruction
SL	Service Letter
T	
TBO	Time Between Overhaul

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INTRODUCTION

The AVStar Carburetor Product Line consists of Models LVC-3-3A, LVC-3-3PA, LVC-5-4PA, LHC-5-5BPA, LVC-5-5PA, LHC-6-6BA and LHC-6-6BPA. All carburetors are equipped with Altitude Mixture Adjustment "A", and those models designated with a "P" make use of an accelerator pump. All are used on normally aspirated, horizontally opposed, air-cooled engines. There are two LHC-6-6BA carburetors for use on turbocharged engines. Refer to the latest Revision of Lycoming Service Instruction S.I. 1523 for a cross reference of applicable engines and Lycoming Service Letter S.L. L114 for the applicable Parts Catalog, as well as any applicable data provided by the Airframer.

To be used as a ***Reference Only***, the table below identifies the applicable engine model(s) where these carburetors are used. The table on the following page identifies the applicable Part Numbers covered by this manual.

LYCOMING ENGINE MODELS	APPLICABLE MODEL
O-235-C, -F, -H, -J, -K, -L, -M, -N, -P	LVC-3-3PA
O-235-K, -L	LVC-3-3A
O-320-A, -B, -D, -E. -H O-360-J2A	LVC-5-4PA
O-360-A, -B, -C, -D	LVC-5-5BPA
O-540-A, -B, -E, -F, -G, -H, -J	LVC-5-5PA
O-320-D O-360-A, -C, -F O/LO-360-A HO-360-C O-540-J	LHC-6-6BPA
TO-360-C TO/LTO-360-E O-540-L	LHC-6-6BA

Table 1 - Part Number Applicability			
APPLICABLE P/N	APPLICABLE MODEL	APPLICABLE IPC	APPLICABLE OVERHAUL MANUAL
AV10-5199	LVC-3-3A	AFS-IPC-01	FSM LVC-S
AV10-5050	LVC-3-3PA		
AV10-5126			
AV10-5142			
AV10-5220			
AV10-5257			
AV10-5267			
AV10-3678-32	LVC-5-4PA		
AV10-4910-1			
AV10-5009			
AV10-5217			
AV10-6110			
AV10-6500			
AV10-6500-1			
AV10-3878	LVC-5-5BPA	AFS-IPC-02	FSM LVC-5-5
AV10-4164-1			
AV10-5034			
AV10-5193			
AV10-5288			
AV10-6054			
AV10-6102			
AV10-6108			
AV10-4404	LVC-5-5PA		
AV10-4404-1			
AV10-5054			
AV10-6035-11			
AV10-5256-1	LHC-6-6BA	AFS-IPC-03	FSM LHC-6-6
AV10-5280-2			
AV10-6001			
AV10-5219	LHC-6-6BPA		
AV10-5224			
AV10-5230			
AV10-5235			
AV10-5253			
AV10-5255			
AV10-5283			
AV10-6019			
AV10-6019-1			
AV10-6030-1			

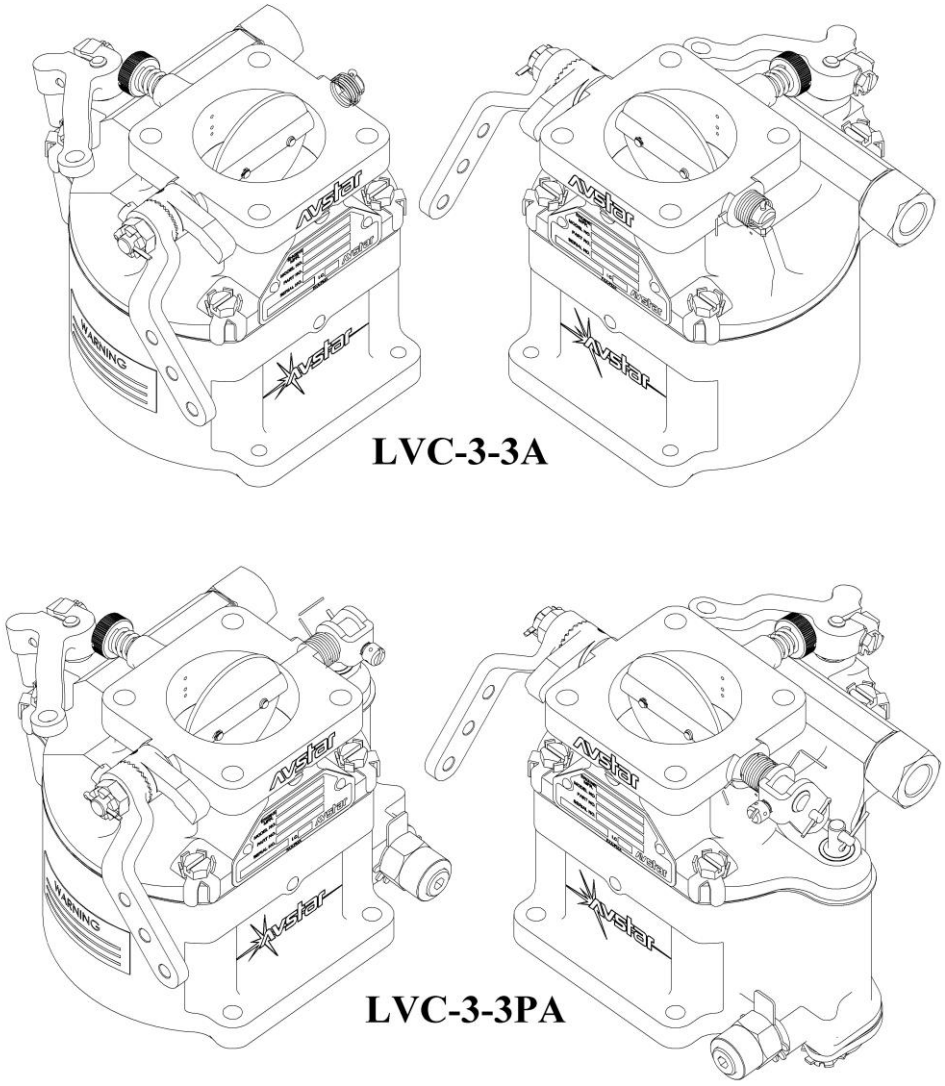

Figure 1
LVC-3-3A & LVC-3-3PA Carburetors

Carburetor Model Nomenclature

The table below shows the definition of each letter and number.

Model Number	Meaning
L	Lycoming
V	Vertical/Bottom
C	FAA Certified
3	Flange Size
3	Bore Size
P	Accelerator Pump
A	Altitude Mixture

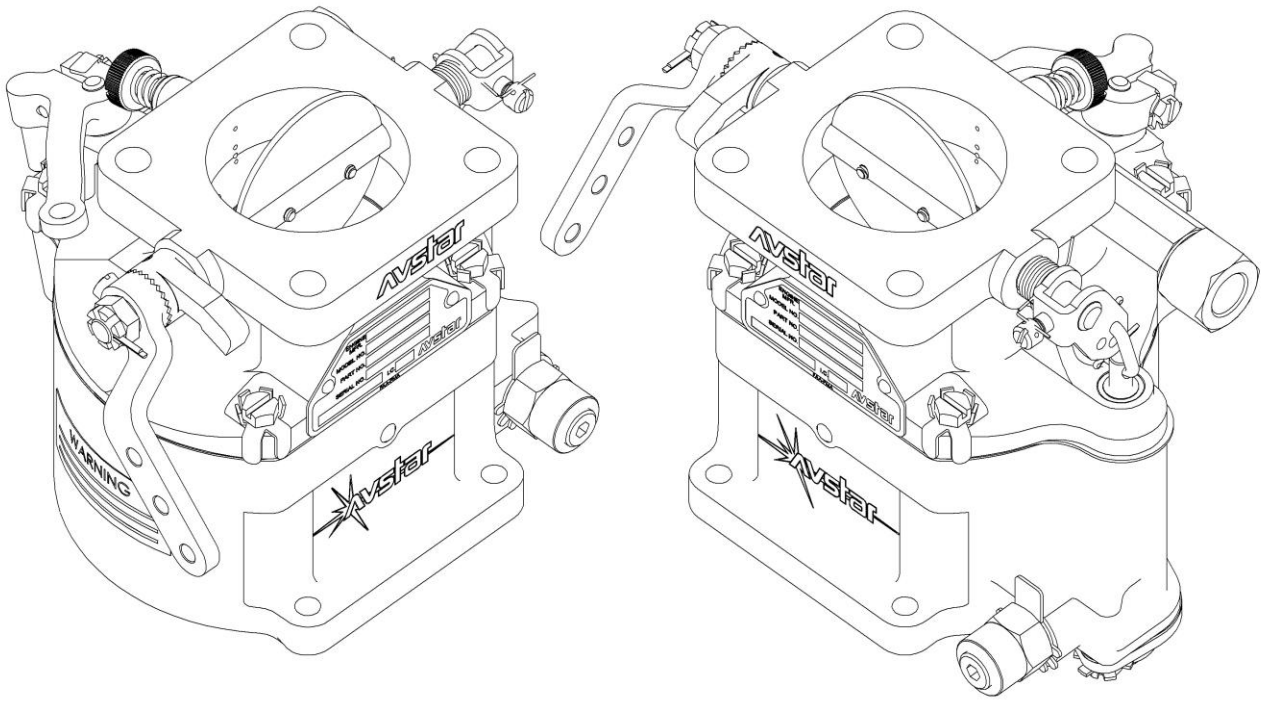

Figure 2
LVC-5-4PA Carburetors

Carburetor Model Nomenclature

The table below shows the definition of each letter and number.

Model Number	Meaning
L	Lycoming
V	Vertical/Bottom
C	FAA Certified
5	Flange Size
4	Bore Size
P	Accelerator Pump
A	Altitude Mixture

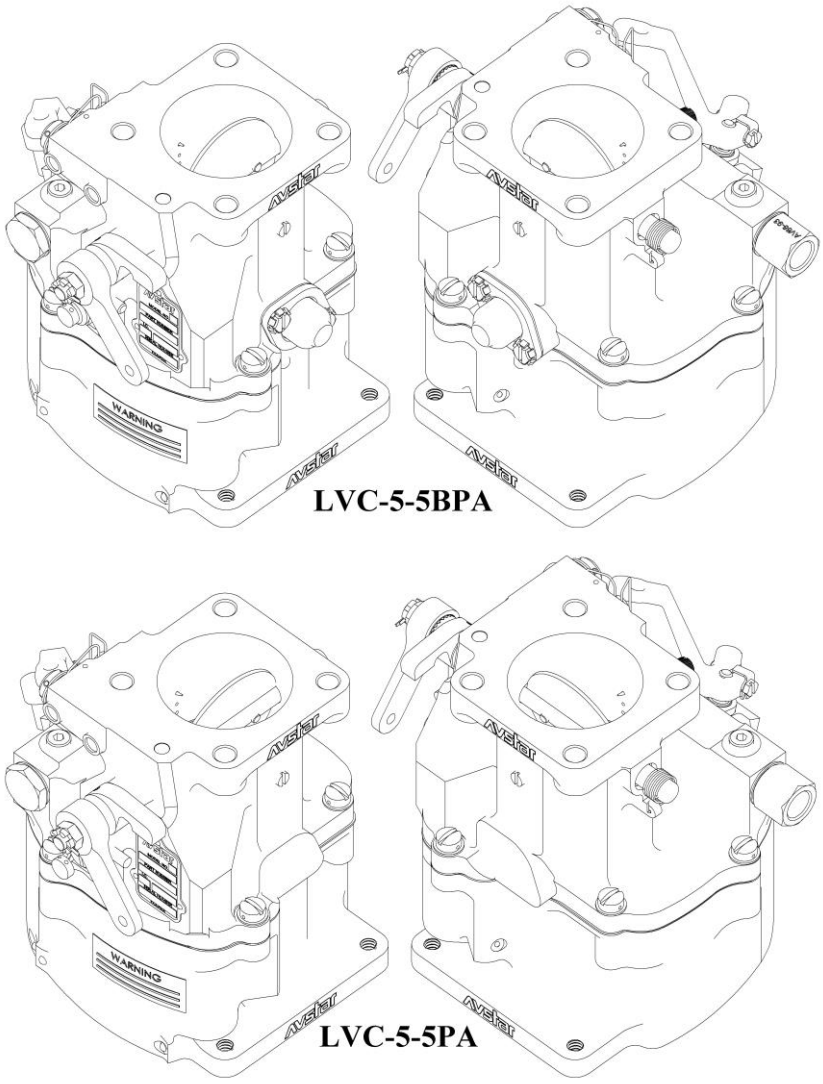

Figure 3
LVC-5-5PA & LVC-5-5BPA Carburetors

Carburetor Model Nomenclature

The table below shows the definition of each letter and number.

Model Number	Meaning
L	Lycoming
V	Vertical/Bottom
C	FAA Certified
5	Flange Size
5	Bore Size
B	Non-standard Bore
P	Accelerator Pump
A	Altitude Mixture

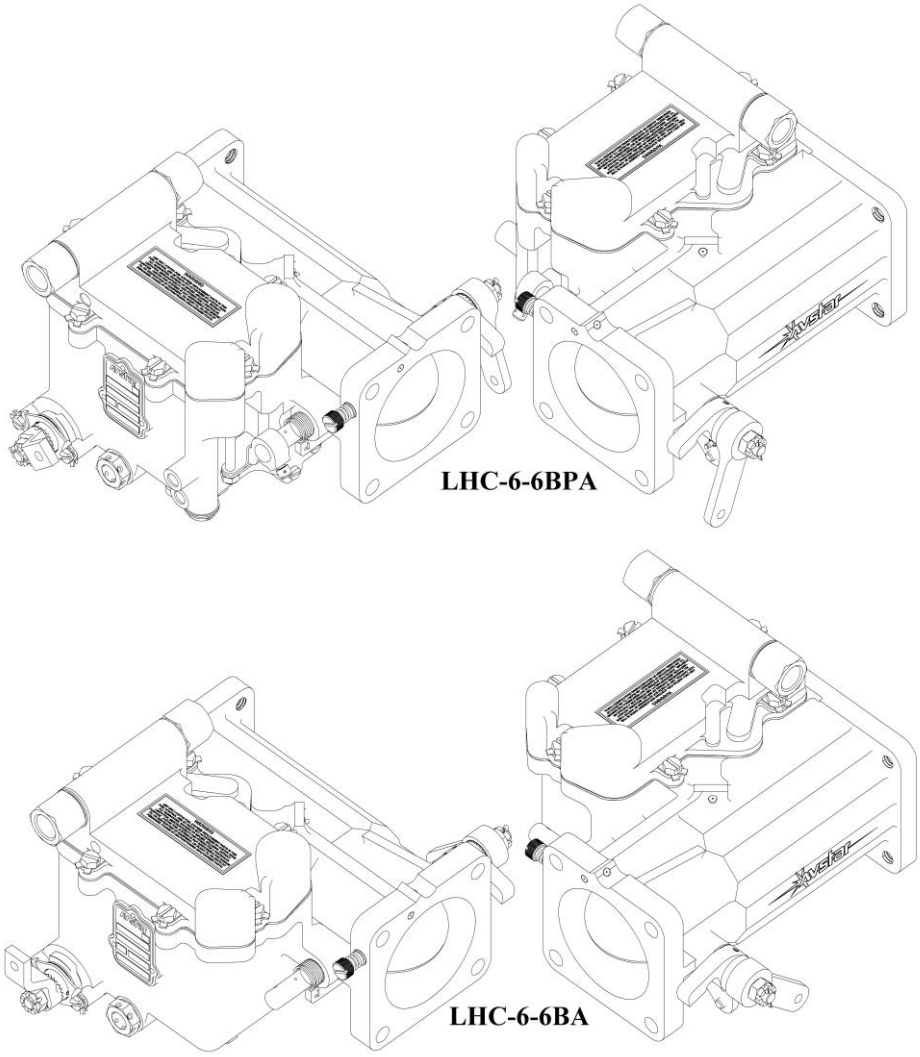

Figure 4
LHC-6-6BPA & LHC-6-6BA Carburetors

Carburetor Model Nomenclature

The table below shows the definition of each letter and number.

