T.O. 6R1-3-5-33

# TECHNICAL MANUAL OVERHAUL

# INJECTION CARBURETOR

MODEL PS-5C

PARTS LIST NUMBERS

380223-2 thru -8

391318-4 thru -11

391629-3 thru -7

(BENDIX)



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# SECTION I

#### 1-1. GENERAL.

- 1-2. This handbook is published for the information and guidance of personnel responsible for the overhaul and testing of the Stromberg Model PS-5C Injection Carburetor, Parts List 391318-5, as used on the Continental O-470 engine. This carburetor is manufactured by the Bendix Products Division of the Bendix Aviation Corporation, South Bend 20, Indiana, U.S.A. The service procedures outlined in this handbook may be modified as convenient, to suit individual overhaul facilities as a means for expeditious and/or more economical handling. Any variations in this procedure, however, must be consistent with standard shop practices and must not detract from the overall efficiency and operation of the end item. Specified values, limits, test flow limits and dimensions must be strictly adhered to.
- 1-3. Sections I, II and III of this handbook contain overhaul and test instructions for the Stromberg Model PS-5C Injection Carburetor Parts List 391318. Overhaul and test instructions for additional models are provided in Section IV by the use of Difference Data Sheets. Any additional models included in Section IV are listed in Section IV.
- 1-4. Overhaul and test procedures for models included in Section IV are the same as the procedures given in Sections II and III, except for the specific differences noted by the applicable Difference Data Sheets.

#### 1-5. IDENTIFICATION.

- 1-6. All services will use the manufacturer's equipment designation: Stromberg Model PS-5C Injection Carburetor. Each new carburetor is identified with a specification plate (figure 1-2) attached to the throttle body. It identifies the carburetor manufacturer, unit serial number, model designation and parts list and issue numbers to which the unit was manufactured.
- a. Specification plates may be restamped or replaced whenever the carburetor is modified.

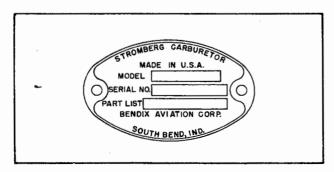


Figure 1-2. Specification Plate

#### 1-7. GENERAL DESCRIPTION.

- 1-8. The Stromberg Model PS-5C Injection Carburetor is a single barreled updraft unit that provides a closed fuel system from the engine fuel pump to the carburetor discharge nozzle. Its function is to meter fuel through a fixed jet to the engine in proportion to air flow to the engine, and offers such advantages as:
- a. The discharge nozzle is located downstream from the throttle valve. (Prevents ice formation in the carburetor due to fuel vaporization.)
- b. Assures positive fuel delivery regardless of aircraft attitude or altitude.

# 1-9. PRINCIPLES OF OPERATION.

1-10. The operation of the Stromberg Model PS-5C Injection Carburetor will be described by discussing the air and fuel sections separately. Refer to the schematic diagram (figure 1-3) for aid in tracing the various circuits of the unit.

## a. AIR SECTION.

- (1) Air enters the carburetor through the air intake, passes through the venturi tube, past the throttle valve and into the intake manifolds. The flow of air is controlled by a conventional butterfly type throttle valve. Air flowing through the venturi creates a suction at the throat of the venturi tube. This suction is transmitted through internal channels to chamber "B" of the regulator, and is known as "metering suction". It is also exposed to the low pressure side of the control diaphragms of the discharge nozzle, the idle needle and enrichment valve, and to the needle valve of the manual mixture control.
- (2) Intake air also enters the annular space between the outside diameter of the venturi tube and the flange of the carburetor and flows through internal channels to chamber "A" of the regulator and to the discharge nozzle. It is also exposed to the high pressure side of the manual mixture control needle valve.
- (3) Since the "intake air pressure" in chamber "A" is greater than the "metering suction" in chamber "B", a pressure differential is created acting upon the air diaphragm separating the two chambers. This differential force acting on the inner (air) diaphragm is termed "air metering force", which increases and decreases with air flow through the carburetor. Further control of the "air metering force" is provided by the manual mixture control.
  - (4) Movement of the air diaphragm in response

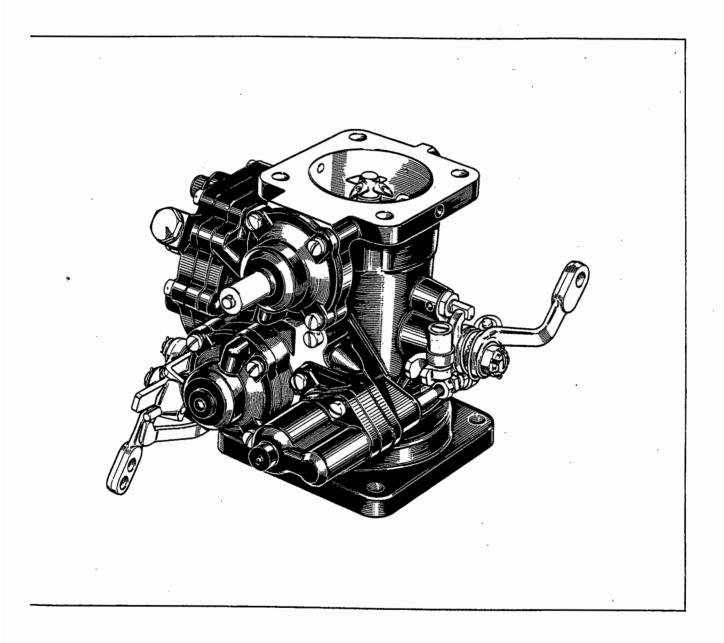


Figure 1 - PS-5C Injection Carburetor Assembly External View

# SECTION II OVERHAUL INSTRUCTIONS

#### 2-1. SPECIAL TOOLS.

Figure Number	Part Number	Nomenclature	USAF Stock Number
2-1A	T25138	Wrench - Staking	9DBP-T25138
2-1B	T25260	Socket - Screwdriver	9DBP-T25260
2-5	T25941	Gauge - Enrichment valve adjusting	9DBP-T25941
2-1C	T26823	Reamer - Throttle shaft bushing	9DBP-T26823

#### 2-2. GENERAL.

- 2-3. Overhaul of the Stromberg Model PS-5C Injection Carburetor must be performed in a clean area, free of dust, grit and moisture. Special tools must be used where necessary to prevent damage to parts during the overhaul or service operations.
- 2-4. All serviceable parts of the carburetor are illustrated in the exploded view drawing (figure 2-1), and are identified by numerical index numbers. Proper disassembly sequence can be accomplished by removing parts in ascending numerical order. Refer to the text for instructions on special tools and equipment.
- 2-5. Remove body studs and threaded, pressed or pinned bushings only if qualified inspection indicates a need for replacement. Before removing studs, note depth to which they are installed. Install replacement studs to the same depth using the correct oversize to maintain the required torque.
- 2-6. Replace all diaphragms, gaskets, packings and seals at every overhaul. Keep replacement diaphragms, packings and seals wrapped in air- and oilresistant paper until actual installation. To facilitate the installation of rubber parts, apply a very light film of clean oil, Federal Specification MIL-O-6081, Grade 1010, to the rubber just before installation.

#### NOTE

Do not apply air pressure to an assembled carburetor as damage to the diaphragms may result.

## 2-7. DISASSEMBLY.

- a. Remove all external lockwires and seals, and disassemble the carburetor in numerical order as indicated in figure 2-1.
- b. Remove the idle control rod adjusting nut (38) to permit the removal of the idle control rod and arm (39). Use an awl or similar pointed tool to remove the idle seat lockwasher (49) before removing the idle needle seat (50) using care not to damage the body casting.
- c. Remove the discharge diaphragm adjusting screw (52) before removing the cover (53) to release the tension on the discharge diaphragm spring (57).
- d. Use metering jet screwdriver T25260 to remove the main metering jet (88).
- e. Use care in removing regulator needle valve (97) and valve seat (96) as they are a matched assembly.

#### f. (Deleted)

- g. Place an identifying mark on the throttle valve (128) so it will be replaced in its original position.
- h. Use care in removing throttle stop lever (137). If a suitable puller is not available it will be necessary to tap the exposed end of the throttle shaft to drive the expansion plug (143) from the main body. The throttle shaft is made of a soft material and will distort easily.

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#### SECTION II

## OVERHAUL INSTRUCTIONS

#### 2-1. SPECIAL TOOLS.

Part Number	Nomenclature	Figure Number	U.S.A.F. Stock Number
T25138	Staking Tool - Valve screw	2-1	5120-142-3949
T25260	Screwdriver - Metering jet	2-2	5120-398-4321
T25941	Assembly Gage - Enrichment valve screw adjusting	2-3	5 <b>22</b> 0
T26823	Reamer, Finish - Throttle shaft bushing	2-4	5120
T27247	Adapter - Bleeder tube drain	2-5	4920
T27277	Arbor Gage - Throttle shaft bushing	2-6	5220
T27278	Mandrel - Throttle shaft bushing	2-7	5120
*T27351	Pliers - Coiloc seal	2-8	5120

<sup>\*</sup>Tool to have the same depot insignia on each land of the crimping die. Do not exceed three letters in this insignia. Be certain to specify insignia desired with order. Procure this tool from:

Bendix Products Division South Bend 20, Indiana

or

E.J. Brooks Company Newark, New Jersey

**Commercially Procurable Special Tools				
	Heli-Coil Part No.	Nomenclature		
	528-4N	Inserting Tool		
•	1195-4	Tank Break-Off Tool		
	1227-6	Extracting Tool		

## \*\*These tools are procurable from the Heli-Coil Corporation, Danbury, Conn.

#### 2-2. GENERAL.

2-3. Overhaul of the Model PS-5C Injection Carburetor must be performed in a clean location, free from dust, grit and moisture. Special tools shall be used where necessary when performing service and overhaul operations. All serviceable parts of the carburetor are illustrated in the exploded view drawing of the carburetor assembly, and are identified by index numbers and names. Certain repair parts may be available in the form of kits.

NOTE

Presence of a new part in the applicable repair kit eliminates the necessity of cleaning, inspection, or rework of the equivalent used part removed from the assembly being repaired. Removed parts in this category shall be administratively condemned. Removed parts not supplied in applicable kit shall be handled in accordance with the following instructions.

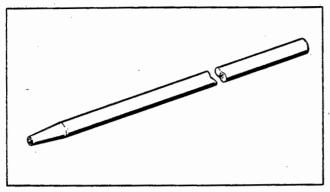


Figure 2-1. T25138 Valve Screw Staking Tool

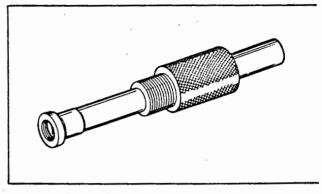


Figure 2-5. T27247 Bleeder Tube Drain Adapter

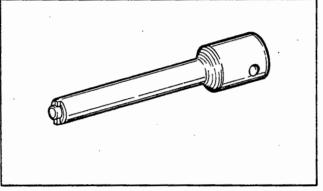


Figure 2-2. T25260 Metering Jet Screwdriver

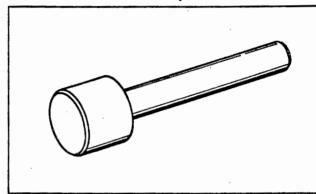


Figure 2-6. T27277 Throttle Shaft Bushing Arbor Gage

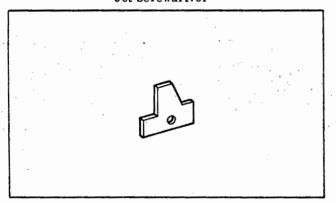


Figure 2-3. T25941 Enrichment Valve Screw Adjusting Assembly Gage

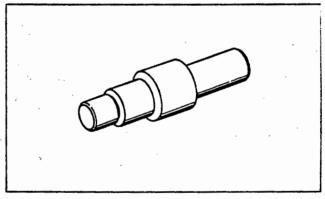


Figure 2-7. T27278 Throttle Shaft Bushing Mandrel

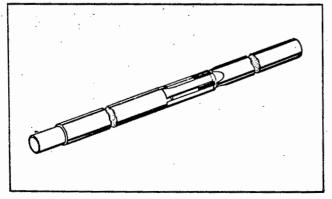


Figure 2-4. T26823 Throttle Shaft Bushing Finish Reamer

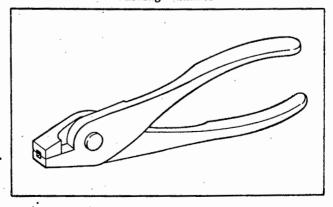


Figure 2-8. T27351 Coiloc Seal Pliers

#### 2-4. GENERAL DISASSEMBLY.

- a. Do not pool major operational units or detail components of Model PS-5C Injection Carburetors being overhauled.
- b. Perform the disassembly in ascending numerical order as indicated in the applicable exploded view to prevent damaging parts by improper removal. Refer to the supplementary text for special mechanical techniques and instructions for use of special tools and equipment.
- c. Remove threaded, pressed or pinned bushings only if inspection indicates a need for replacement.

#### 2-5. GENERAL CLEANING.

- a. Cleaning of all parts can be accomplished as follows: Carry out the following five steps on all parts. If further cleaning is necessary, the procedure in paragraphs 2-6 through 2-11 may be followed:
- (1) Thoroughly degrease the part, using hydrocarbon solution (Stoddard Solvent) Federal Specification P-S-661, immersing the part for 12-15 minutes.
- (2) Immerse the part in carbon remover, conforming to MIL-C-5546A or Specification USAF 20043, for 30 minutes, at 57.2°C (135°F) to 62.8°C (145°F).
- (3) Remove the part from carbon remover and rinse thoroughly in water at a temperature of 71.1°C (160°F) to 82.2°C (180°F).
- (4) Dry thoroughly with clean dry compressed air, paying particular attention to all recesses and internal passages.
  - (5) Inspect parts for corrosion.

# CAUTION

Exercise extreme caution when corrosion and/or other deposits are found on the surface of the venturi throat (73, figure 2-9) or venturi skirt (76, figure 2-9). If corrosion and/or deposits other than surface stains cannot be removed by immersing in carbontetrachloride (Federal Specification O-C-141A), the part must be replaced. Corrosion and/or other deposits removed by mechanical methods may remove enough metal to affect calibration. Fumes from carbontetrachloride are highly toxic. Perform all cleaning with this fluid in a well ventilated area.

# 2-6. CLEANING PROCEDURE FOR ALUMINUM PARTS THAT ARE NOT CORRODED.

- 2-7. Having carried out all the steps outlined in paragraph 2-5, proceed with the following:
- a. Use No. 600 Wet or Dry Paper to remove stubborn deposits. The paper should be used wet.

- b. Hot water rinse (spray or dip optional).
- c. Dry thoroughly with clean dry compressed paying particular attention to all recesses and ternal passages.
- d. Allow surface to further dry at room tempe ture or oven dry 10 minutes at 65.6°C (150°F 121.1°C (250°F).
- 2-8. CLEANING PROCEDURE FOR ALUMINUM PARTS THAT ARE CORRODED.
- 2-9. Having carried out all the steps outlined paragraph 2-5, proceed with the following:

# CAUTION

All bushings, pins or other non-aluminum parts must be removed from the part being cleaned prior to immersion. The complete part must have the anodic film restored either by electrolysis or by application of Alodine 1200.

a. Immerse the part in alkaline cleaner Form "T", or an equivalent alkaline cleaner inhibited agai attack on aluminum, for 10 to 15 minutes maintain at a temperature of 87.8°C (190°F) to 100°C (212° Formula "T" consists of the following ingredien

Sodium Phosphate Dibasic.				20 lb
Sodium Metasilicate				10 lb
Soap (Federal Specification				. 8 lb
P-S-598)	-			
Sodium Dichromate				. 2 lb
Water at 93.3°C (200°F) to			10	00 gal
100℃ (212°F)			,	_

- b. Rinse in hot water (spray or dip optiona
- c. Rinse in cold water (spray or dip optiona
- d. Immerse the part in a chromic-phosphoric ac solution for 5 to 10 minutes at 82.2°C (180°F) 93.3°C (200°F). This treatment will remove corrosi products, paint, and any previously applied anod coating.

## NOTE

The solution outlined in step d, above, shall contain 3.5 pints of 75 percent phosphoric acid and 1.75 pounds of chromic acid to 10 gallons of water.

- e. Rinse in cold water (spray or dip optional
- f. Rinse in hot water (spray or dip optional
- g. Use No. 600 Wet or Dry Paper on the corrode area. The paper should be used wet.
- h. Rinse in hot water (spray or dip optional

i. Dry thoroughly with clean dry compressed air, paying particular attention to all recesses and internal passages.

#### NOTE

Observe the caution following paragraph 2-5,a.

2-10. SPOT METHOD CORROSION REMOVAL FOR ALUMINUM PARTS. The following instructions apply to the spot method of corrosion removal from aluminum parts or bodies.

# CAUTION

All bushings and/or pressed pins must be suitably protected from the cleaning solution to prevent damage.