Model Number	Meaning
L	Lycoming
H	Horizontal
C	FAA Certified
6	Flange Size
6	Bore Size
B	Non-standard Bore
P	Accelerator Pump
A	Altitude Mixture

Carburetor Serial Number

Every carburetor sent from the factory (new or overhaul) is identified by a unique serial number. The serial number is identified on the data plate. On LVC-3 & LVC-5-4 models the data plate is beneath the sump mounting flange facing forward. On LVC-5-5 models the data plate is located on the starboard side, beneath the throttle lever. On LHC-6-6 models the data plate is located just above the bowl drain plug on the mixture lever side. The data plate is only to be removed during overhaul. Any field modifications made would only indicate compliance with applicable Service Bulletins or Instructions.

Scope of this Manual

This manual provides instructions (in compliance with FAR 33.4) for maintenance of AVStar carburetors. The information includes airworthiness limitations, fault isolation guidelines and procedures for component replacement, carburetor removal, and carburetor installation. Refer to the applicable ***AFS-IPC Illustrated Parts Catalog*** to identify spare parts.

Compliance Requirements

⚠WARNING: FOR CORRECT CARBURETOR MAINTENANCE, COMPLETE THE NECESSARY MAINTENANCE PROCEDURES IN THIS MANUAL AND APPLICABLE SERVICE DOCUMENTS. AVSTAR FUEL SYSTEMS SERVICE DOCUMENTS WRITTEN AT A LATER DATE OVERRIDE PROCEDURES IN THIS MANUAL UNLESS OTHERWISE SPECIFIED.

PROCEDURES IN THIS MANUAL MUST BE PERFORMED BY QUALIFIED PERSONNEL WITH THE REQUISITE CERTIFICATIONS.

Before you perform maintenance on any of the applicable carburetors, read this manual in its entirety. Obey all procedures and inspections in this manual.

NOTICE: If you do not comply with the maintenance procedures in this manual for the carburetor, you can void the warranty. Please consult your warranty for a full statement of your rights, limitations, and obligations that exist thereunder.

This manual provides fuel system description, unpacking procedures, acceptance check, carburetor preservation and storage, depreservation, installation requirements, installation, operation, pre-flight test, operational test, fuels to be used, and operating specifications. This manual also provides universal required maintenance for all carburetors applicable, routine time-interval inspections, routine service, and scheduled servicing procedures.

Refer to any of the latest revisions of the applicable AVStar ***Service Document List*** for additional service instructions, as well as any service documents issued by AVStar showing a date after the issue date or current revision date of this manual.

Refer to the latest revision of the applicable ***Illustrated Parts Catalog*** for torque values.

⚠WARNING: OPERATE THIS CARBURETOR IN ACCORDANCE WITH SPECIFICATIONS IN APPENDIX A OF THIS MANUAL. OPERATION OF THE CARBURETOR OUTSIDE OF THE SPECIFIED OPERATING LIMITS CAN CAUSE PERSONAL INJURY AND/OR DAMAGE TO THE ENGINE.

Environmental Compliance

AVStar Fuel Systems recommends that owners and service personnel be in compliance with all federal, state, and local environmental regulations when solvents, fuel, oil, chemicals, or other consumables are used in service.

Warnings, Cautions, and Notices

Be sure to read and comply with the Warnings, Cautions, and Notices in this manual and all service documents. Although AVStar cannot predict all possible hazards or damages, it makes a reasonable effort to supply the best known guidance and recommended practices for safe operation and maintenance of its fuel systems.

The table below defines the four types of safety advisory messages used in this manual as per the American National Standard and ANSI Z535-6-2006.

Safety Advisory Conventions	
Advisory Word	**Definition**
DANGER:	Indicates a hazardous situation which, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.
⚠ **WARNING:**	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠ **CAUTION:**	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. It also can be used without the safety alert symbol as an alternative to **"NOTICE."**
NOTICE:	The preferred signal word to address practices not related to personal injury.

NOTICE: In this manual, the word "recommend" refers to "best practices."

Service Bulletins & Manuals

As advancements in technological applications on this fuel system continue, AVStar will make future revisions to this manual. However, if more timely distribution is necessary, AVStar posts all pertinent documents to our website under 'Product Support'. Here you can find all active Service Bulletins (AFS-SB), Operation & Maintenance Manuals (AFS-IOM), Illustrated Parts Catalogs (AFS-IPC), and instructions for acquiring Overhaul Manuals (AFS-OM).

Applicable information noted in the Service Document List from Lycoming Engines' should be obtained directly from Lycoming to ensure the latest revision is consulted. Any information related to the fuel system within the aircraft engine and/or airframe manuals would override the data provided with this and any other document AVStar has provided. If contradictions or discrepancies are observed, please contact AVStar directly so those details may be validated and revised as required.

Reminder: Unless otherwise specified, AVStar service documents (which have a later date than this manual) override procedures in this manual.

For reference, the Service Document List at the front of this manual shows the editions of the service documents referenced or included in this manual as well as applicable service documents from Lycoming Engines.

List of Publications

Refer to AVStar's website for a complete list of publications available.

Warranty & Liability Information

The warranty coverage on AVStar products is described in detail in the following documents. Refer to the AVStar website for the latest revision:

Certified New Fuel Systems	AFS900-F28, latest revision
Overhauled Fuel Systems	AFS900-F31, latest revision

Dismantling a fuel system or using unauthorized parts in any AVStar product voids all warranties. AVStar will not accept liability for units that contain unauthorized parts irrespective of the theory upon which any claim might be based including, but not limited to, breach of contract, warranty, negligence, or strict liability in tort. The customer specifically agrees that the party or parties responsible for installation and/or use of unauthorized parts shall bear sole and exclusive liability for all property damage or injury, including death, resulting from any malfunction of the unit in which unauthorized parts are installed. Use of grade fuels not authorized by Lycoming S.I. 1070 also voids all warranties.

Instructions for Continued Airworthiness (ICA)

This manual, together with the applicable latest revisions of the ***Illustrated Parts Catalog (IPC)*** and ***Overhaul Manual (OM)***, service documents, and related publications make up the complete set of Instructions for Continued Airworthiness (ICAs). The ICAs are prepared by AVStar Fuel Systems and are accepted by the Federal Aviation Administration (FAA).

Simplified Technical English

The text in the manual is written in the form of Simplified Technical English in compliance with FAA requirements and to make translation into other languages easier.

Format

Chapters in this manual are identified in General Aviation Manufacturers Association (GAMA) Specification format.

Figures

Figures in this manual are for illustration purposes only. Figures always start as Figure 1 in each chapter.

Copyright

Feedback

To supply comments, suggestions, or corrections to this manual, either make a call to customer service or use the AVStar website http://www.avstardirect.com/contact-us/

Customer Service

Additionally, AVStar has Customer Service to supply information and assistance to owners, operators, and maintenance personnel servicing AVStar Fuel Systems.

Phone:

Factory:	U.S. and Canada toll free - +1(866) 982-7287
	Direct - +1(561) 575-1560
Fax:	+1(561) 575-0795

AVStar's regular business hours are Monday through Friday from 8:00 A.M. through 5:00 P.M. Eastern Time (-5 GMT)

Change of Address Notification

The owner of the manual is responsible for supplying a change of address to AVStar Fuel Systems.

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AIRWORTHINESS LIMITATIONS

1. General

   This Airworthiness Limitations chapter sets forth each mandatory replacement time, inspection interval, and related procedure required for continued airworthiness. The Airworthiness Limitations section is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations (FAR) unless an alternative program has been FAA-approved.

2. Currently there are no Airworthiness Limitations issued.

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05-00 - MAINTENANCE - GENERAL

1. General

   A. For continued airworthiness, this manual includes AVStar's recommended service information for routine time-interval inspections, routine maintenance, maintenance for unusual conditions, scheduled and unscheduled servicing procedures, and guidelines for fault isolation.

   B. Carburetor features, system descriptions and specifications can be found in Appendix A of this manual.

   C. List of Tools for maintenance. This list only includes maintenance and inspection procedures covered under this manual. Tools used for any other Major Repairs and for Overhaul can be found in the applicable overhaul manuals.

2. Fuel Systems can be purchased new directly from AVStar or its authorized distributors

   A. All maintenance (overhaul, repair, inspection, replacement of parts, or preservation) identified in this manual and within the Service Document List requires persons to be fully trained, qualified, and authorized to approve for return to service.

3. Time Between Overhaul (TBO)

   NOTICE: The carburetor could require an overhaul or replacement before TBO.

   A. The TBO for all AVStar carburetors carrying valid return to service documentation is the same as the TBO identified by the manufacturer of the engine for which the carburetor is specified.

   B. Alternatively, overhaul must be performed 12 years after the carburetor is ***first*** placed into service. Any applicable repairs do not serve as an extension of service life.

   C. Under circumstances where the carburetor has been subjected to unusual or atypical environmental conditions, such as, but not limited to, water, fire, particulate contamination or unspecified fuel or liquid, then an immediate overhaul is required before returning to service.

   D. For AVStar carburetors used on Lycoming Engines, refer to the latest revision of Lycoming Service Instruction S.I. 1009.

4. Safety Precautions

⚠WARNING: TURN OFF THE IGNITION SWITCH AND DISABLE ALL POWER TO THE ENGINE TO PREVENT ACCIDENTAL ENGINE START-UP WHILE WORKING ON THE CARBURETOR. FAILURE TO DISABLE POWER COULD CAUSE ACCIDENTAL ENGINE START-UP, INJURY, OR DEATH. IF IT IS NECESSARY TO COMPLETE OPERATIONAL TESTS WITH THE POWER ON, KEEP ALL PERSONNEL AWAY FROM THE ROTATIONAL RADIUS OF THE PROPELLER TO PREVENT INJURY OR DEATH ON ENGINE START-UP.

⚠WARNING: DO NOT SMOKE OR HAVE AN OPEN FLAME OR ANY DEVICE THAT CAN MAKE SPARKS. SMOKING, FLAMES, OR SPARKS CAN CAUSE FUEL, OR OTHER FLAMMABLE TEST FLUIDS, IGNITION WHICH CAN CAUSE SERIOUS BURNS, INJURY OR DEATH.

5. Maintenance Practices

   A. Obey all safety precautions

   B. DO NOT reuse any gasket. You must install a new gasket.

   C. Be advised the opening of any fuel system voids all applicable AVStar warranties. AVStar cannot restrict certified repairman from performing any repairs, assuming the latest revisions of the proper manuals are followed.

   D. Remove all traces of dirt, dust, debris and accumulated matter from parts. All parts must be clean before they are installed.

   E. Prior to installing any part, a sound visual inspection should be made for burrs, damage, etc.

   F. AVStar recommends only using AVStar Fuel Systems replacement parts. Use of parts not authorized by AVStar voids all applicable warranties.

   G. If adhesive tape has been applied to any part, remove the tape and clean the part completely. Remove all tape and residue.

   H. If it is necessary to use a hammer, use only a plastic, rubber or rawhide hammer.

   I. Hardware

      (1) All lockwire and cotter pins must be made of corrosion-resistant steel and installed as a snug fit in holes in shafts and bolts/screws for correct locking.

      (2) The cotter pin head must install as a snug fit into the castellation of the nut where applicable. Unless otherwise specified, bend one end of the cotter pin back over the bolt, screw or shaft and the other end flat against the nut.

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05-10 – TIME LIMITS

1. General

   A. Carburetor maintenance inspections are based on time intervals as shown in the Carburetor Inspection Schedule. All inspections must be completed no later than 10 hours after the specified time interval for the inspection.

2. Carburetor Inspection Schedule

   A. The Carburetor Inspection Schedule shows the inspections that must be done for carburetors in this manual. The scope of inspections includes visual observations during engine servicing or maintenance as well as inspections based on progressive time intervals after the carburetor is put into service. Carburetor inspections start from 10 hours and go to 25, 50, and 100 hour/annual inspections.

CARBURETOR INSPECTION SCHEDULE	
When to Perform	**Reference**
During engine servicing or maintenance	"Visual Inspection" in Chapter 05-20
As Instructed by applicable Service Document	Latest Revision of any applicable Service Bulletin or Document
Initial 10-hour inspection (for new, overhauled, or repaired Fuel System)	"10-Hour Initial Carburetor Inspection" in Chapter 05-20
After 25 hours of initial operation of new, overhauled, or repaired Fuel System **OR** **First 6 months** since the fuel system was placed back into service (whichever occurs first)	"25-Hour Initial Carburetor Inspection" in Chapter 05-20
25 hours after 25-hour Initial Operation Inspection **OR** After every 50 hours of operation or every 4 months (whichever occurs first)	"50-Hour Carburetor Inspection" in Chapter 05-20
After every 100 hours of operation and annually*	"100-Hour Carburetor Inspection" in Chapter 05-20
Time Between Overhaul (TBO) Refer to the latest revision of Lycoming Service Instruction S.I. 1009 for any change to the recommended TBO	FSM LVC-S FSM LVC-5-5 FSM LHC-6-6
*More frequent inspections could be necessary for engines operated in particulate-laden or extremely humid, cold, or damp environments.	
NOTICE: An engine operational ground check must be completed prior to and after each inspection, after maintenance, and after fuel system overhaul. Refer to the applicable Engine Manual for these instructions.	

NOTICE: Inspections in this manual apply to the carburetor and not the engine or aircraft. Refer to the applicable manufacturer's maintenance manual for inspection information on all other components.

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05-20 – SCHEDULED MAINTENANCE CHECKS

NOTICE: Inspection checklists and instructions in this chapter are recommended and are a supplement to any additional maintenance guidelines from the engine and airframe manufacturer or component manufacturers that have a Supplemental Type Certificate (STC).

NOTICE: Do not exceed inspection intervals by more than 10 hours. Refer to FAR-91-409 for additional requirements.

1. Visual Inspection

   A. Complete the visual inspection, usually with the carburetor installed on the engine, before each routine 50 and 100-hour inspection and every time you service or do maintenance on the engine.

⚠ WARNING: BEFORE ANY MAINTENANCE INSPECTION IN THE AREA OF THE PROPELLER RADIUS, MAKE SURE THE IGNITION SWITCH IS SET TO OFF AND THAT ALL POWER TO THE ENGINE IS DISCONNECTED. DO NOT STAND (OR ALLOW ANYONE ELSE TO STAND) CLOSE TO THE ARC OF THE PROPELLER BLADE. IF POWER IS ON A LOOSE OR BROKEN WIRE CAN CAUSE THE ENGINE TO START AND THE PROPELLER TO ROTATE WHICH CAN LEAD TO DEATH OR SERIOUS INJURY.

   B. Required tools:

   - Basic aviation mechanic's tools
   - Flashlight
   - Mirror

   C. Complete the visual inspection as follows:

   (1) Set all ignition and electrical switches to the OFF position.

   (2) Remove the engine cowling from the aircraft for access to the engine and its compartment.

   (3) Look for unwanted dirt, dust, volcanic ash, sand, or particles on the exterior of the carburetor. If particulate contamination is suspected to have entered the air intake of the carburetor, further removal and repair or overhaul is recommended.

   (4) Carefully examine the exterior of the carburetor for any signs of a fuel leak. Refer to Appendix A for potential leak locations (identified as 'Leak Inspection Point'). If any leaks are found complete the necessary repairs to make sure the carburetor is operating correctly.

   (5) Examine the fuel hose connection to the carburetor inlet fitting for secure attachment, signs of leaks, or wear.

   (6) While unlikely, examine the exterior of the carburetor for cracks and any surface damage.

   NOTICE: If you find any cracks contact AVStar immediately.

(7) Inspect all lockwiring where used and verify they are attached correctly and tightly.

(8) Make sure that the induction system is in satisfactory condition.

(9) In accordance with the airframe manufacturer's instructions, examine the induction air filter for cleanliness, security, and indications of damage. Replace the air filter if it has holes or is torn in accordance with the aircraft manufacturer's instructions.

NOTICE: After it has been operated in dusty conditions, clean the induction filter. For servicing procedures refer to the airframe manufacturer's instructions.

(10) Examine all engine controls for general condition, full travel, and freedom of operation in accordance with the airframe manufacturer's instructions. Examine both throttle and mixture control connections for proper hardware and tightness in accordance with the airframe manufacturer's instructions.

(11) Examine and ensure the throttle and mixture control travels provide complete "stop to stop" travel, from full throttle to idle and Full Rich to Idle Cut-Off.

(12) Before flight, make sure that all leaks and problems have been corrected or repaired.

(13) Complete all other required inspections in accordance with the Engine or Airframe manufacturer's instructions prior to installing the cowling on the aircraft.

2. 10-Hour Initial Carburetor Inspection

   A. Complete this inspection after the first 10 hours of initial carburetor operation on the engine.

   B. Complete the 10-Hour Initial Carburetor Inspection Checklist for this inspection.

⚠WARNING: BEFORE THIS INSPECTION, MAKE SURE THAT THE IGNITION SWITCH IS OFF AND THAT POWER TO THE ENGINE IS DISCONNECTED. AS A PRECAUTION, DO NOT STAND OR ALLOW ANYONE TO STAND WITHIN THE ROTATIONAL ARC RADIUS OF THE PROPELLER.

NOTICE: Copy the blank checklist and complete this checklist as a record of engine maintenance. Put the completed checklist in the engine logbook.

10-HOUR INITIAL CARBURETOR INSPECTION CHECKLIST			
Engine Model Number: _____		**Engine Serial Number: _____**	
Date Inspection Performed: _____		**Carburetor Part Number: _____**	
Inspection Performed By: _____		**Carburetor Serial Number: _____**	
Inspection Item	**Comments**	**Results / Notes**	**Done**
Complete the Visual Inspection.	Refer to the section "Visual Inspection" in this Chapter.		
General			
Correct any discrepancies found before returning to service.			
Obey all applicable Airworthiness Directives and Service Bulletins.			
Record all findings and corrective action in the engine logbook.			
⚠WARNING:	CORRECT ALL LEAKS. IF FUEL LEAKS ARE NOT CORRECTED BEFORE FLIGHT, THE ENGINE CAN HAVE LOSS OF POWER OR ENGINE FAILURE CAN OCCUR.		

3. 25-Hour Initial Carburetor Inspection

   A. Complete this inspection after ***25 hours*** of initial carburetor operation on the engine ***OR*** after the ***first 6 months*** since the carburetor was placed back into service, whichever occurs first.

   B. Complete the 25-Hour Initial Carburetor Inspection Checklist for this inspection.

⚠ WARNING: BEFORE THIS INSPECTION, MAKE SURE THAT THE IGNITION SWITCH IS OFF AND THAT POWER TO THE ENGINE IS DISCONNECTED. AS A PRECAUTION, DO NOT STAND OR ALLOW ANYONE TO STAND WITHIN THE ROTATIONAL ARC RADIUS OF THE PROPELLER.

NOTICE: Copy the blank checklist and complete this checklist as a record of engine maintenance. Put the completed checklist in the engine logbook.

25-HOUR INITIAL CARBURETOR INSPECTION CHECKLIST			
Engine Model Number: _____		**Engine Serial Number: _____**	
Date Inspection Performed: _____		**Carburetor Part Number: _____**	
Inspection Performed By: _____		**Carburetor Serial Number: _____**	
Inspection Item	**Comments**	**Results / Notes**	**Done**
Complete the Visual Inspection.	Refer to the section "Visual Inspection" in this Chapter.		
Drain carburetor and clean fuel strainer.	If any FOD identified in strainer find and correct source. If any FOD identified in drained fuel contact AVStar for further instruction.		
Check carburetor air intake ducts for leaks, security, obstructions, and filter damage.	Evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter.		
General			
Correct any discrepancies found before returning to service.			
Obey all applicable Airworthiness Directives and Service Bulletins.			
Record all findings and corrective action in the engine logbook.			
⚠ WARNING:	CORRECT ALL LEAKS. IF FUEL LEAKS ARE NOT CORRECTED BEFORE FLIGHT, THE ENGINE CAN HAVE LOSS OF POWER OR ENGINE FAILURE CAN OCCUR.		

4. 50-Hour Carburetor Inspection

   A. Complete this inspection ***25 hours after*** the 25-Hour Initial Carburetor Inspection ***OR*** after ***every 50 hours of operation or every 4 months***, whichever occurs first.

   B. Complete the 50-Hour Carburetor Inspection Checklist for this inspection.

⚠WARNING: BEFORE THIS INSPECTION, MAKE SURE THAT THE IGNITION SWITCH IS OFF AND THAT POWER TO THE ENGINE IS DISCONNECTED. AS A PRECAUTION, DO NOT STAND OR ALLOW ANYONE TO STAND WITHIN THE ROTATIONAL ARC RADIUS OF THE PROPELLER.

NOTICE: Copy the blank checklist and complete this checklist as a record of engine maintenance. Put the completed checklist in the engine logbook.

50-HOUR CARBURETOR INSPECTION CHECKLIST			
Engine Model Number: _____		**Engine Serial Number: _____**	
Date Inspection Performed: _____		**Carburetor Part Number: _____**	
Inspection Performed By: _____		**Carburetor Serial Number: _____**	
Inspection Item	**Comments**	**Results / Notes**	**Done**
Complete the Visual Inspection.	Refer to the section "Visual Inspection" in this Chapter.		
Drain carburetor and clean fuel strainer.	If any FOD identified in strainer find and correct source. If any FOD identified in drained fuel contact AVStar for further instruction.		
Check carburetor air intake ducts for leaks, security, obstructions, and filter damage.	Evidence of dust or other solid material in the ducts is indicative of inadequate filter care or damaged filter.		
Locate the idle mixture spring and check to ensure there is compression in the spring.	Excessive idle mixture adjustments in the RICH direction can result in the needle being loose or in worst cases lost.		
Check for movement between throttle body and bowl. Check throttle body to bowl attaching screws for tightness by attempting to move the screw and/or washers with your fingers only. Where applicable ensure lockwiring is acceptable.	Applicable to **LVC** Model Carburetors Only. Do NOT attempt to turn the screw with a screwdriver or wrench. It can damage the lockwashers or lockwire where used. If movement or loose screws are identified, remove carburetor for repair and corrective action.		
General			
Correct any discrepancies found before returning to service.			
Obey all applicable Airworthiness Directives and Service Bulletins.			
Record all findings and corrective action in the engine logbook.			
⚠WARNING:	CORRECT ALL LEAKS. IF FUEL LEAKS ARE NOT CORRECTED BEFORE FLIGHT, THE ENGINE CAN HAVE LOSS OF POWER OR ENGINE FAILURE CAN OCCUR.		

5. 100-Hour Carburetor Inspection

   A. Complete this inspection ***every 100 hours and annually***.

   B. Complete the 100-Hour Carburetor Inspection Checklist for this inspection.

⚠ WARNING: BEFORE THIS INSPECTION, MAKE SURE THAT THE IGNITION SWITCH IS OFF AND THAT POWER TO THE ENGINE IS DISCONNECTED. AS A PRECAUTION, DO NOT STAND OR ALLOW ANYONE TO STAND WITHIN THE ROTATIONAL ARC RADIUS OF THE PROPELLER.

NOTICE: Copy the blank checklist and complete this checklist as a record of engine maintenance. Put the completed checklist in the engine logbook.

100-HOUR CARBURETOR INSPECTION CHECKLIST			
Engine Model Number: _____		**Engine Serial Number: _____**	
Date Inspection Performed: _____		**Carburetor Part Number: _____**	
Inspection Performed By: _____		**Carburetor Serial Number: _____**	
Inspection Item	**Comments**	**Results / Notes**	**Done**
Complete the Visual Inspection.	Refer to the section "Visual Inspection" in this Chapter.		
Complete the 50-Hour Carburetor Inspection	Refer to the "50-Hour Carburetor Inspection Checklist" in this Chapter		
Check that the carburetor is securely mounted with a tight connection to the sump and applicable induction system. Verify no gaps are present at applicable gaskets.	Refer to the applicable Engine and/or Airframe maintenance manual(s) for proper mounting torque values. If found unsecure or with gaps, replace gasket(s) and applicable hardware as required.		
General			
Correct any discrepancies found before returning to service.			
Obey all applicable Airworthiness Directives and Service Bulletins.			
Record all findings and corrective action in the engine logbook.			
⚠ WARNING:	CORRECT ALL LEAKS. IF FUEL LEAKS ARE NOT CORRECTED BEFORE FLIGHT, THE ENGINE CAN HAVE LOSS OF POWER OR ENGINE FAILURE CAN OCCUR.		

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05-30 – CLEANING

1. Cleaning Guidelines

   A. Refer to **05-20** for Visual Inspection Checks

   B. After the Visual Inspection, should cleaning be required the following guidelines should be followed:

      (1) Cleaning of carburetor parts should only be undertaken using carburetor cleaner available commercially from a number of sources. Great care must be taken to ensure parts do not move and damage each other during the cleaning process.

      NOTICE: Non-metallic parts should never be cleaned using the carburetor cleaning fluid.

      NOTICE: Disassembly of the fuel system or any modification made by a party other than AVStar Fuel Systems or one of its approved Service Centers voids all applicable warranties. Refer to the AVStar website for a list of all currently authorized Service Centers.

      (2) By design, carburetor bodies, nozzles, idle tubes, etc. have many small orifices and passages. The flow characteristics of these features are carefully created during manufacture and are critical to satisfactory carburetor performance. Even small changes in size or surface finish can be detrimental. Wire, cutting tools or abrasives of any kind should never be used in the cleaning of these parts.

      (3) Visual confirmation that small passageways are cleaned satisfactorily is difficult without the use of magnifying inspection equipment such as a bore scope.

      (4) Refer to the applicable Illustrated Parts Catalog for components which require replacement anytime they are removed from the carburetor.

      (5) Refer to the applicable Overhaul Manual for inspection techniques and wear limits of individual components.

2. Fuel Inlet Strainers

   A. Refer to **05-20** for scheduled cleaning intervals.

   B. The fuel inlet strainer can be cleaned with MEK or acetone. After cleaning, rinse with a suitable mineral spirit and allow to air dry.

      NOTICE: If the Fuel Inlet Strainer cannot be thoroughly cleaned or if there is any damage to it, the strainer should be replaced. Refer to the applicable IPC for additional P/N information as required.

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05-50 – UNSCHEDULED CORRECTIVE MAINTENANCE

1. Unusual Conditions

Unscheduled maintenance is necessary when the following conditions occur:

- Incorrect fuel or fuel contamination
- Water damage
- Engine on fire or near fire
- Volcanic ash/particulate contamination
- Hard Landing

A. Incorrect Fuel or Fuel Contamination

(1) Actual damage to the carburetor from incorrect fuel could be in a range from unnoticeable to severe damage or failure. Primary damage caused by incorrect fuel occurs at the engine, with contaminated fuel having a greater affect on the carburetor. There are a number of critical flow components and orifices which are only intended to be functional with approved fuel types. Refer to the latest revision of Lycoming Service Instruction S.I. 1070 for the most current list of approved fuels.

(2) Because of many variables, it is impossible to be sure of the airworthiness of a carburetor which has been exposed and operated with incorrect or contaminated fuel – except by detailed inspection of the carburetor by qualified personnel. Therefore, after the carburetor has been operated with incorrect or contaminated fuel, regardless of time of operation:

(a) Do not continue operation with incorrect or contaminated fuel.

(b) Drain the carburetor and remove from service in accordance with this manual and the aircraft manufacturer's instructions.

(c) AVStar recommends returning the carburetor to our facility or one of our service centers for detailed evaluation to determine if repair or overhaul is necessary.

B. Water Damage

⚠ WARNING: WHEN A CARBURETOR HAS BEEN SOAKED IN WATER OR EXPOSED TO EXCESSIVE AMOUNTS OF WATER IN THE FUEL, MOISTURE AND UNWANTED MATERIALS CAN CAUSE DAMAGE TO ALL AIR AND FUEL FLOW CIRCUITS. DO NOT OPERATE A CARBURETOR THAT HAS BEEN EXPOSED TO OR IMMERSED IN WATER.

(1) Disassemble, examine and overhaul the carburetor in accordance with the applicable overhaul manual ***AFS-OM***.

C. Engine or Carburetor on Fire or Near a Fire

(1) The carburetor requires replacement or complete overhaul.

D. Volcanic Ash/Particulate Contamination

(1) Follow the applicable instructions and guidelines in the Engine Maintenance Manual for additional instructions regarding the engine.

⚠WARNING: INLET AIR WHICH CONTAINS VOLCANIC ASH OR OTHER PARTICULATES CAN CAUSE DAMAGE AND OBSTRUCT ANY OF THE INTERNAL CIRCUITS OF THE CARBURETOR. EVEN IF NO OBVIOUS SYMPTOMS OF ABNORMAL PERFORMANCE OR OPERATION ARE WITNESSED, FOD WITHIN ANY OF THE INTERNAL CIRCUITS WITHIN THE CARBURETOR CAN SUBSEQUENTLY BECOME DISLODGED AND AFFECT PERFORMANCE.

(2) The carburetor requires replacement or complete overhaul.

E. Hard Landing

(1) It is impossible to completely define what constitutes an abnormally hard landing, and how frequently this may occur in normal flight operation.

(2) At a minimum, operators should note within the appropriate logbook the date of such an occurrence.

(3) Should operators note any abnormal performance or fuel flow changes since the occurrence of a hard landing, the carburetor should be removed from service for repair.

(4) While more prevalent on LHC-6-6 model carburetors, hard landings can ultimately have an affect on the float height setting within the carburetor bowl and in extreme cases, damage to the float itself can occur. Refer to the applicable overhaul manual for float height setting requirements, inspection requirements to place a float into service, and testing requirements for proper float operation.

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12-30 – UNSCHEDULED SERVICING

1. General

   A. Fault Isolation:

      (1) Refer to the section "Fault Isolation Guide" in this chapter.

      (2) Review maintenance logs and use applicable indicators to eliminate simple and inexpensive solutions. A quick visual inspection of the carburetor can show indications of obvious problems such as induction leaks, fuel stains, etc. See Chapter 05, Section 20 for further details on inspections.

      (3) Discuss the problem with the pilot for more details.

      (4) Take note of the last satisfactory performance of the carburetor and how it operated. Identify any occurrences whether maintenance or otherwise which may indicate an obvious problem.

2. Fault Isolation Guide

   A. The Fault Isolation Guide in Table 1 shows the more common and recurring problems, causes, and corrective actions. Continue from the simplest to the most complex possible causes.