- a. Place the part or body to be cleaned in an oven or water bath and raise the temperature of the part to approximately 100°C (212°F).
- b. When the temperature of the part has reached the specified value, apply the alkaline cleaner specified in paragraph 2-9,a, to the corroded area. If an oven was used in step a, above, return the part to the oven and maintain temperature between 87.8°C (190°F) and 100°C (212°F); if a water bath was used, remove the part from the bath before applying cleaner and avoid drafts or areas which would cause a rapid loss of heat by the part. Allow the cleaner to remain on the area 10 to 15 minutes.
- c. Rinse the part thoroughly with hot water, either spray or bath.
- d. Restore part temperature to approximately 93.3°C (200°F) and apply the chromic-phosphoric acid cleaner as specified in paragraph 2-9,d, above, to the area to be cleaned. Maintain temperature of the part at 82.2°C (180°F) to 93.3°C (200°F) if possible. Allow the acid cleaner to remain on the area 5 to 10 minutes.
- e. Following the application of the acid cleaner rinse the part thoroughly twice. First, rinse the part in cold running water followed by a rinse in hot water. All corrosion deposits must have been removed; if deposits remain, repeat step d, above. Abrade the cleaned surface with No. 600 wet or dry paper (used wet) to assure complete removal of chemical film and provide a suitable surface for application of Alodine No. 1200 method of restoring protective film. Rinse the part with hot water following the abrasion procedure.

#### NOTE

Observe the caution following paragraph 2-5,a.

2-11. REMOVAL OF RUST DEPOSITS FROM STAIN-LESS STEEL PARTS. Clean all stainless steel parts displaying rust or other foreign deposits in accordance with the following instructions.

- a. Clean the parts by immersing in an alkaline cleaner as specified in paragraph 2-9,a. Allow the parts to remain in the solution 10 to 15 minutes while maintaining the temperature of the solution at 79.5°C (175°F) to 85°C (185°F). Rinse the parts thoroughly with warm water and dry with filtered compressed air.
- b. Immerse the parts in a cleaning solution consisting of 50 percent commercial muriatic acid and 3 percent inhibitor similar to "Acid Addition Agent" (manufactured by the Northwest Chemical Company, Detroit, Michigan) with water. Maintain the solution at room temperature and allow the parts to remain in the solution 10 to 45 seconds; excessive exposure to this solution may affect dimensional tolerance and must be avoided. Rinse parts thoroughly to remove all acid solution; dry with filtered compressed air.
- 2-12. GENERAL INSPECTION. Inspection must determine parts serviceability and repair or replacement requirements. Tolerance tables in this section, indicating minimum and maximum parts serviceability limits, will precede reassembly instructions.
- 2-13. GENERAL TESTING. Use the special fixtures designed for subassembly testing to assure proper calibration. Test fluid for these tests must be Naphtha conforming to the requirements in Section III of this technical manual, unless otherwise noted.

#### 2-14. GENERAL REPAIR OR REPLACEMENT.

- a. Replace all seals, shipping caps or plugs, taper or roll pins, retaining rings, tab or lock washers, packings, gaskets, diaphragms, elastic stop nuts, cotter pins and lockwire, whenever assemblies using these parts are removed for service or overhaul.
- b. Wrap replacement packings and diaphragms in air and oil resistant containers and store in a cool dry place. Avoid heat or direct sunlight until actual installation.
- c. Refer to the applicable "Illustrated Parts Breakdown" for available oversizes of replacement parts
- d. Alodine treat repaired or reworked aluminum parts. Reimmunize repaired or reworked stainless steel parts. Restore the protective finish to parts subjected to a cleaning process which removes the existing corrosion inhibitor.
- 2-15. IMMERSION TYPE OF ALODINE NO. 1200 TREATMENT FOR ALUMINUM PARTS. Use immersion treatment to increase the corrosion resistance of aluminum alloy parts only when necessary after cleaning and/or rework.
- a. Immerse for 1 to 5 minutes at room temperature in Alodine solution.
- (1) The solution is prepared by adding slowly, with thorough stirring, 3 oz. of Alodine No. 1200 per gallon of tap water at room temperature. Disregard the small amount of insoluble material that may settle out.

	Concentration	on of No. 1200	Electrometric
ml thiosulphate	oz/gal	lb-oz/100 gal	Operating pH
10.0	3,00	18 lb 12 oz.	1.6 to 2.3
9.0	2.75	17 lb 3 oz.	1.6 to 2.3
8, 25	2.50	15 lb 10 oz.	1.6 to 2.3
7.5	2.25	14 lb 1 oz.	1.6 to 2.0
6.75	2.00	12 lb 8 oz.	1.6 to 2.0
5, 5	1.75	10 lb 15 oz.	1.6 to 2.0
5.0	1.50	9 lb 6 oz.	1.6 to 2.0
4. 25	1.25	7 lb 13 oz.	1.5 to 1.7
3.25	1.00	6 lb 4 oz.	1.5 to 1.7
2, 50	0.75	4 lb 11 oz.	1.5 to 1.7
1.75	0.50	3 lb 2 oz.	· —

TABLE I. ALODINE NO. 1200 REPLENISHMENT

- (2) Check deterioration of Alodine No. 1200 solution before using. When determining the amount of Alodine No. 1200 to be added for replenishing an existing bath, pipette a 5 ml tank sample into a 250 ml flask. Dilute with distilled water to approximately 100 ml. Add approximately one gram potassium iodide (KI) and agitate the flask to dissolve the salt. Add 5 ml concentrated hydrochloric acid to the flask; rinse the neck of the flask and install a stopper. Allow the solution to settle for approximately one minute. Titrate with 0.1 normal sodium thiosulphate until a straw color is obtained. Add 2 ml soluble starch to the solution. Continue titration until the blue-black color disappears. From the amount of sodium thiosulphate used determine the amount of Alodine No. 1200 to be added to the bath by referring to Table I.
- (3) During normal operation the acidity measurement (pH) of the bath rises, causing a reduction in the color of the coating. To counteract this, add one quart of concentrated nitric acid to the bath for each 12 pounds of Alodine No. 1200 used in the normal replenishing procedure, or a sufficient amount to maintain the pH of the bath within the range shown in Table I.

#### NOTE

ACP Chemical Test Set No. 2266 for the control of the Alodine No. 1200 bath can be obtained from the AMCHEM Products Inc., Ambler, Pa.

- (4) The Alodizing tank should be constructed of stainless steel or other suitable acid and oxidation resistant material other than lead, glass, or ceramics. The tank must be ventilated. Containers that are immersed with the work should be of acid-resistant material or mild steel that has been suitably coated.
- b. Rinse thoroughly in cold running water.
- c. To facilitate drying, rinse in hot water, at 65.6°C (150°F) to 82.2°C (180°F), to which has been added 0.05-0.1 oz. Alodine No. 1200 per gallon. Where hard water exists, pure water (deionized, steam condensate or distilled) must be used for the hot rinse

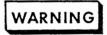
to prevent the deposition of powdery residues which would interfere with paint adhesion. Maintain final rinse by addition of Alodine No. 1200 so that a 25 ml sample titrated, as in paragraph 2-15, a,2, gives a titration of 1.0-2.0 ml

- d. The Alodine finish shall be a uniform, adherent, iridescent golden through tan to dark brown coating, free from evidence of surface powder or readily removable surface material.
- 2-16. BRUSH APPLIED ALODINE NO. 1200 TREAT-MENT FOR ALUMINUM PARTS.
- a. Prepare the solution in the following proportions:

Alodine No. 1200 3 oz
Nitric acid (specific
gravity 1.42) 1/2 fluid oz
Water 1 gallon
Triton X100 (when wetting
agent is required)1/8 fluid oz

#### NOTE

Triton X100 may be obtained from Rohm and Hass, Philadelphia, Pennsylvania.



Since the Alodine No. 1200 solution is injurious to the skin and clothing, operators must be adequately protected by goggles, rubber gauntlets, rubber aprons, etc.

- b. The solution is preferably held in a stainless steel container. Steel lined with Neoprene or Koroseal, or a polyethylene container may also be used. Nylon bristle brushes, sponges, rags, paint spray guns or insect sprayers may be used for application of the solution to the part. Applicators must be thoroughly washed with water immediately after use.
- c. Rinse or swab the area to be treated with clean water.