Table 2
Fault Isolation Guide

Problem	Cause	Corrective Action	Additional Ref.
Engine will not start or starts with difficulty	No fuel flow or lack of sufficient fuel flow: Blockage in fuel hose	1. Disconnect the fuel hose. 2. Complete the check of the fuel flow. 3. Examine for evidence of leaks and correct as required. 4. Clean the filters, strainers, lines, or fuel valves.	Engine/Airframe Maintenance Manual(s)
	No fuel flow or lack of sufficient fuel flow: Incorrect Fuel Pressure	Verify the observed pressure to the carburetor falls within the limits indicated in Appendix A. Correct as required.	Appendix A & Engine/Airframe Maintenance Manual(s)
	Throttle valve open too far	Set throttle for appropriate idle speed.	Engine Maintenance Manual
	Insufficient prime (could be accompanied by backfire)	Increase prime. Examine priming system for leaks.	Engine/Airframe Maintenance Manual(s)
	Flooded engine (overpriming)	Follow instructions in engine manual	Engine/Airframe Maintenance Manual(s)
	Flooded Engine (carburetor)	1. If equipped with a priming system, confirm proper operation (i.e. proper solenoid actuation). 2. Confirm source of flooding is at the carburetor. Flooding would typically occur at the main nozzle. 3. If coupled with a recent installation of the carburetor or empty fuel bowl, lightly tap on the side of the carburetor to encourage float needle to seat properly. 4. If flooding occured with no other maintenance activity, remove carburetor from service for repair.	Engine/Airframe Maintenance Manual(s)

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Table 2 Fault Isolation (Contd.)			
Problem	**Cause**	**Corrective Action**	**Additional Ref.**
Engine will not start or starts with difficulty	Water in carburetor	Drain carburetor and fuel lines. If water is found, remove carburetor for repair and identify and correct source of water contamination.	
Rough Idle or Failure of Engine to Idle Properly	Leak in induction system	1. Follow instructions in engine manual. 2. Examine both connections to the carburetor at the sump and applicable airbox, tighten connection or replace gasket(s) as necessary.	Engine/Airframe Maintenance Manual(s)
	Incorrect Idle Mixture or Idle Adjustment	1. Adjust the idle mixture per instructions in the section "Idle Speed Mixture Adjustment" in Chapter 72-00. 2. Readjust idle speed.	72-00
	Low Fuel Pressure	Adjust fuel pressure if applicable. Check fuel pump and drive and/or replace fuel pump or fuel pressure regulator.	Engine Maintenance Manual
High Manifold Pressure at Idle	Air leak in induction system	Examine the induction system for leaks and repair as necessary. NOTICE: If the induction system has leaks, the engine will idle rough.	
Poor Idle Cut-Off	Incorrect rigging of mixture control linkage	Adjust in accordance with the airframe manufacturer's instructions.	Airframe Maintenance Manual
	Mixture control lever not hitting stop or has spring back.	1. Disconnect mixture control linkage from mixture control lever on carburetor. 2. Confirm condition is carburetor related. 3. Remove carburetor from service for repair.	
Engine will not idle unless the boost pump is on	Low Fuel Pressure	Replace fuel pump or fuel pressure regulator.	Engine Maintenance Manual
	Very Lean Idle Mixture	1. Enrich the idle mixture per instructions in the section "Idle Speed Mixture Adjustment" in Chapter 72-00. 2. Readjust idle speed.	72-00
	Pressure too low at idle speed (engine could also lose fuel pressure as the aircraft climbs)	Look for loose fuel fitting. Tighten loose fuel fitting.	
	Fuel pressure is set too high	Adjust engine fuel pump	Engine Maintenance Manual
	Fuel vaporizing in lines	Follow instructions in engine manual.	Engine Maintenance Manual
	Broken fuel pump drive	Replace the fuel pump in accordance with airframe manufacturer's instructions.	Engine/Airframe Maintenance Manual(s)
Low Fuel Pressure in the carburetor	Wrong fuel pressure regulator settings	Make sure the fuel pressure regulator is operating correctly.	Engine Maintenance Manual

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Table 2
Fault Isolation (Contd.)

Problem	Cause	Corrective Action	Additional Ref.
Low Fuel Flow	Dirty fuel filter or strainer	1. Remove and replace fuel filter. 2. Remove, inspect and clean as required fuel inlet strainer on carburetor.	Engine Maintenance Manual
Low Power and Uneven Running	Improper fuel	Fill tank with fuel of recommended grade.	Engine/Airframe Maintenance Manual(s)
	Leaks in induction system	Tighten all connections. Replace defective parts.	Engine/Airframe Maintenance Manual(s)
	Mixture too lean; indicated by overheating or backfiring.	1. Check fuel lines for dirt or other restrictions. 2. If necessary, remove carburetor from service for repair by authorized personnel.	Engine Maintenance Manual
	Mixture too rich indicated by sluggish operation, red exhaust flame at night. Extreme cases indicated by black smoke from exhaust.	1. Verify condition not being caused by carburetor flooding (See Flooded Engine) 2. Verify rich condition by manually leaning mixture to confirm leaner setting removes fault. 3. Remove carburetor from service for repair by authorized personnel.	
Engine will not turn static rpm or will not develop rated rpm	Decreased air flow in the air induction system	1. Examine the system and remove all blockages. 2. Make sure that the airbox is installed in accordance with the airframe manufacturer's specifications.	Airframe Maintenance Manual
	Throttle lever is incorrectly adjusted	Adjust in accordance with the airframe manufacturer's instructions. Adjust lever for full travel.	Airframe Maintenance Manual
	Air filter dirty	Replace air filter in accordance with airframe manufacturer’s instructions.	Airframe Maintenance Manual
	Too much air dropped through a new air filter. Defective air filter	1. Put the engine on test stand, in a dust-free area. 2. Remove the air filter. 3. Operate the engine to full throttle. 4. If the engine operates at full rpm, replace the air filter with a new air filter.	Engine Maintenance Manual
	Incorrect fuel flow	Look for blocked fuel filters.	
	Blockage or leak in air inlet or manifold.	1. Make sure that the air filters are clean. 2. Examine the induction system for breaks in the ducts. Breaks can let foreign material or heated air enter the induction system. 3. Tighten all loose connections and replace gaskets as necessary. 4. Repair or replace defective parts as necessary.	Engine Maintenance Manual
	Incorrect type of fuel	1. Replace fuel with correct fuel. 2. Also refer to "Incorrect Fuel or Fuel Contamination" in Chapter 05-50.	Latest Revision of Lycoming S.I. 1070
	Exhaust muffler internal baffles broken and blocking exhaust outlet	Remove muffler for thorough inspection in accordance with the applicable manual(s).	Engine/Airframe Maintenance Manual(s)
	Carburetor Hear door not rigged properly	Rig so door goes from full open to full closed.	Airframe Maintenance Manual

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Table 2 Fault Isolation (Contd.)			
Problem	**Cause**	**Corrective Action**	**Additional Ref.**
Engine surges	Cause not typically associated with carb.	See Engine Manual	Engine Maintenance Manual
High CHT or High Oil Temperature	Insufficient air cooling	Check air inlet and outlet for deformation or obstruction. Correct as necessary.	Airframe Maintenance Manual
	Fuel Lines with incorrect diameter installed	Verify proper fuel lines and sizes are installed.	Engine Maintenance Manual
	Engine is operating excessively lean	1. Refer to Engine Manual for minimum fuel flows for various power settings and never lean below minimum fuel flows. 2. Examine the combustion chamber for carbon deposits. The absence of carbon deposits is evidence of operating the engine too lean. 3. If confirmed that carburetor is running lean and no other causes can be found, remove from service for repair.	Engine Maintenance Manual
	Mixture control is incorrectly installed	Make sure that full travel of the cockpit mixture control lever is calibrated to the correct FULL RICH and IDLE CUT-OFF stops.	Airframe Maintenance Manual
Turbocharger (when applicable - see below)			
Excessive noise or vibration	Leak in engine intake or exhaust manifold	Tighten loose connections or replace manifold gaskets as necessary.	Engine Maintenance Manual
Engine will not deliver rated power	Clogged manifold system	Clear all ducting.	Engine Maintenance Manual
	Leak in engine intake or exhaust	Tighten loose connections or replace manifold gaskets as necessary.	Engine Maintenance Manual
	Linkage between wastegate and carburetor out of adjustment (when applicable)	Readjust as described in Engine Maintenance Manual	Engine Maintenance Manual
	Exhaust bypass bleed bolt improperly adjusted (when applicable)	Readjust as described in Engine Maintenance Manual	Engine Maintenance Manual

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71-60 – AIR INTAKE

1. Refer to the applicable section of the Aircraft Maintenance Manual for Airbox and Carburetor Heat connection details and maintenance.

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72-00 – ENGINE

1. Idle Speed and Mixture Adjustment:

   A. Start the engine and warm up in accordance with the Engine and Airframe Maintenance Manuals. Prevailing winds can affect the load of the propeller and the resulting engine RPM. Therefore, AVStar recommends setting the Idle Speed and Mixture with the aircraft in a crosswind orientation.

   B. Mag-Drop checks should be made in accordance with the applicable Engine Service Documents, refer to Lycoming Service Instruction 1132. Once satisfactory, proceed with idle adjustment.

   C. Set the Throttle Stop Screw, sometimes referred to the Idle Speed screw, so that the engine idles at the airframe manufacturer's recommended idling speed with a closed throttle.

   D. Once the idling speed has stabilized, move the cockpit mixture control lever with a smooth and steady motion toward the Idle Cut-Off position and observe the tachometer for any change during the leaning process. Caution must be exercised to return the mixture control to Full Rich before the RPM drops to a point where the engine cuts out. An increase of more than 50 RPM while leaning out indicates an excessively rich idle mixture. An immediate decrease in RPM (if not preceded by a momentary increase) indicates the idle mixture is too lean. A rise of approximately 25-50 RPM is considered satisfactory.

   E. Should the Idle Mixture require adjustment after performing the previous steps, adjust the idle mixture needle in the direction required. Clockwise will lean the mixture, while counter-clockwise will richen the mixture.

   F. Anytime an adjustment is made, the engine should be run up to approximately 2000 RPM to clear the engine. Upon returning to idle, it may be necessary to readjust the Idle Speed prior to performing the next mixture rise check.

   G. The procedure described above targets an idle mixture that will obtain maximum RPM with minimum manifold pressure. Whenever this check is performed, allowance and consideration should be made for the effect of weather and altitude conditions upon idling adjustment.

   H. Idle speed and mixture adjustments should not require frequent attention, aside from cases of large variations in ambient temperature or altitude of operation. Frequent idle adjustments may indicate or mask another issue, which may or may not be fuel system related.

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73-10 – ENGINE FUEL SYSTEM

⚠WARNING: DO NOT SMOKE OR HAVE AN OPEN FLAME OR ANY DEVICE THAT CAN MAKE SPARKS. SMOKING, FLAMES, OR SPARKS CAN CAUSE FUEL, OR OTHER FLAMMABLE TEST FLUIDS, IGNITION WHICH CAN CAUSE SERIOUS BURNS, INJURY OR DEATH.

NOTICE: If this fuel system removal or installation is completed with the engine installed in the airframe, refer to the airframe manufacturer's instructions for shutting off the fuel and grounding the aircraft.

1. Carburetor Removal Prerequisites:
   A. Shut off the fuel supply to the carburetor in accordance with the appropriate maintenance practice.
   B. Make an appropriate entry into the logbook indicating the reason for removal, and the applicable number of hours on the fuel system.
   C. As necessary, disconnect the throttle and mixture control attaching hardware from their respective levers of the carburetor in accordance with the Airframe's Maintenance Manual. Inspect for any signs of abnormal or excessive wear and correct those issues prior to reinstalling the fuel system.
   D. As necessary, remove the applicable intake components attached to the carburetor in accordance with the Airframe's Maintenance Manual. AVStar recommends discarding any mating gasket and installing a new gasket upon reinstallation. Should the carburetor be removed for maintenance by an outside repair facility, any applicable threaded studs installed on the carburetor should be removed. These components are part of the airframe installation and will NOT be reinstalled as they are not applicable to the parts list of the carburetor. Inspect for any signs of debris or other particulate contamination and correct those issues prior to reinstalling the fuel system.
2. Carburetor Removal Procedure:
   A. Put a fuel collection container under the drain plug of the carburetor. Remove the safety wire from the drain plug. Loosen and remove the drain plug from the carburetor. Once complete, inspect the drained fuel for any signs of debris or other contamination. Further inspection may be required if any FOD is observed in the fuel. Reinstall the drain plug finger tight.
   B. Put a fuel collection container under the fuel line connected to the carburetor. Using a suitable wrench, hold the inlet fitting of the carburetor stationary while disconnecting the fuel line.
   C. Depending upon the model carburetor to be removed, either four 1/4-20 or 5/16-18 nuts and their applicable washers and lock washers will need to be removed. The torque of these nuts is 96 in-lbs. (for 1/4-20) or 204 in-lbs. (for 5/16-18). AVStar

recommends discarding both the mating gasket and applicable lock washers where used. A new gasket and lock washers should be used upon reinstallation.

D. Should the carburetor be removed for maintenance by an outside repair facility, any applicable components not called out on the IPC of the respective model and part number of carburetor (refer to the applicable AFS-IPC document) should be removed. These components are part of the airframe or engine installation and will NOT be reinstalled as they are not applicable to the parts list of the carburetor. This includes but is not limited to additional inlet fittings or adapters, pressure fittings, and temperature probes. AVStar has no authorization to deem these components airworthy or qualified for return to service. Refer to the applicable maintenance manuals directing their installation for qualification of return to service.

3. Carburetor Installation Preparation Requirements:

A. Where applicable, verify the carburetor being installed is qualified for return to service by referring to the Return to Service documentation provided. Refer to Section 05-00 for further details as to the work performed on the carburetor.

B. If there is not absolute certainty that the part number of the carburetor being installed on the engine is applicable, consult the appropriate Engine Manufacturer or Airframe documentation for applicability.

C. Typically, a carburetor has been preserved with oil if is to be out of service for 30 days or more. If not certain as to the status of the carburetor being installed and if it has been preserved, AVStar recommends the following procedure as a best practice: Remove the fuel drain plug and drain preservative oil. Remove the fuel inlet strainer and clean in hydrocarbon solvent. Reinstall the fuel inlet strainer and drain plug. Consult the applicable AFS-IPC documentation for appropriate torque values. Safety wire drain plug as required.

D. Perform a visual inspection and functional check of the throttle and mixture control levers for ease of movement and complete travel from stop to stop.

E. Install any additional required components onto the carburetor as required. Refer to the appropriate Engine or Airframe Maintenance Manuals and Parts Catalogs for additional details.

F. Make an appropriate entry into the logbook indicating the reason for installation and the applicable status of the fuel system.

4. Carburetor Installation:

A. Install the carburetor in accordance with applicable Engine or Airframe Maintenance Manuals. Also refer to Lycoming Service Instruction 1484 for additional details.

B. Perform the applicable inspections, checks, warm-ups and ground runs required by the Engine or Airframe Maintenance Manuals. Prior to the first flight of the newly installed fuel system, perform the Visual Inspection listed in **05-20**.

⚠WARNING: CORRECT ALL LEAKS. IF FUEL LEAKS ARE NOT CORRECTED BEFORE FLIGHT, THE ENGINE CAN HAVE LOSS OF POWER OR ENGINE FAILURE CAN OCCUR.

5. Carburetor Storage and Preservation:

   A. Prior to shipment and/or storage of a carburetor, the interior of the unit should be coated with preservative. To do so, remove the Fuel Inlet and Drain Plug and drain any residual fuel. Pour clean, high quality SAE 10 oil into the Fuel Inlet to wash the interior of the carburetor. Drain the excess oil. The fine film of oil coating the internal parts will adequately preserve the carburetor.

   B. Replace the Fuel Inlet and Drain Plug. Safety wire the drain plug to the bowl.

   C. This procedure should be followed anytime the carburetor is anticipated to be inactive for 30 days or more.

   D. Repeat the process annually when in storage for more than one year.

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76-10 – ENGINE POWER CONTROL

1. Refer to the applicable section of the Aircraft Maintenance Manual for Throttle and Altitude Mixture Control connection details and maintenance.