#### KEY TO FIGURE 2-9

- 1. Seal Aluminum
- 2. Seal Aluminum
- 3. Locking Cup Enrichment valve and discharge nozzle
- 3A. Locking Cup Enrichment valve and discharge nozzle
- 3B. Pin
  - 4. Plate Identification
  - 5. Screw, Tapping Thread forming

  - 7. Plate Automatic mixture control
  - 8. Screw Machine
  - 9. Washer
- 10. Gasket Automatic mixture control

- 11. Plug Pipe 12. Plug Pipe 13. Plug Taper seat 14. Plug Taper seat
- 15. Plug Pipe
- 16. Plug Pipe
- 17. Plug Machine thread
- 18. Plug Pipe
- 19. Plug Pipe 20. Plug Taper seat
- 21. Cover Assembly Pump diaphragm
- 22. Screw Machine
- 23. Washer
- 24. Spring Pump discharge
- 25. Diaphragm Assembly Pump
- 26. Valve Assembly Relief
- 27. Retainer, Valve Relief
- 28. Screw Machine
- 29. Valve Relief
- 30. Spring
- 31. Spacer Relief valve
- 32. Gasket Acceleration pump
- 33. Cover Assembly, Push Rod Idle
- 34. Screw Machine
- 35. Washer
- 36. Gasket, Cover Idle push rod
- 37. Pin Cotter
- 38. Nut, Castellated Hex
- 39. Rod Assembly Idle push
- 40. Washer Spring retainer
- 41. Spring Discharge diaphragm
- 42. Washer Spring retainer
- 43. Plunger Idle valve
- 44. Cover Idle diaphragm
- 45. Screw Machine
- 46. Washer
- 47. Diaphragm Assembly Idle and enrichment valve
- 48. Spring Idle needle
- 49. Washer Lock
- 50. Seat Idle needle
- 51. Washer Nonmetallic
- 52. Screw Assembly Enrichment valve adjustment
- 52A. Screw Assembly Enrichment valve adjustment
- 53. Cover Assembly Metering needle
- 53A. Cover Assembly Metering needle
- 54. Screw Machine
- 55. Washer
- 56. Retainer Spring
- 57. Spring Discharge diaphragm

- 58. Diaphragm Assembly Pump
- 59. Valve Assembly Metering needle
- 60. Spring Discharge needle
- 61. Washer Lock
- 62. Nut Metering needle seat
- 63. Seat Needle discharge
- 64. Washer Nonmetallic
- 65. Plug Air bleed
- 66. Bleed Air
- 67. Packing Preformed
- 68. Nozzle Assembly Discharge
- 69. Screw Machine
- 70. Washer
- 71. Throat Assembly Venturi
- 72. Pin Cotter
- 73. Venturi Throat
- 74. Gasket Venturi throat
- 75. Reducer Automatic mixture control vacuum channel
- 76. Skirt Venturi
- 77. Gasket Venturi skirt
- 78. Pin Cotter
- 79. Washer Flat
- 80. Pin Cotter
- 81. Washer Flat
- 82. Washer Spring
- 83. Lever Assembly
- 83A. Deleted
- 84. Bushing Shoulder
- 85. Lever
- 85A. Lever
  - 86. Plug Hex head
- 87. Washer Nonmetallic
- 88. Jet Metering
- 89. Plug Machine thread
- 90. Washer Nonmetallic
- 91. Strainer Assembly
- 92. Screw Machine
- 93. Washer
- 94. Washer Lock
- 95. Valve and Seat Assembly Regulator
- 96. Seat Regulator needle
- 97. Valve Regulator needle
- 98. Spring Regulator needle 99. Washer - Nonmetallic
- 100. Plug and Screen Regulator
- 101. Washer Nonmetallic
- 102. Cover Regulator 103. Diaphragm Assembly - Regulator
- 104. Setscrew
- 105. Cam Fuel cut-off
- 106. Link Assembly Mixture control
- 107. Plug Mixture control needle valve
- 108. Spring Altitude control needle
- 109. Valve Mixture control
- 110. Seat Mixture control 111. Washer - Nonmetallic
- 112. Lever Assembly Fuel cut-off
- 113. Regulator Assembly Spacer
- 114. Bushing Regulator spacer
- 115. Spacer Regulator
- 116. Plunger Spring release
- 117. Spring, Plunger Idle cut-off

adjust the enrichment valve adjusting screw until it just contacts the idle and enrichment valve control rod as shown in figure 2-5, and tighten the locknut securely.

#### NOTE

To manufacture the gauge locally, use the dimensions given in figure 2-5.

TABLE III. TORQUE VALUES

Figure No.	Index No.	Nomenclature	In. 1b Torque	Remarks
2-1	148	NUT, Throttle block stop	55-60	
	146	BLOCK, Throttle stop		Note 1
	133	NUT, Throttle lever attachment	90-100	
	129	SCREW, No. 8-32 throttle valve	20-25	Note 2
	121	PLUG, Taper seat	30-40	Note 3
	109	PLUG, Mixture control needle shaft	70-80	
	106	SCREW, No. 6-32	8-10	
	100	PLUG, 1/2-20 Regulator needle valve	70-80	
:	96	SEAT, Regulator needle valve	40-50	Note 4
	92	SCREW, No. 10-24 Regulator cover	20-30	Note 5
	89	PLUG, 3/4-20 Fuel strainer	80-90	
	88	JET, Main metering	35-45	
	86	PLUG, 7/16-20 Metering jet	65-75	
	75	RESTRICTOR	25-35	
	69	SCREW, No. 10-24 Venturi	20-30	
	65	PLUG, 1/2-20 Discharge bleeder	18-20	
	62	NUT, Discharge nozzle needle seat	40-50	Note 4
	54 45 34 22	SCREW, No. 10-24 cover attaching	20-30	Note 5
	50	SEAT, Idle needle valve	40-50	Note 4
	20	PLUG, Taper seat	50-60	Note 3
	17	PLUG, 1/4-28	30-40	
	16 15 12 11	PLUG, 1/8 in. pipe	45-65	
	14 13	PLUG, Taper seat	30-40	Note 3
	8	SCREW, 5/16-18 AMC plate	35-40	

## NOTES:

- Note 1. Installed height 5/8 in. + 1/32 in., -0 in.; must be snug in main body. Drill through replacement block and body, taper ream with a No. 0000 taper reamer, and pin block to main body.
- Note 2. Stake after securing to torque value.
- Note 3. Assemble taper plugs snug against seat, tap with a rawhide mallet, then set to specified torque.
- Note 4. The above parts are secured in place with a special spring lock after torquing
- Note 5. Retorque after 10 minutes to original torque.

- d. While it is still wet, coat area to be treated with Alodine solution. Use care that the solution does not enter places where it will be trapped and cannot be removed by subsequent rinsing. Maintain the part and the solution at room temperature. Allow the solution to remain on the area 1 to 5 minutes. Do not allow the solution to dry on the part.
- e. Rinse or swab the treated area thoroughly with clean water to completely remove all remaining Alodine solution.
- 2-17. IMMUNIZATION TREATMENT FOR STAIN-LESS STEEL.
- a. Immerse the part in a solution of nitric acid and tap water for one-half hour. Keep the solution at room temperature and maintain the following specific gravities and concentrations by volume:

Specific Gravity	Baume Scale	Concentration (Percent)
1.422	Be43	50
1.408	Be42	52
1.381	Be40	57
1.355	Be38	62
1.330	Be36	67

- b. Rinse thoroughly in cold water.
- c. Rinse in hot water.
- d. Blow excess water out of recesses and dry thoroughly with clean dry compressed air.
- 2-18. Exterior surfaces of the carburetor may be repainted by applying zinc chromate primer and then applying lacquer, Cellulose Nitrate Jet Sage 622 (Specification MIL-L-7178).

#### NOTE

When spot painting is sufficient, repainting the entire part to improve appearance is not necessary.

### 2-19. GENERAL LUBRICATION.

- a. Lubricate all metal shipping plugs, internally used taper seat plugs, and all straight threaded plugs using a gasket or packing, with oil conforming to MIL-L-3572, Grade B.
- b. Lubricate the first two threads of all external taper seat plugs, pipe plugs and fittings with antiseizing lubricant "Titeseal", (brush or liquid type) or equal.

#### NOTE

"Titeseal" may be procured from the Radiator Specialty Co., 1400 West Independence Blvd., Charlotte, North Carolina.

- c. Lubricate all remaining threaded parts, except air bleeds, elastic stop nuts and jets with oil conforming to MIL-L-3572, Grade B.
- d. Facilitate installation of parts using rubber packings by applying a light film of special lubricant prepared as follows:
- (1) Combine 40 to 50 percent (by weight) petrolatum, conforming to Federal Specification VV-P-236, with 50-60 percent clean hydrocarbon solvent conforming to Specification MIL-F-7024A, Type II. Mix these components into a smooth homogeneous mixture free from abrasives and other impurities.
- (2) Place the lubricant in tightly sealed screw top containers to prevent evaporation of the hydrocarbon fluid and contamination with foreign particles. Prepared lubricant must not be stored beyond six months.
- (3) Opened containers of lubricant must not be retained for use beyond 30 days. Seal opened containers when not in use to prevent evaporation and contamination.

#### 2-20. GENERAL REASSEMBLY.

- a. Before starting reassembly refer to the reassembly instructions for special techniques and required subassembly tests.
- b. Use an arbor press for installation and removal of bearings and bushings.
- c. Replace all cotter pins and internal lockwire during reassembly.
- d. Torque values listed in the "Table of Torque Values" at the end of this section will be adhered to during reassembly. Unless otherwise specified the torque values listed are based upon threaded parts being lubricated as outlined in paragraph 2-19.
- 2-21. OVERHAUL OF MODEL PS-5C INJECTION CARBURETOR. (See figure 2-9.)

#### 2-22. DISASSEMBLY.

- a. Remove all external lockwires and seals, and disassemble the carburetor in the numerical order indicated in figure 2-9.
- b. Remove the idle control rod adjusting nut (38) to permit removal of the idle control rod and arm (39), idle diaphragm cover (44), and idle control diaphragm and needle valve assembly (47). Use an awl or similar pointed tool to remove the idle seat lockwasher (49) before removing the idle needle seat (50). Use care not to damage the washer seat in the carburetor body.
- c. Remove the discharge diaphragm adjustment screw (52) before removing the discharge diaphragm cover (53) to release tension on the discharge diaphragm spring (57). Remove the cover and discharge nozzle parts. Use an awl or similar pointed tool to remove

the discharge nozzle nut lockwasher (61) before removing the discharge nozzle nut (62). Use care not to damage the washer seat in the carburetor body. Remove the discharge air bleeder (66) from the opposite side of the body.

- d. Use metering jet screw driver T25260 to remove the main metering jet (88).
- e. Remove the regulator needle valve (97) from the regulator cover (102) after the needle valve seat plug (100) and the needle spring (98) are removed. Remove the needle seat (96) after removing the regulator cover.
- f. To facilitate removal of fulcrum pin (120), disengage spring (121) from idle cut-off lever assembly (123). Remove tension on idle cut-off lever (123) by pressing down on regulator spring retainer (122), thus allowing the fulcrum pin (120) to slide from the main body.
- g. Place an identifying mark on the throttle valve (126) to insure its return to its original position in the throttle bore.
- h. Tap the exposed end of the throttle shaft (142) with a soft mallet to drive the expansion plug (141) from the carburetor body to permit shaft removal.
- i. Complete carburetor disassembly in the numerical order indicated in figure 2-9.
- 2-23. CLEANING. Clean all parts as outlined in paragraph 2-5.

# CAUTION

Prior to cleaning the main body assembly (143, figure 2-9), install locally manufactured plugs or other suitable devices in a manner to prevent exposure of the bushings (148 and 149, figure 2-9) to the cleaning solvent. Do not expose the bushings to any type of solvent or blow them out with compressed air; the lubricant contained in the bushings may be removed requiring unwarranted bushing replacement.

- a. Clean the bushings (148 and 149, figure 2-9) with a soft swab saturated with clean oil conforming to Specification MIL-O-6081, Grade 1010.
- b. Do not attempt to clean clogged jets or bleeds with a piece of wire, drill, or sharp instrument.
- c. The inlet fuel strainer screen may be cleaned with a soft brush and cleaning solvent. Do not attempt to open clogged screens with a sharp instrument.
- d. Remove the assembly date decal (6, figure 2-9) from the main fuel body by wiping with a clean cloth dipped in acetone.

#### CAUTION

Acetone is highly volatile and combustible, use only in a well ventilated area.

- e. Refer to the caution following paragraph 2-5,a.
- 2-24. INSPECTION.
- a. Inspect the mounting surfaces to which various parts are assembled to be certain they are not nicked or scratched.
- b. Inspect all parts for grooves, bends, cracks, corrosion and excessive wear. Refer to Table II, Tolerance Values, for permissible worn tolerances. Parts not coming within specified limits must be replaced.
- c. Carefully inspect the following valves and seats for burrs, roughness or any damage that may cause sticking and unstable metering.
  - (1) Idle valve assembly (47) and seat (50).
- (2) Discharge needle valve assembly (59) and seat (63).
  - (3) Manual mixture control valve (109) and seat (110).
  - (4) Regulator needle valve (97) and seat (96).
- d. Inspect the fuel strainer assembly (91) and poppet valve plug (100) for a clogged or damaged screen.
- e. Inspect the base of the spring release plunger (116) for a groove.
- f. Check springs (24, 41, 48, 57, 60, 98, 108, 117, 124) for free length. Refer to figure 3-4, Specification Sheet, for proper values.
- g. Inspect throttle shaft bushings (148 and 149) for fretting corrosion or galling, excessive wear, marring and/or burnishing. Refer to Table II for permissible worn dimensions.
- h. Inspect the top and bottom flanges of the main body (155) to be certain they are not nicked or scratched.
- 2-25. TESTING.
- a. No testing is required at this time.
- 2-26. REPAIR OR REPLACEMENT. (See figure 2-9)
- a. Replace all parts specified in paragraph 2-14.
- b. Replace all damaged parts that cannot be satisfactorily or economically repaired, and parts worn to such an extent that continued service use would have a detrimental effect.

TABLE II. TOLERANCE VALUES (See Figure 2-9)

Index No.	Nomenclature	Dimensions New Min. and Max.	Permissible Worn Dimensions Min. or Max.
39	Idle Push Rod Assembly OD	0. 187 0. 186	0. 183
83	Lever Assembly ID	$\frac{0.3136}{0.3116}$	0.315
84	Shoulder Bushing ID	$\frac{0.\ 1875}{0.\ 1865}$	0. 191
106	Mixture Control Link Assembly OD	$\frac{0.186}{0.184}$	0. 181
107	Hex Plug ID	0. 188 0. 186	0. 1845
109	Manual Mixture Control Needle Valve OD (in hex plug)	0. 184 0. 182	0. 1805
	Manual Mixture Control Needle Valve OD (in sleeve)	$\frac{0.276}{0.274}$	0. 2725
110	Mixture Control Seat ID	$\frac{0.282}{0.280}$	0. 2835
112	Lever Assembly OD	$\frac{0.216}{0.215}$	0.213
114	Shoulder Bushing ID	$\frac{0.219}{0.217}$	0. 221
	Shoulder Bushing OD	$\frac{0.310}{0.308}$	0.3065
116	Spring Release Plunger OD	$\frac{0.278}{0.276}$	0.274
	Spring Release Plunger OD	$\frac{0.371}{0.369}$	0.367
120	Fulcrum Pin OD	$\frac{0.\ 127}{0.\ 126}$	0. 1235
123	Idle Lever Assembly	$\frac{0.130}{0.127}$	0. 133
142	Throttle Shaft Assembly OD	$\frac{0.4380}{0.4367}$	0.434
	Throttle Shaft End Play	0.006 0.003	800.0
147	Bushings ID	$\frac{0.130}{0.127}$	0. 1325
148, 149	Throttle Shaft Bushings ID	$\frac{0.440}{0.439}$	0.442
150	Guide Bushing ID	0. 192 0. 190	0. 195
154	Spring Release Bushing ID	$\frac{0.282}{0.280}$	0. 284
. ~	Spring Release Bushing ID	$\frac{0.375}{0.373}$	0.377

- c. Remove burrs on flanges, valves and seats with a flat Arkansas stone. Smooth and polish with a crocus cloth.
- d. When replacing spring release bushing (154) remove old bushing and select replacement bushing to obtain a press fit of 0.001 0.004 inch. Bushing must be positioned radially as shown in figure 2-10.
- e. If inspection indicates a need for replacement of the Heli-Coil inserts (152), proceed as follows:
- (1) Remove old insert using Heli-Coil Extracting Tool No. 1227-6.
- (2) Install new insert using Heli-Coil Inserting Tool No. 528-4N.
- (3) Assemble insert so last coil is 0.005-0.030 inch below flange surface. Remove tang using Tang Break-off Tool No. 1195-4. Must be 1/4 20 NC -2 thread after assembly of insert. Thread gage must pass tang break.

#### NOTE

Tapped holes for Heli-Coil must be completely void of lubrication before inserting.

- f. If necessary to replace guide bushing (150), select replacement bushing to obtain a press fit of 0.004 inch. Install new washer (151) and press bushing in until it shoulders.
- g. To replace throttle shaft bushings (148 and 149), proceed as follows: (See figure 2-10).
  - (1) Press out old bushings on an arbor press.
- (2) Select replacement bushings to obtain a press fit of 0.003 0.005 inch.
- (3) Use the T27278 Mandrel in conjunction with a drill press or arbor press. If a drill press is used, the mandrel can be inserted in a one-half inch chuck. The head of the drill press can be used to press in the bushings. There are no provisions for holding the mandrel if an arbor press is used.
- (4) Position the throttle shaft boss (front regulator side) in the center of a one inch steel block. Insert bushing (149) on to the 0.429 inch diameter of the mandrel and press in the bushing until the bushing shoulder touches the main body housing boss.
- (5) Rotate the main body 180 degrees and insert the T27277 arbor gage through the rear shouldered bushing. Use the mandrel and press the bushing (148) in until the end of the mandrel bottoms against the arbor gage. Use of the mandrel and arbor gage will provide a 3.7815 dimension between the extreme outside faces of the bushings and insure correct end clearance with the throttle shaft installed.
- (6) Swab out bushings with light oil and proceed to line ream using T26823 reamer.

#### NOTE

It is important that the cut be made with a light feed pressure keeping the reamer cutting in an even forward motion. If reamer is power driven, do not turn reamer in excess of 400 rpm.