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APPENDIX A

1. Carburetor Fuel Pressure Limitations:

Table A-3			
Engine Model	Fuel Pressure, psi		
	Max.	Desired	Min.
O-235 +	8	3	0.5
O-320 ~	8	3	0.5
O-360	8	N/A	0.5
HO-360-C1A	8	N/A	0.5
O-540	8	N/A	0.5
O-540-L3C5D	30	N/A	3
TO-360-A1A6D	8	N/A	0.5
TO-360-C1A6D	30	N/A	15
TO-360-F1A6D	30	N/A	15
TO-360-E1A6D	35	N/A	13

[+] For gravity feed systems, minimum fuel pressure is 7.5 inches of fuel differential pressure across the fuel inlet fitting for the O-235-K, -L, -M, -N series.

[~] For gravity feed systems, minimum fuel pressure is 15.0 inches of fuel differential pressure across the fuel inlet fitting on O-320-D2J.

2. Carburetor Model LVC-3-3PA & 5-4PA Features:

   A. Not all Carburetor Part Numbers will have all the features or components shown. Refer to the applicable IPC for further details. Models LVC-3-3PA & 5-4PA are very similar except for the throttle flange and bore size, as well as the accelerator pump used. Model LVC-3-3A does not use an accelerator pump.

   B. Features or Components Indicated by * serve as an inspection point for potential fuel leaks.

      (1) *Carburetor Pump Discharge Check Valve Assy should be inspected for any signs of a fuel leak or stain around the mating gasket.

      (2) *Fuel Inlet Connection should be inspected for any signs of a fuel leak or stain around the mating gasket and the installed fitting.

      (3) *The gasket at the nozzle assembly should be inspected for signs of a fuel leak or stain, which could indicate an improper float height setting or faulty float valve & seat.

      (4) *The base of the pump discharge tube should be inspected for any signs of a fuel leak or stain around the base of the tube. DO NOT ATTEMPT TO MOVE DISCHARGE TUBE WITH ANY TOOL OR BY HAND.

      (5) *Pump Stem Seal should be inspected for any signs of a fuel leak or stain around the pump stem.

      (6) *The base of the Pump Inlet Screen Housing should be inspected for any signs of a fuel leak or stain around the mating gasket.