- (7) After completing the reaming operation, clear the bushing again with light oil.
- (8) Check alignment by inserting a new throttle shaft through both bushings. The shaft should drop freely without binding either with a rotating or horizontal movement of the throttle shaft. Replace bushings not meeting these requirements.

#### NOTE

If the main body is to be stored for 30 days or longer, the bushings must be protected. Insert into each bushing a one-half inch by one inch felt dowel that has been soaked in SAE 10 oil and retain for the duration of the storage period.

- h. To replace bushings (147), remove old bushings. Select replacement bushings to obtain a press fit of 0.002 0.006 inch. Press in new bushings and line ream as indicated in figure 2-10.
- i. If necessary to replace stop block screw (144), install hex jam nut (146) and screw in stop to position and dimension shown in figure 2-10. Torque hex jam nut (146) to value specified in Table III. Drill through with a No. 52 (0.0635 inch) drill and install pin (145) as shown.
- j. If the throttle stop assembly (135) and/or throttle shaft assembly (142) must be replaced, a new retaining pin hole must be drilled. Proceed as follows:
- (1) Assemble the throttle shaft assembly (142) and throttle valve (126) into the main body assembly (143) as outlined in paragraph 2-28, b and c.
  - (2) Open the throttle valve to the wide open position.
- (3) Position the wide open stop of the throttle stop assembly snug against the stop block screw (144).
- (4) Establish throttle shaft end play between the flange of the throttle shaft bushing (149) and the lever assembly (137) to the dimensions indicated in Table II.
- (5) Drill through the throttle stop assembly (135) and throttle shaft assembly (142) with a No. 42 (0.0935 inch) drill and ream for a No. 0000 split taper pin.

#### NOTE

If a new throttle stop assembly (135) is used, it will have a locating pilot hole drilled through one wall.

k. If the base of the spring release plunger (116) is grooved, lap the base to remove the groove.

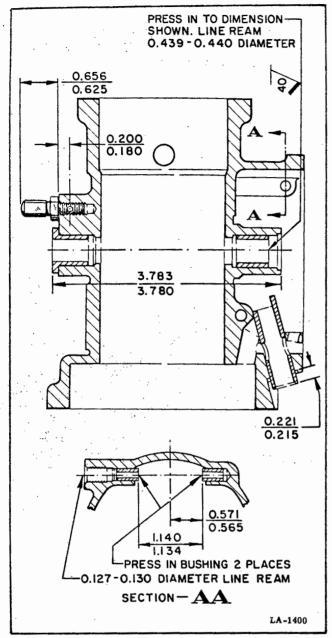


Figure 2-10. Bushing Installation Dimensions

#### NOTE

When lapping, remove just enough metal to obtain a suitable flat surface. The overall length of the spring release plunger must not be less than 1.581 inches after lapping.

- l. Replace springs not meeting free length requirements indicated on the Specification Sheet, figure 3-4.
- m. Replace the fuel strainer assembly (91) and poppet-valve plug (100) if the screen is broken or cannot be satisfactorily cleaned.

#### 2-27. LUBRICATION.

a. Apply a thin film of grease conforming to Specification MIL-G-3278 (Standard Oil of Indiana Supermil

Grease No. 8723 or equivalent) to the spring release plunger (116), fulcrum pin (120) and to all bearing surfaces of the idle cut-off lever assembly (123) before installation.

b. Lubricate the idle control plunger (43) and the guide pin inside the cover (33) with Universal No. 40 oil without dye, before installation.

#### 2-28. REASSEMBLY.

- a. Reassemble the Model PS-5C Injection Carburetor in reverse numerical order as indicated in the exploded view, figure 2-9. Refer to the following paragraphs for applied use of special tools and information not apparent in the exploded view.
- b. If the throttle shaft assembly (142) was removed, reinstall shaft into main body assembly (143). Install a new expansion plug (141).
- c. Assemble the throttle valve (126) to the throttle shaft (142) with the screws (127) and washers (128). Install throttle valve (126) and fit until a maximum of 0.0015 in. clearance exists at all points between the throttle valve and the throttle bore. Stake the screws using the T25138 staking tool and the special staking fixture illustrated in figure 2-11. This fixture, if used, must be manufactured locally.

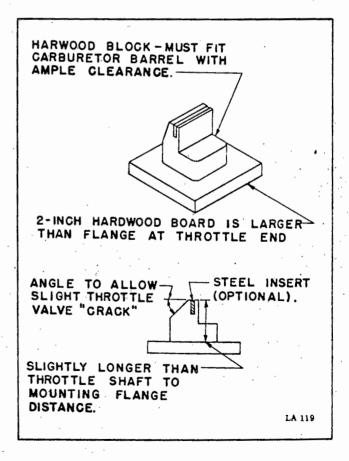


Figure 2-11. Throttle Valve Screw Staking Fixture

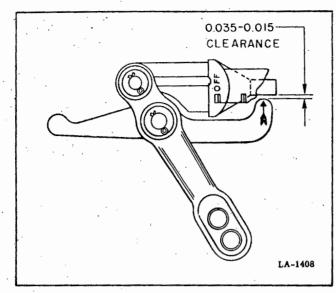


Figure 2-12. Establishing Clearance Between Idle Cut-Off Lever and Manual Mixture Control Needle

d. Install all regulator valve parts using the same number of shims (125) as were originally removed. Rolls of the inner and outer regulator diaphragms (103 and 118) must face each other.

#### NOTE

Be certain to install the regulator needle (poppet valve) seat (96) into the regulator cover (102) before installing the cover on the main body. Secure the seat to the specified torque and install the seat lockwasher (94).

- e. To facilitate installation of the various covers and diaphragms, use two guide pins approximately 2 inches in length by 0.190 inch in diameter. Thread one end of each rod with a No. 10-24 NC 3 thread. These guide pins will aid in aligning the covers and diaphragms with the main body when installed in two diagonally opposed tapped holes.
- f. After assembly of the manual mixture control group (111 through 104) and idle cut-off lever (112), adjust as indicated in figure 2-12, to give the specified clearance. Adjustment is made by bending the idle cut-off lever (112).
- g. A leakage test of the discharge nozzle needle valve (59) and the needle valve seat (63) must be performed either as part of the assembly operation or as part of the flow bench test procedure. The leakage test should be made, however, prior to final flow bench testing.
- (1) Use a 1/8 inch pipe tee. Attach a length of flexible rubber hose to each arm of the tee.
- (2) Connect the free end of one hose to the flow bench metering suction connection; another hose is connected to the flow bench metering suction regulated connection and the third hose is slipped over the discharge end of the discharge nozzle needle seat with the needle valve in place.

- (3) First determine if any leakage exists in the hook-up by applying 30.0 inches H<sub>2</sub>O vacuum and pinching the hose running to the needle valve seat. With the first hose still pinched off, pinch off the hose from the metering suction regulated and note leakage on the water column. If water column drops, leakage exists in the hook-up and must be corrected before continuing test.
- (4) After eliminating hook-up leaks, apply 30.0 inches H<sub>2</sub>O vacuum to the nozzle seat and pinch off the hose from the metering suction regulated and observe the water column for leaks. A drop of 4.0 inches H<sub>2</sub>O per minute is acceptable.
- (5) Excessive leakage of the discharge needle valve and seat in most cases can be minimized by staking the valve seat with a locally manufactured staking tool as illustrated in figure 2-13. Light staking of the needle valve in the seat is also permissible.
- (6) If staking of the seat does not reduce the leakage rate to an acceptable value, replacement of the needle and/or seat is indicated. The replacement parts, however, must also prove acceptable by the above test.
- h. After installing the idle control rod assembly (39), adjust the control rod nut (38) in the following manner:
- (1) Back the idle speed adjustment screw (133) out of the throttle stop assembly (135) to allow the throttle to close fully.
- (2) Adjust the idle mixture screw (134) to a midposition between rich and lean. Accomplish this by turning the screw until its head is flush with the tip of the bushing in which it is installed.
- (3) Move the throttle to the full closed position and pull the idle control rod assembly (39) out as far as possible without forcing.
- (4) Install the nut on the rod until it contacts the loose lever assembly (137). Back the nut off one-half turn and secure with cotter pin (37).
- 2-29. GENERAL LOCKWIRING INSTRUCTIONS. Upon completion of calibration and preparation for storage, the complete carburetor must be lockwired. General and specific lockwiring instructions are as follows:

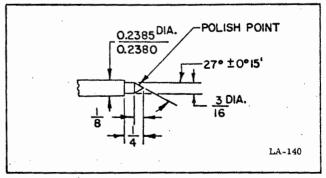


Figure 2-13. Discharge Nozzle Staking Tool

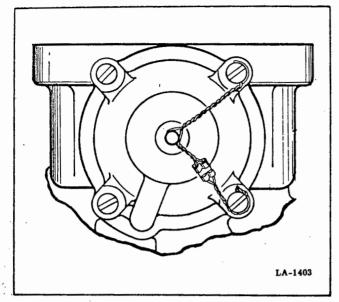


Figure 2-14. Lockwiring and Sealing Discharge Nozzle Adjustment

- a. Unless otherwise specified, all internal and external wiring shall be accomplished using 0.0258 inch diameter stainless steel wire conforming to Federal Specification QQ-W-423.
- b. Before any nut, screw, plug or comparable part is lockwired it must be properly torqued.
- c. Parts shall be lockwired in a manner that will place the wire in tension when the parts tend to loosen. The wire should leave the part in a clockwise direction and shall be double twisted (approximately eight to ten turns per inch) whenever possible.
- d. If lockwiring is removed for any purpose, it shall be replaced with new wiring.
- e. The wire shall be installed in such manner that the loop around the bolt or part head will have sufficient tension to prevent it from slipping over the bolt head to cause slack in the wiring.
- f. When castellated or slotted nuts are secured with lockwire, they shall be tightened to the low value of their torque limit and then the torque is to be increased until a slot aligns with the hole; however, the maximum torque limit must not be exceeded.
- g. A pigtail of 1/4 to 1/2 inch shall be made at

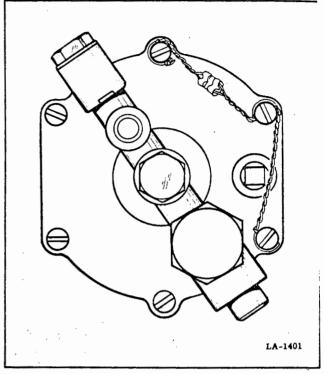


Figure 2-15. Lockwiring and Sealing Regulator Cover

the end of each wiring group. This pigtail shall be bent under to prevent possible personal injury.

## NOTE

Extreme care must be taken to prevent clipped ends of lockwire from entering or becoming lodged in the carburetor.

- h. Wiring must not cross over or obstruct a fuel or air flow passage when an alternate method can be used.
- i. Lockwire screws and plugs in threes where possible.
- j. Lockwire and seal the discharge nozzle adjustment as shown in figure 2-14.
- k. Lockwire the venturi throat attaching screws in pairs; thread the lockwire through the cotter pins installed in the throat to prevent any distortion of air flow through the carburetor by the wire.
- 1. Lockwire and seal the regulator cover as shown in figure 2-15.

TABLE III. TORQUE VALUES

Index	Nomenclature	Torque Inch Pounds	Notes
8	Screw	45-55	Note 1
11, 12	· Plug	45-65	
13, 14	Plug	30-40	Note 3
15, 16, 19	Plug	45-65	
17	Plug	30-40	
. 20	Plug	50-60	Note 3
22	Screw	20-30	Note 1
28	Screw	4.0-4.5	
34, 45	Screw	20-30	Note 1
50	Seat	65-75	2.000 2
54	Screw	20-30	Note 1
62	Nut	80-90	1.000 1
65	Plug	18-20	
69	Screw	20-30	Note 1
75	Reducer	9-11	Note 4
86	Plug	65-75	. 1,010 1
88	Jet	70-90	Note 4
89	Plug	160-175	1,010 1
92	Screw	20-30	Note 1
96	Seat	70-80	1.000 1
100	Plug	70-80	
104	Screw	9-10	
107	Plug	70-80	
119	Plug	30-40	Note 3
127	Screw	10-15	11000
131	Nut	90-130	Note 2
139	Nut	20-25	HOLE Z
146	Nut	55-60	

Notes: 1. Retorque to original value after 20 minutes. Retorque only once.

- 2. Must be within limits to align cotter pin.
- 3. Assemble snug against seat, tap with rawhide mallet; then set to specified torque value.
- 4. Metering jet shall be screwed in until it is tight; then back out one or two turns. Retighten the jet to specified torque.

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#### SECTION III

#### TEST PROCEDURE

#### 3-1. GENERAL.

- 3-2. Final adjustments and functional testing after overhaul of the carburetor must be performed on specially constructed and calibrated equipment. This testing is a simple, definite and accurate method of checking performance under service conditions.
- 3-3. The testing of the carburetor must be performed in the following sequence:
- a. Eight hour soaking period
- b. Exercising and flushing procedure
- c. Final calibration procedure
- 3-4. The flow bench provides means for calibrating the fuel side of the carburetor. An "Air Metering Force", equivalent to that induced by air actually flowing through the carburetor, is applied to simulate actual operating conditions. The "Air Metering Force"

is referred to as "Metering Suction". Fuel quantity flowing through the carburetor is referred to as "fuel flow" and is measured with a flowmeter, which is calibrated to indicate fuel flow in pounds per hour.

#### NOTE

The flow test bench must be piped so its flowmeters will measure fuel flow to the carburetor inlet.

Some flow bench test sheets include "Burette" flow limits for use with flow benches which do not incorporate flowmeters; these limits are based upon the time required for a given volume of fuel to flow through the carburetor.

a. Where Burette limits are not shown on the flow bench limit sheet, the flowmeter (pounds per hour) limits may be converted to Burette limits, if required, by use of the following constants and formula.

Flown Limits	neter (lb/hr)	2 Volume To Be Timed	3 Naphtha Constant	4 Heptane Constant
Min.	Max.	(cc)		
0 6 20 40 60 100 165 195 250 390 650 1000 1400	6 10 40 60 100 165 195 250 390 650 1000 1400 up	50 100 200 300 500 850 1000 2000 2500 3000 5000 7000 9000	291.5 583 1166 1749 2915 4955 5830 11660 14575 17490 29150 40810 52470	274.7 549.4 1098.8 1648 2747 4670 5494 10988 13735 16480 27470 38458 49446

 $\frac{\text{Minimum Time Limit}}{\text{(in seconds)}} = \frac{\frac{\text{Constant}}{\text{Maximum Flow}}}{\frac{\text{Constant}}{\text{(in seconds)}}} = \frac{\frac{\text{Constant}}{\text{Minimum Flow}}}{\frac{\text{Constant}}{\text{Maximum Time Limit (in seconds)}}}$   $\frac{\text{Maximum Lb./Hr}}{\text{Maximum Time Limit (in seconds)}} = \frac{\frac{\text{Constant}}{\text{Constant}}}{\frac{\text{Minimum Time Limit (in seconds)}}}$ 

To establish the proper Burette time limit, refer to the flow sheet for the flowmeter limits. Find this limit in column 1 of the chart. Opposite this figure in column 2 will be found the volume of fuel to be timed, and in column 3 the constant factor to be used in the formula.

Example: Find the Burette time limits for a test point that calls for flowmeter limits of 848-882 PPH using naphtha. Locate this in column 1 of the chart, which falls in the 650-1000 category. Column 2 gives 5000 cc as the volume to be timed and column 3 gives 29150.0 as the constant to be used.

#### Therefore:

Minimum Time Limit  $\frac{29150.0}{882}$  33.0 seconds

Maximum Time Limit  $\frac{29150.0}{848}$  34.3 seconds

# 3-5. FLOW BENCH TEST FLUIDS.

- a. Flow bench test fluids should meet rigid specifications to guarantee accuracy of carburetor metering and also prevent conditions adversely affecting service life.
- b. Flow bench limits incorporate a two per cent tolerance from the desired flow. Excessive variation in fuel specific gravity and viscosity will seriously affect the flow of the carburetor. Variation in fuel specifications will affect the accuracy of flowmeters used to measure fuel flow during carburetor test.
- c. Satisfactory operation and service life of the carburetor are greatly dependent on the rubber components. Many fluids contain compounds that, if used for testing, will result in excessive swelling, shrinkage or stiffening of the rubber components. As an example, aromatic content should be held to a minimum.
- d. The test fluids that have proven satisfactory for carburetor calibration and on which flow bench limits are based are naphtha or heptane that have been refined to meet rigid specifications.

#### NOTE

Separate factory flow benches are employed for determining heptane and naphtha service limits. Each flow bench has its flowmeter calibrated with the specific fluid being used in that flow bench. The service activities flowmeters, where used, should be calibrated in one or the other of these fluids that have been refined to meet rigid specifications in order to minimize differences in flow.

e. Only naphtha meeting the following specifications should be procured.