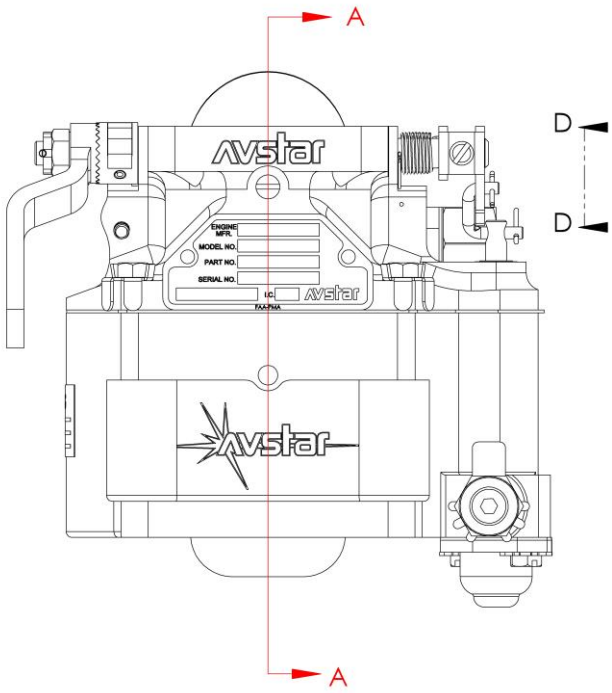

Figure A-1, LVC-3-3PA Front View

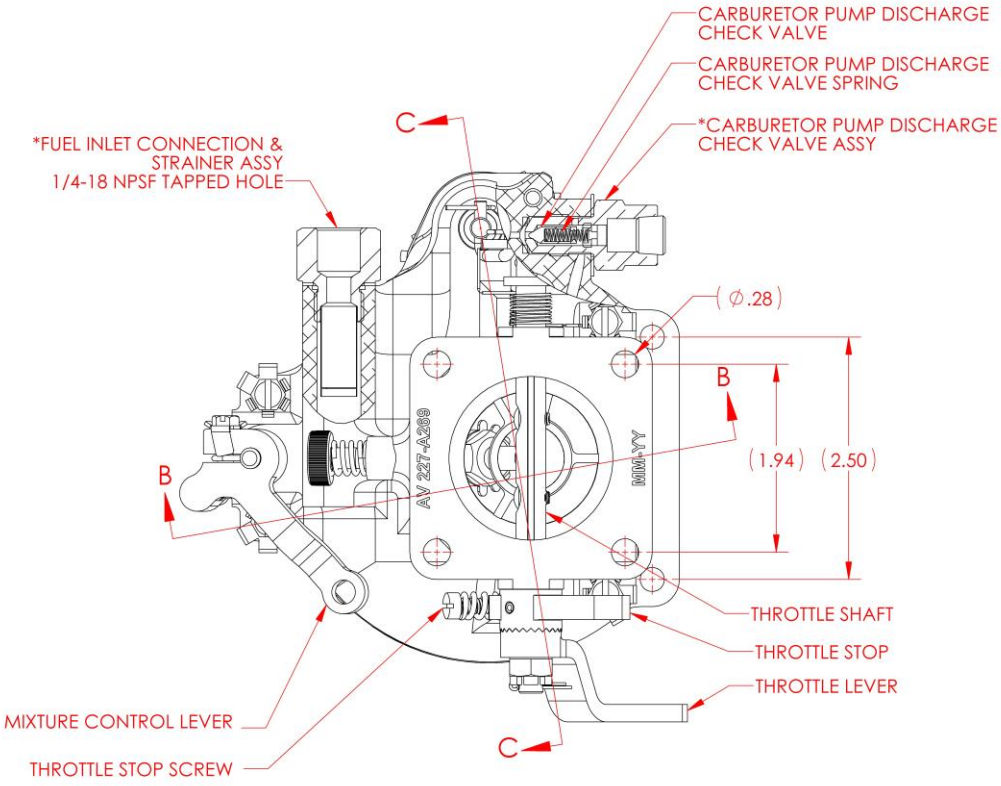

Figure A-2, LVC-3-3PA Top View

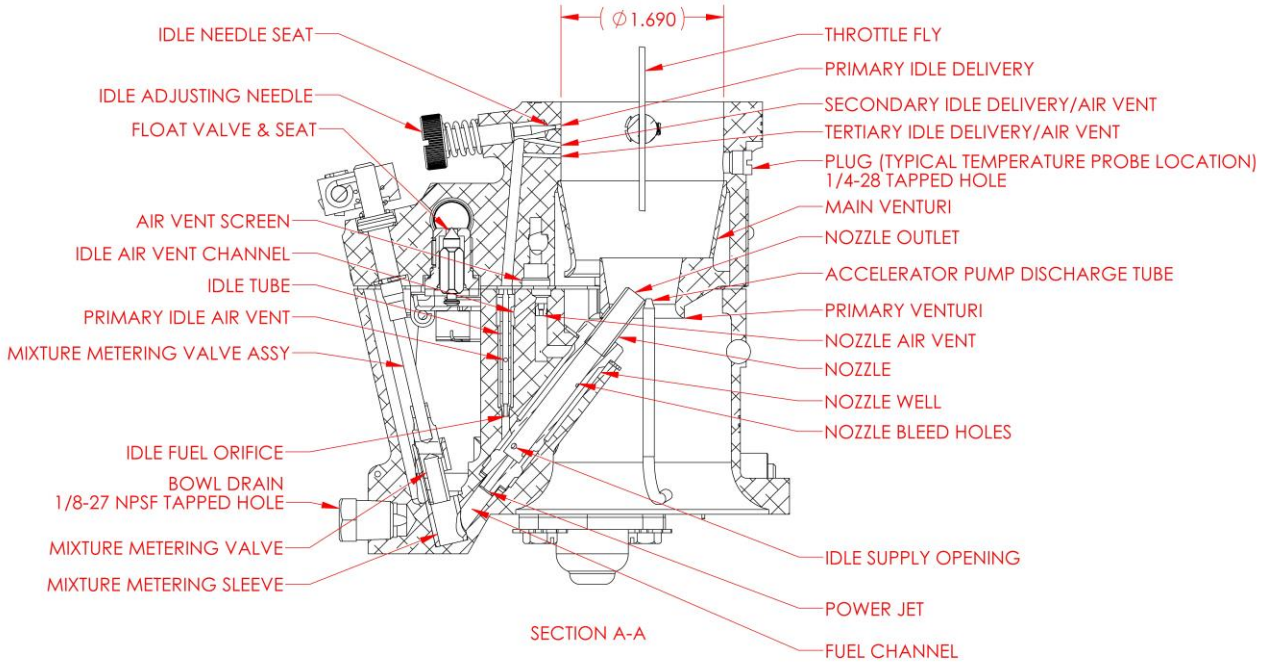

Figure A-3, LVC-3-3PA

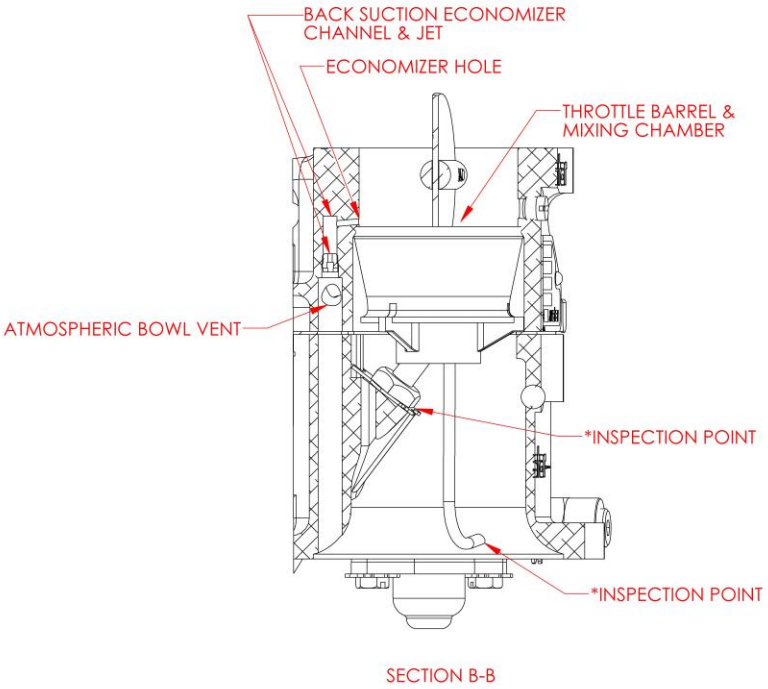

Figure A-4, LVC-3-3PA

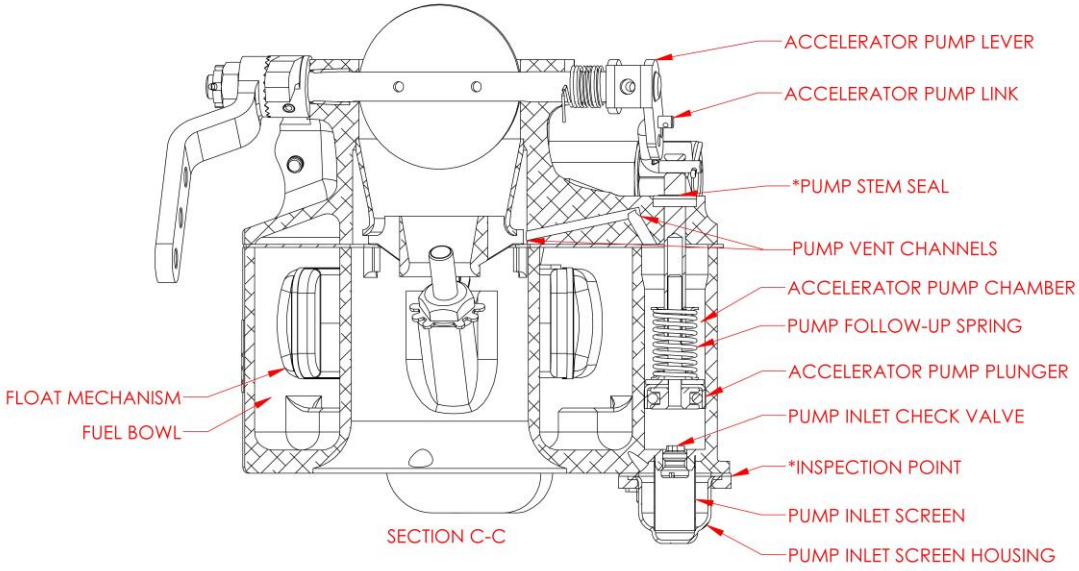

Figure A-5, LVC-3-3PA

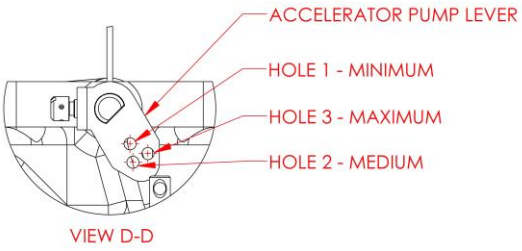

Figure A-6, LVC-3-3PA

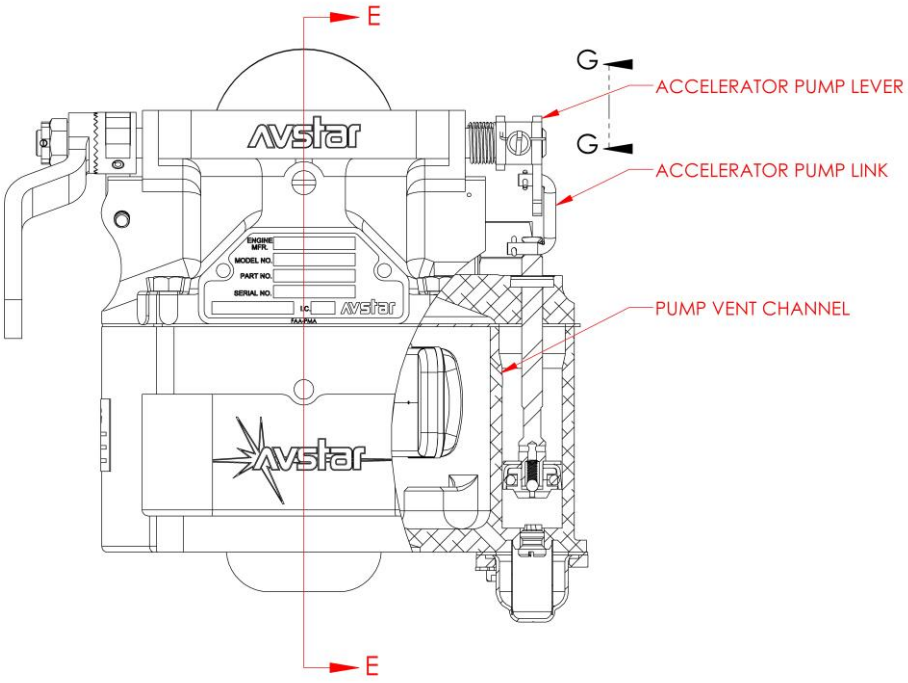

Figure A-7, LVC-5-4PA Front View

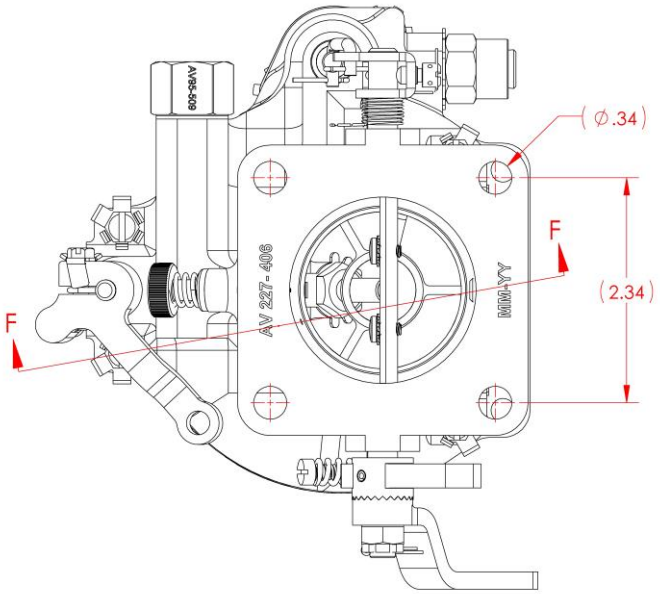

Figure A-8, LVC-5-4PA Top View

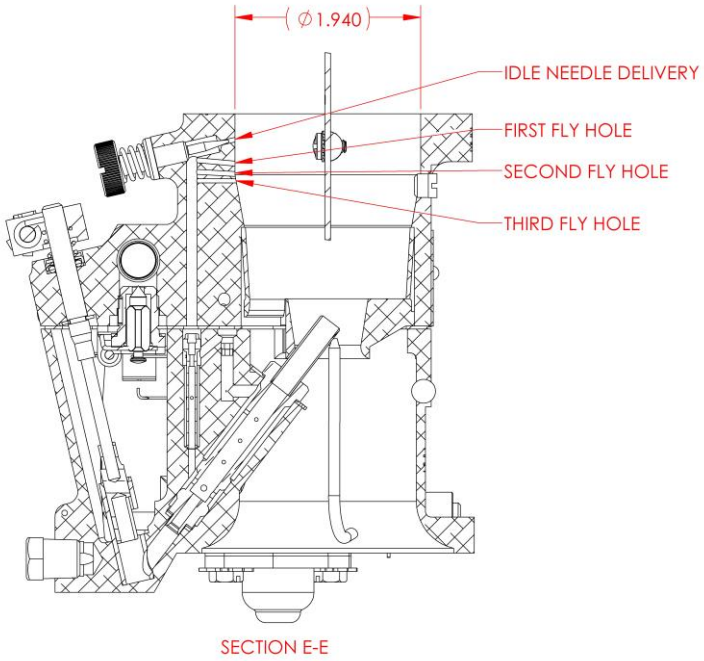

Figure A-9, LVC-5-4PA

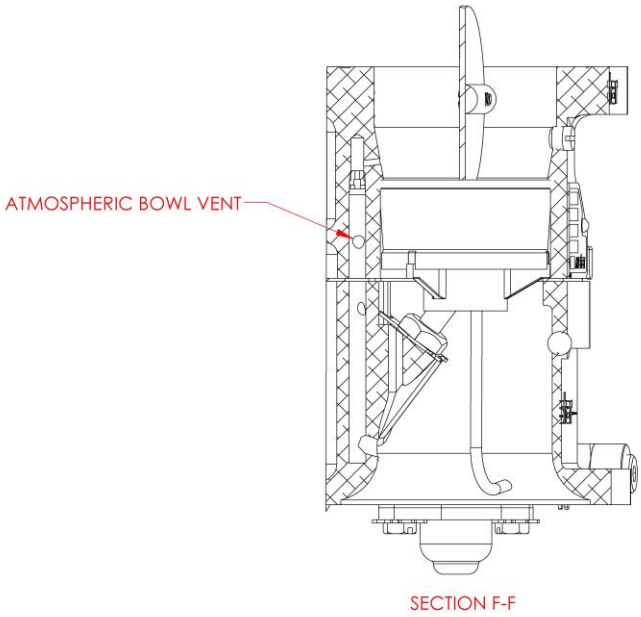

Figure A-10, LVC-5-4PA

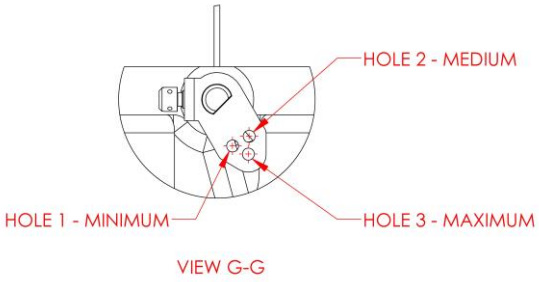

Figure A-11, LVC-5-4PA

3. Carburetor Model LVC-5-5BPA & 5-5PA Section Views & Model Features:

   A. Not all Carburetor Part Numbers will have all the features or components shown. Refer to the applicable IPC for further details. Models LVC-5-5BPA & 5-5PA are very similar except for the throttle bore size, bowl vent features, and mixture control valve. Other fittings, levers and plugs will vary by part number.

   B. Features or Components Indicated by * serve as an inspection point for potential fuel leaks.

      (1) *Fuel Inlet Connection should be inspected for any signs of a fuel leak or stain around the mating gasket and the installed fitting.

      (2) *The fuel pressure take-off plugs, or installed fitting(s) should be inspected for signs of a fuel leak or stain.

      (3) *The gasket at the nozzle assembly should be inspected for signs of a fuel leak or stain, which could indicate an improper float height setting or faulty float valve & seat.

      (4) *The bowl drain plug should be inspected for any signs of a fuel leak or stain and that the lockwire is in place and wired properly.

      (5) *The small permanent plug installed at the base of the carburetor bowl, as shown in View K-K, should be inspected for any signs of a fuel leak or stain.

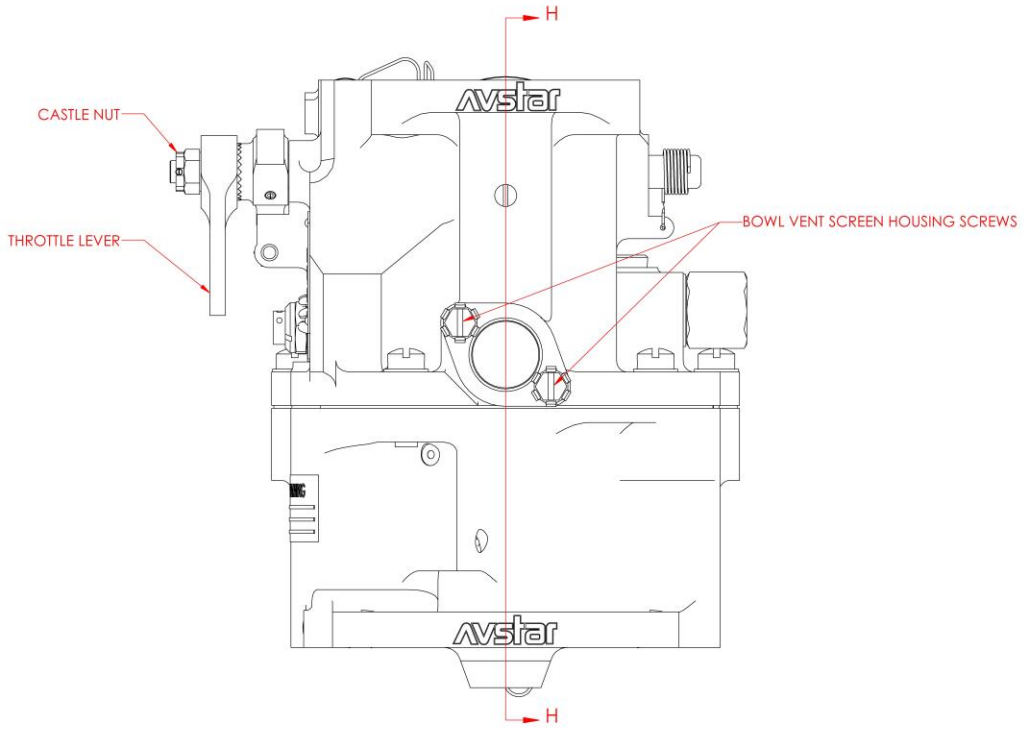

Figure A-12, LVC-5-5BPA Front View

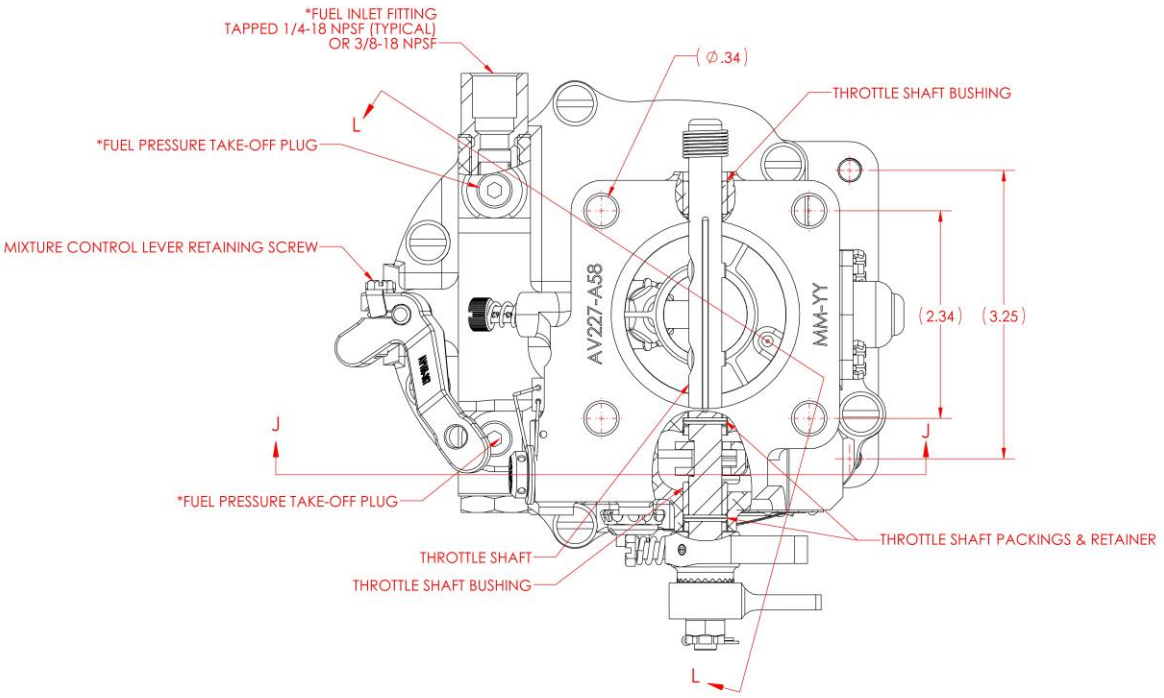

Figure A-13, LVC-5-5BPA Top View

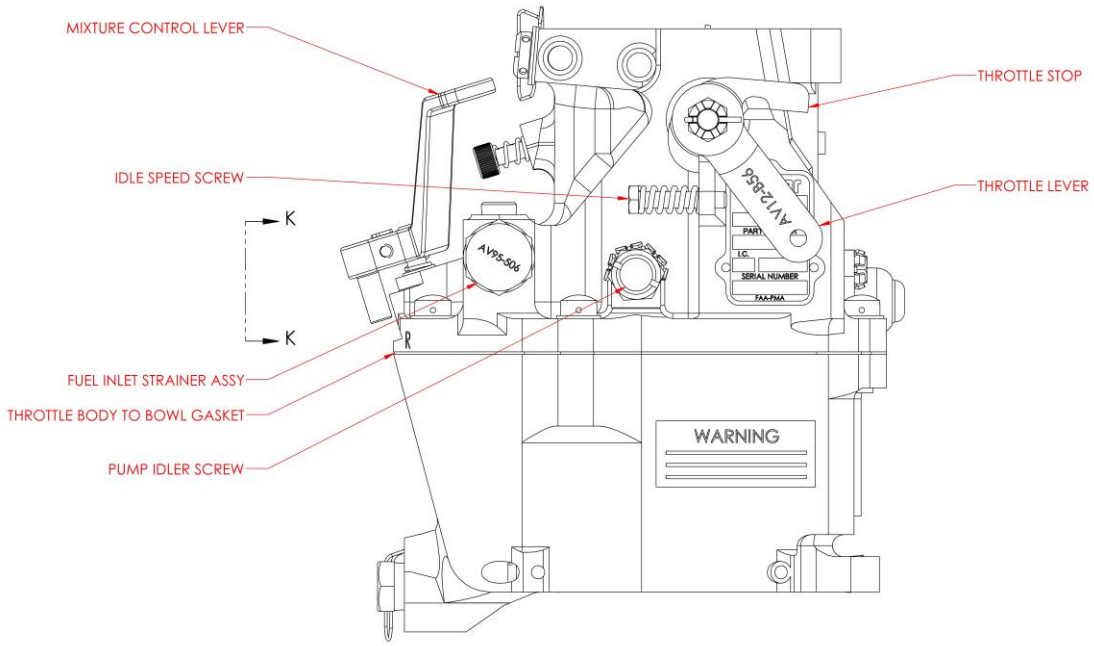

Figure A-14, LVC-5-5BPA Side View

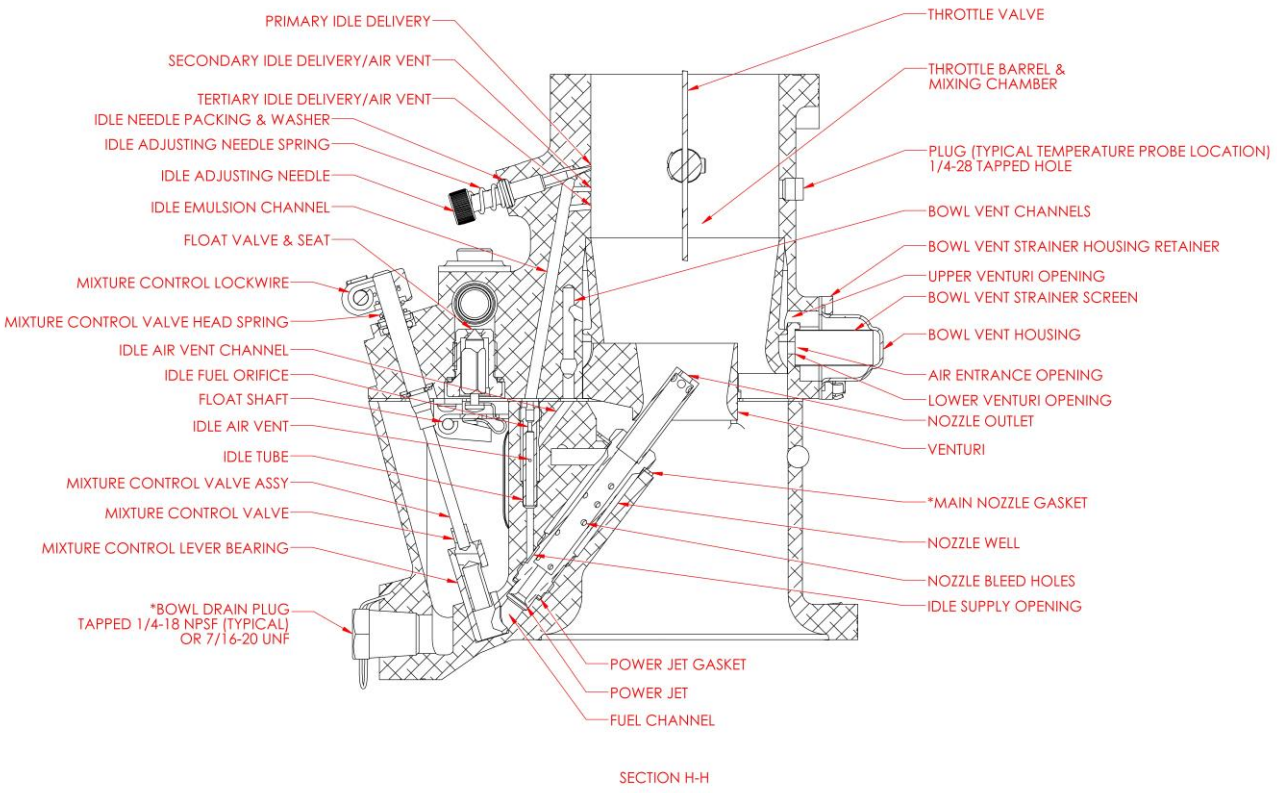

Figure A-15, LVC-5-5BPA

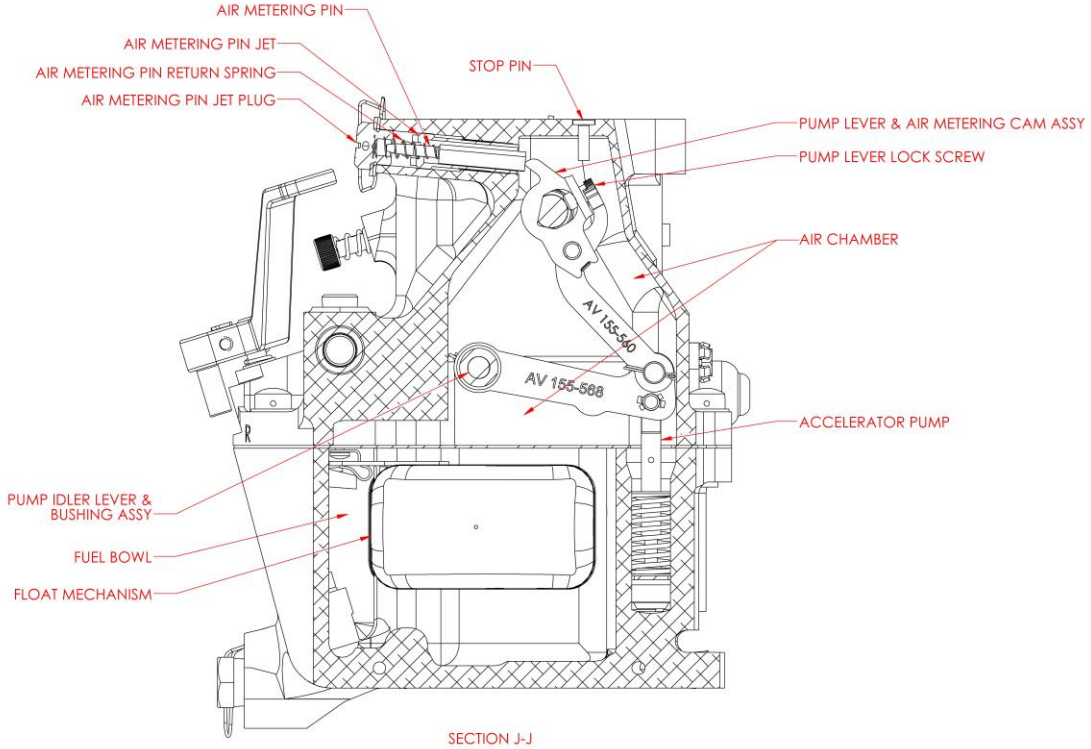

Figure A-16, LVC-5-5BPA

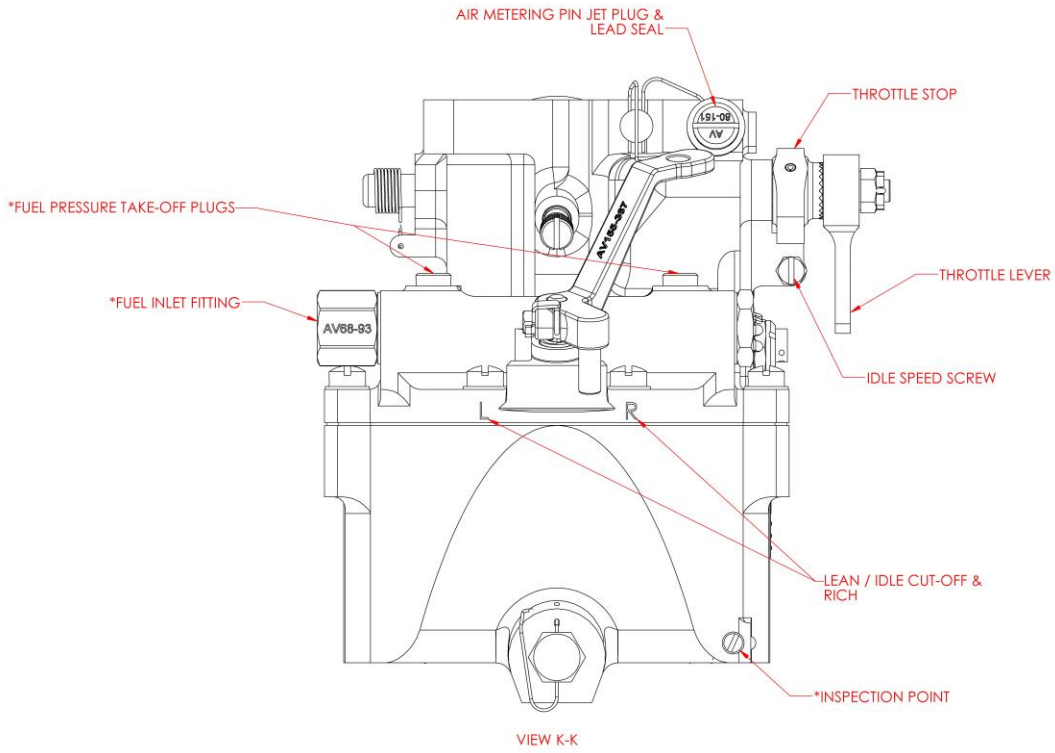

Figure A-17, LVC-5-5BPA

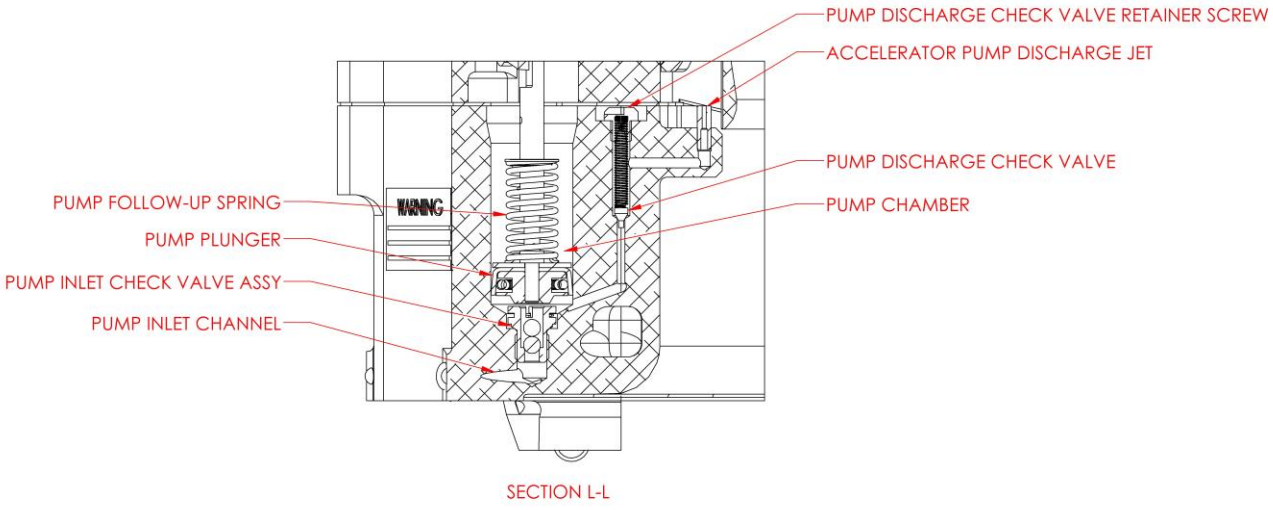

Figure A-18, LVC-5-5BPA

4. Carburetor Model LHC-6-6BPA & 6-6BA Section Views & Model Features:

   A. Not all Carburetor Part Numbers will have all the features or components shown. Refer to the applicable IPC for further details. Models LHC-6-6BPA & 6-6BA are very similar except for the use of an accelerator pump on the LHC-6-6BPA model. Other fittings, levers and plugs will vary by part number.

   B. Features or Components Indicated by * serve as an inspection point for potential fuel leaks.

      (1) *Fuel Inlet Connection should be inspected for any signs of a fuel leak or stain around the mating gasket and the installed fitting.

      (2) *All plugs installed on the Throttle Body & Cover should be inspected for signs of a fuel leak or stain.

      (3) *The bowl drain plug should be inspected for any signs of a fuel leak or stain and that the lockwire is in place and wired properly.

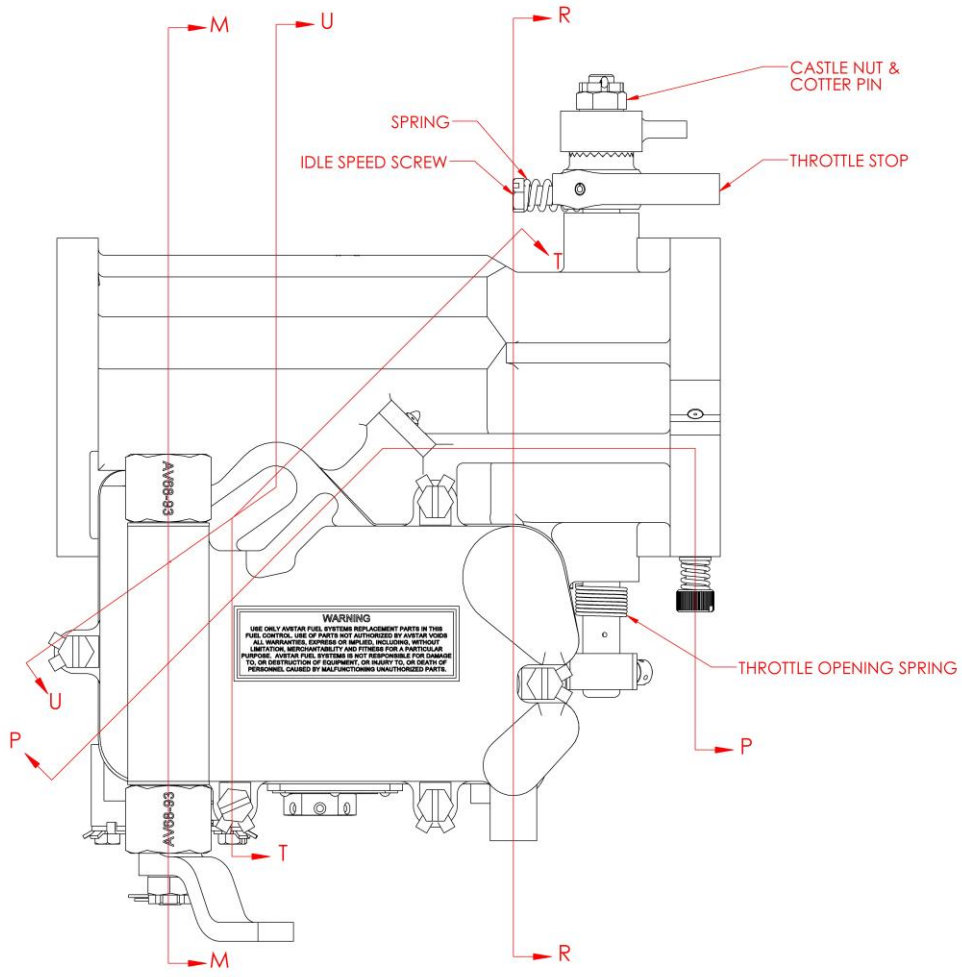

Figure A-19, LHC-6-6BPA Top View

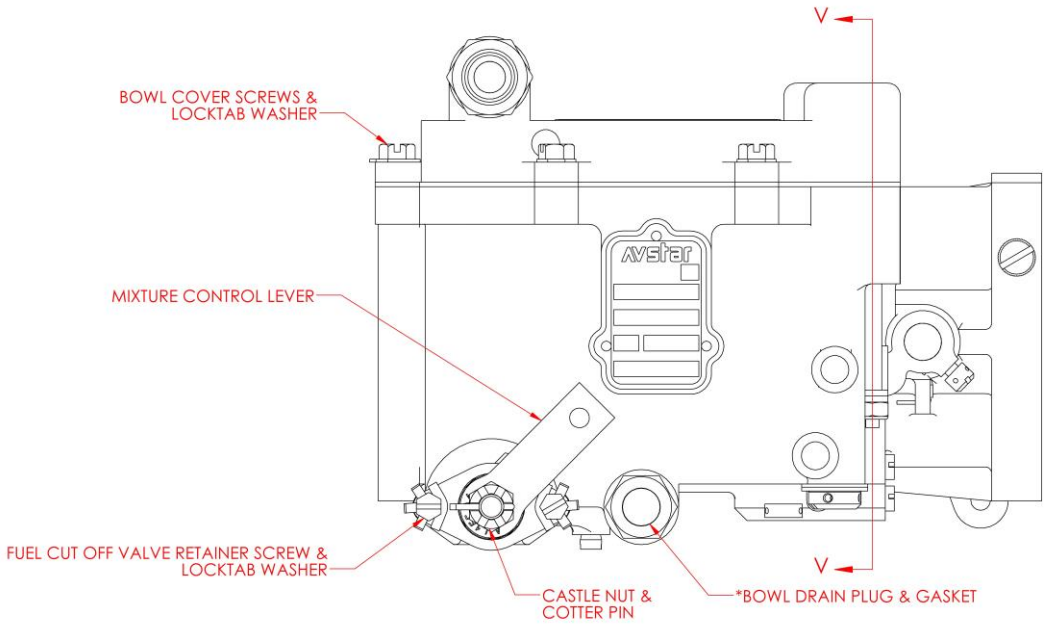

Figure A-20, LHC-6-6BPA Side View

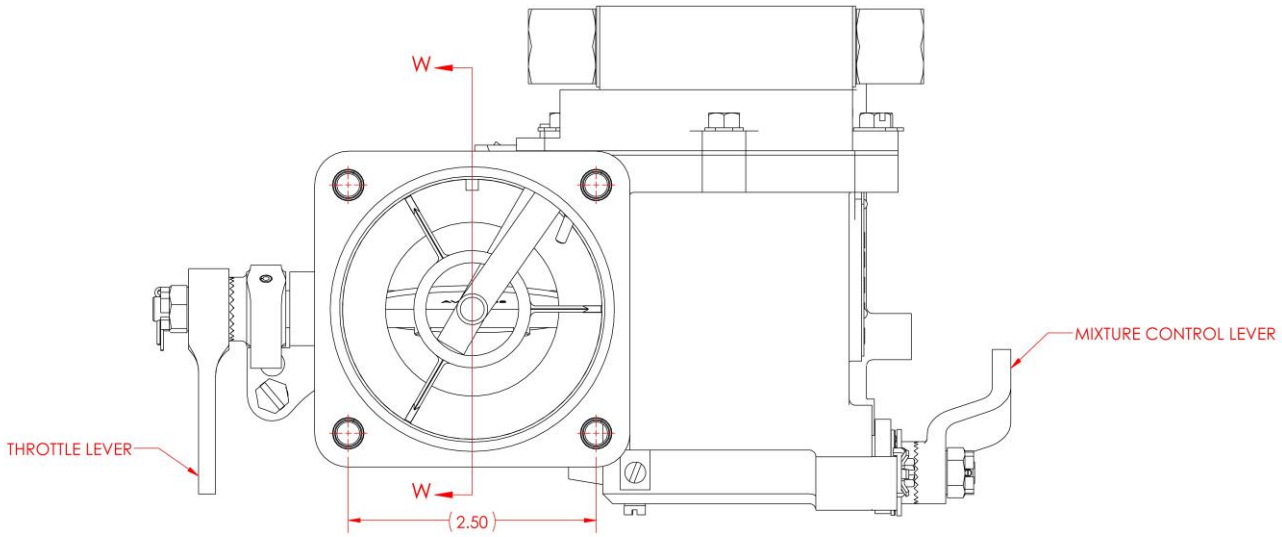

Figure A-21, LHC-6-6BPA End View

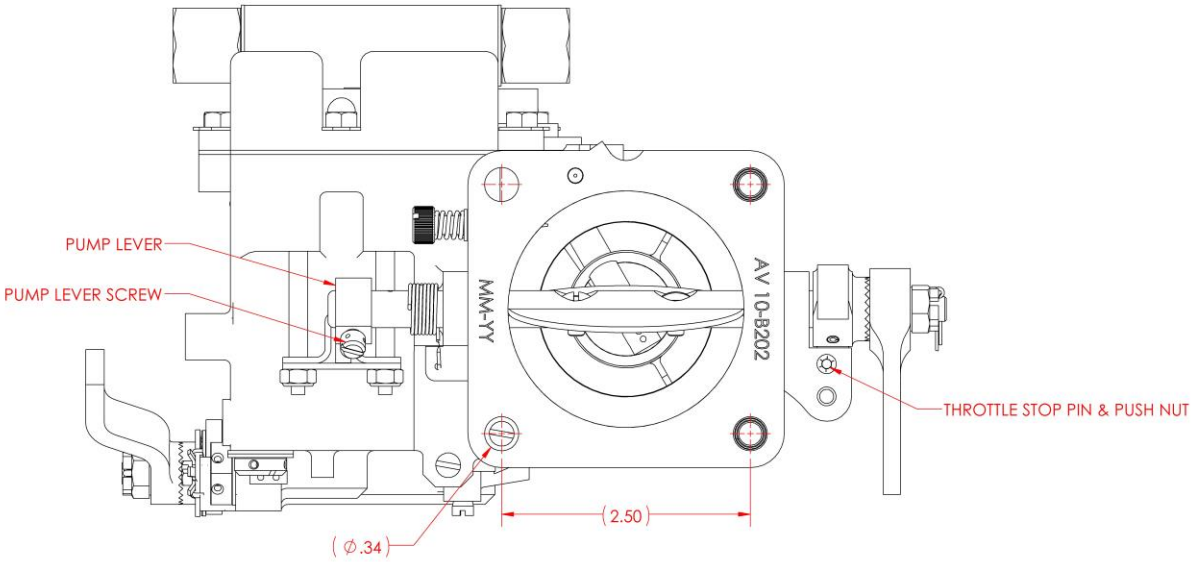

Figure A-22, LHC-6-6BPA End View

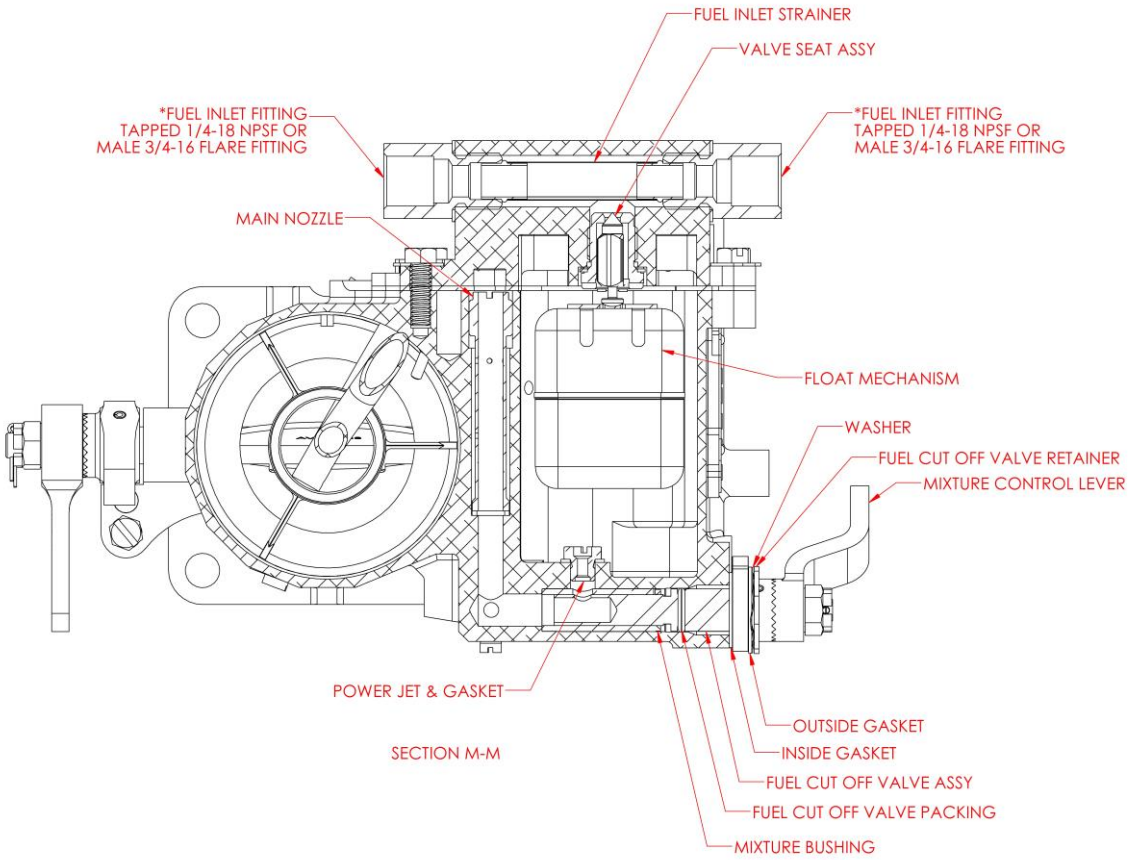

Figure A-23, LHC-6-6BPA

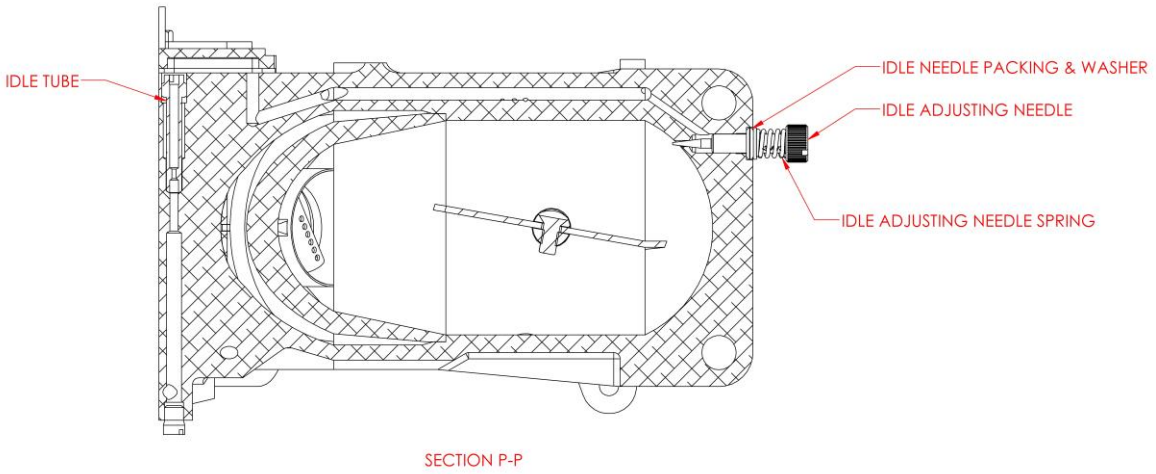

Figure A-24, LHC-6-6BPA

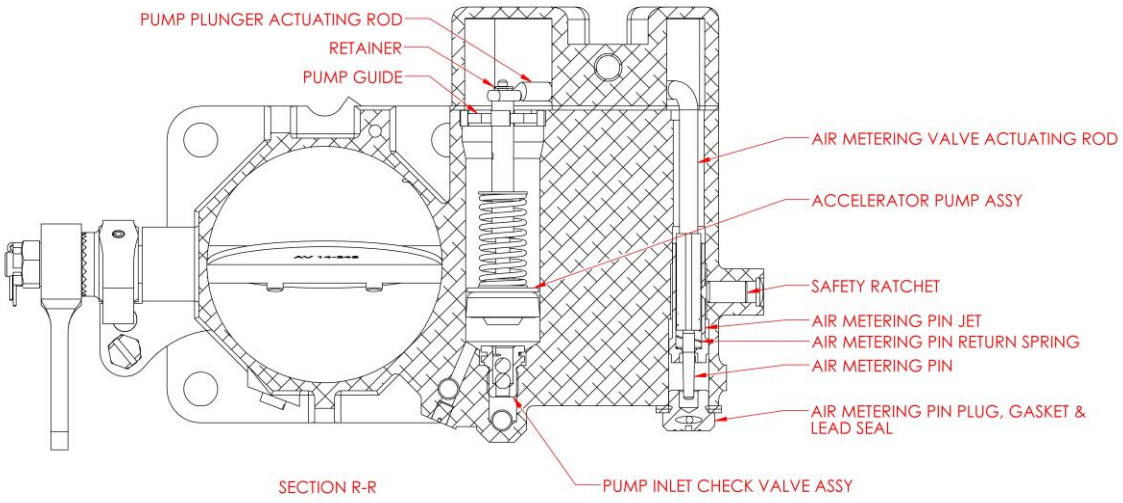

Figure A-25, LHC-6-6BPA

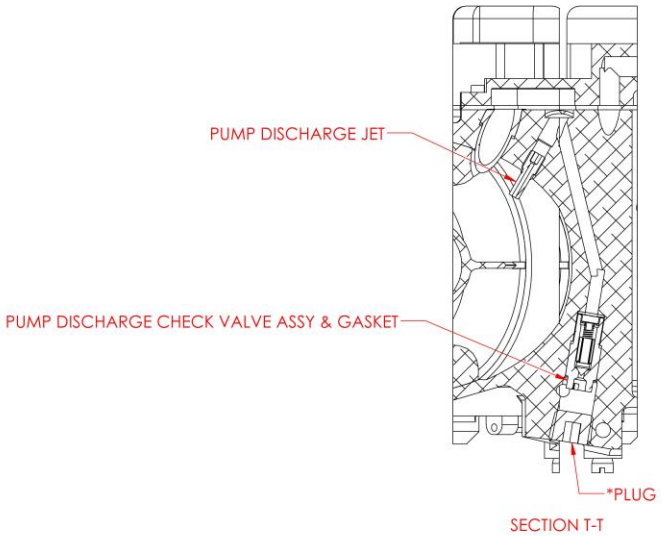

Figure A-26, LHC-6-6BPA

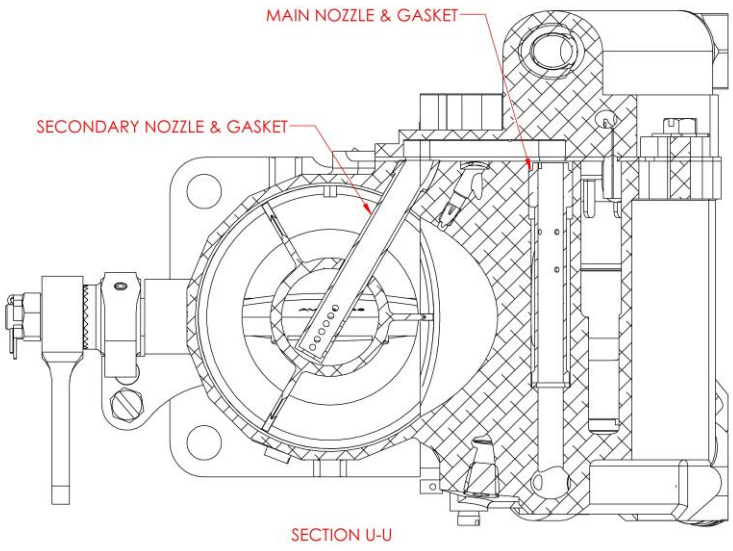

Figure A-27, LHC-6-6BPA

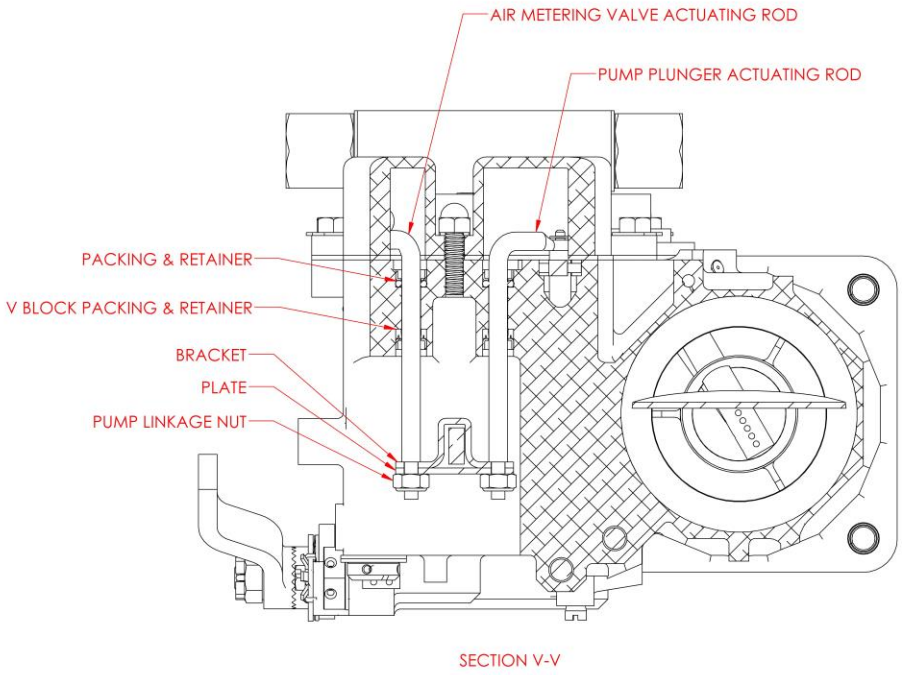

Figure A-28, LHC-6-6BPA

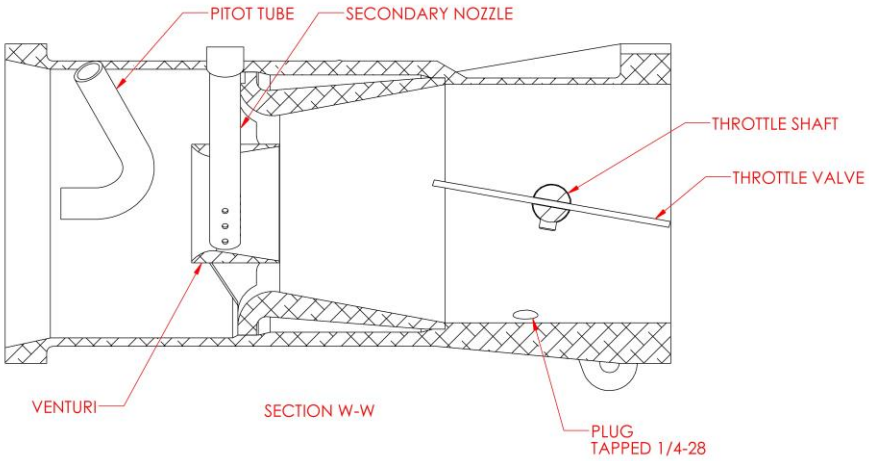

Figure A-29, LHC-6-6BPA