Specific Gravity 15.5°C (60°F). . . . . . 0.738-0.742

Viscosity, Centistokes 21.1°C (70°F) . . . 0.740-0.770

Color., Water White
Doctor (ASTM) Negative
Copper Strip (ASTM) Negative
Initial Boiling Point (ASTM) 60°C (140°F) Min
10% Distillation (ASTM) at or over 82.2°C (180°F) Min
End Point (ASTM) 176.6°C (350°F) Max
Material must be lead free
Material must be 100% Paraffin base
Aromatic content 10% Max
Suggested Sources:
*

- (1) Portage Oil Company 1628 West Circle Avenue South Bend, Indiana
- (2) American Mineral Spirits Company Carteret, New Jersey or Chicago, Illinois
- f. Only heptane meeting the following specifications should be procured:

Military Specification . . . MIL-F-7024A Carburetor Testing Fluid Type 1 (A)

Specific Gravity 15.5°C (60°F). . . . . . . 0.697-0.701

Viscosity, Centistokes 21.1°C (70°F) . . 0.620-0.640

Copper Strip. . . . . . . . . . . . . Negative

Reid Vapor Pressure 37.7°C (100°F) . . . 2.0 psi Max

Residual Gum mg/100 ml........... 2.0 mg Max

Accelerated Gum mg/100 ml/5 hr . . . . 5.0 mg Max

Distillation Range

Suggested Source:

Phillips Petroleum Company Bartlesville, Oklahoma

g. Sampling and inspection procedures for test fluids used in the flow test of carburetors and components are to be as follows:

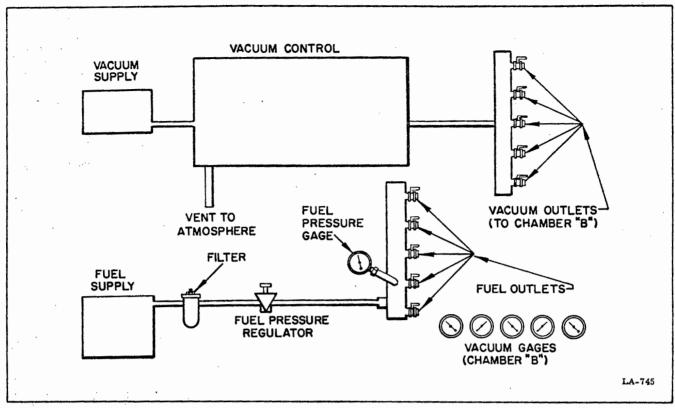


Figure 3-1. Schematic Diagram of Exercising and Flushing Bench

(1) A weekly smaple will be taken from each test bench in the carburetor overhaul test shop and the fluid tested for specific gravity and viscosity for conformance to the limits outlined below. Whenever the fluid does not conform to the applicable specification limits, it shall be replaced.

#### SPECIFIC GRAVITY

Temperature	Naphtha	Heptane
15.5°C (60°F)	0. 744 Max.	 0.703 Max.
23.9°C (75°F)	0. 738 Max.	0.696 Max.

#### VISCOSITY (CENTISTOKES)

Temperature	Naphtha	Heptane
21. 1°C (70°F)	0.780 Max.	0.650 Max

- (2) Process Fuel Sample Analysis Reports as expeditiously as possible to preclude the possibility of using a flow bench containing sub-standard test fluids.
- (3) Maintain adequate records indicating date, time and condition of the test fluid analyzed.
- (4) Each time new material is received to reservice the storage tanks, a sample will be taken and the material tested for conformance to the applicable specification. If the material checked does not conform to the applicable specification, the material will not be placed in the storage tank, but will be returned to Supply.

- (5) If the container specification identification does not agree with the laboratory analysis the Quality Control Office will be notified in order that corrective action may be initiated.
- h. Test fluid should be replaced if contaminated to the extent that accuracy of carburetor metering or service life is affected. The extent of contamination can usually be determined by change in specific gravity and viscosity and by visual inspection. Replace the test fluid when the following maximum values are exceeded.

	NAPHTHA	HEPTANE
Specific Gravity, 15.5°C (60°F) or 23.9°C (75°F)		0.703 Max. 0.696 Max.
Viscosity, Centistokes 21.1°C (70°F)	0.780 Max.	0.650 Max.

# WARNING

Steps should be taken to insure that proper ventilation is maintained at all times to preclude health and explosion hazards.

#### 3-6. CARBURETOR SOAKING.

3-7. Prior to any type of testing, properly soak the carburetor in the test fluid specified on the flow sheet. An eight hour soak period is required to

## KEY TO FIGURE 3-2

29. Metering Head Hg Manometer

- 1. 52R-Low Pressure Connection
- 2. Nozzle Pressure Gage
- 3. Metering Suction "A"
- 4. Carburetor Inlet
- 5. Carburetor Outlet
- 6. Static Fuel Pressure
- 7. Shop Air
- 8. Air Vibrator
- 9. Gage No. 48 Connection
- 10. 52R High Pressure Connection
- 11. 53 High Pressure Connection
- 12. 53 Low Pressure Connection
- 13. Metering Suction, Regulated
- 14. Carburetor Fuel Pressure
- 15. Metering Head Manometer, "D" Chamber
- 16. Metering Head Manometer, "C" Chamber
- 17. Regulated Air Pressure
- 18. Metering Suction "B"
- 19. Manometer No. 51 Shut-Off
- 20. Selector Valve Left-Right
- 21. Specific Gravity Indicator Shut-Off
- 22. Low Flow By-Pass
- 23. Fuel Shut-Off
- 24. Metering Head Fuel Manometer Blow Down
- 25. Gage No. 36 Shut-Off
- 26. Gage No. 37 Shut-Off
- 27. Metering Head Fuel
  Manometer Bleed
- 28. Metering Head Hg Manometer Bleed

- Bleed 30. Metering Head Fuel Man-
- Metering Head Fuel Manometer Shut-Off
- 31. Metering Suction Regulator
- 32. Carburetor Fuel Pressure Regulator
- 33. Nozzle Pressure Regulator
- 34. Static Fuel Pressure Regulator
- 35. Air Pressure Regulator
- 36. Carburetor Fuel Inlet
- 37. Nozzle Pressure
- 38. Fuel Filter Pressure
- 39. Regulated Air Pressure
- 40. Bleed Sight Glass
- 41. D-C Ammeter
- 42. D-C Voltmeter
- 43. D-C Connection
- 44. Switch, 24 Volts, DC
- 45. Rheostat
- 46. Pilot Light
- 47. Fuse
- 48. Vacuum Pressure Gage
- 49. Fuel Temperature
- 50. Fuel Temperature Control
- 51. Metering Suction Water
- 52L. Metering Suction Hg
- 52R. Hg Manometer
- 53. Manometer 60 Inches
- 54. Metering Head Hg Manometer
- 55. Metering Head Fuel Manometer

- 56. Specific Gravity Indicator
- 57. Flow Meter
- 58. Blower Switch
- 59. Vacuum Pump Switch
- 60. Fuel Pump Switch
- 61. Master Switch
- 62. Waste Tank Sight Glass
- 63. Hose From "Metering Suction Regulated" to Carburetor B Chamber
- 64. Hose From "Metering Suction B" to Carburetor B Chamber
- 65. Hose From "Chamber C Metering Head Manometer" to Chamber C
- 66. Hose From "Chamber D Metering Head Manometer" to Chamber D
- 67. Hose From Chamber E to
  "Carburetor Fuel Pressure"
- 68. Hose From "Carburetor Inlet"
- 69. Hose From Discharge Nozzle to Right Hand Drain Pan
- 70. Hose From "Air Vibrator"
  Connection
- 71. Hose From Vapor Vent Outlet to Right Hand Drain Pan
- 100. Test Gage Connection for No. 48
- 101. Test Gage Connection for No. 36
- 102. Test Gage Connection for No. 37

condition the carburetor fuel diaphragms. Proper soaking procedure is as follows:

a. Refer to figure 2-9. Remove the air bleed plug (65), air bleed (66), packing (67) and discharge nozzle assembly (68). Screw the T27247 Bleeder Tube Drain Adapter, with preformed packing in place, into the port from which the air bleed plug was removed until it seats against the metering needle seat (63). Slip a length of 7/16 ID Tygon Tubing over the end of the T27247 adapter which protrudes from the carburetor; allow this tube to provide drainage when injecting fuel to the carburetor inlet.

#### NOTE

Tygon Tubing may be obtained from the U.S. Stoneware Company, Plastics and Synthetics Division, Akron, Ohio.

b. With the throttle lever in the wide open position and the manual mixture control lever in the full rich position, inject fuel through the fuel inlet connection at 5 psi until fuel flows from the bleeder tube drain adapter hose. Move the throttle lever to the closed position and the manual mixture control to the idle

cut-off position. Pisconnect the fuel supply and install a cap on the fuel inlet connection. Permit the carburetor to stand filled with clean fuel for the eight hour soaking period.

# CAUTION

Do not immerse or stand the assembled carburetor in fuel or fluids of any kind. Use extreme care to prevent entry of fluids through the annular groove of the venturi into the carburetor air sections. Fluid contact with the air diaphragms will result in damage to the ozone resistant vinyl coating, upset metering qualities of the carburetor and shorten diaphragm service life.

# 3-8. EXERCISING AND FLUSHING.

a. Exercise and flush the carburetor to remove foreign materials, burnish internal parts to remove sharp edges and to stabilize the carburetor setting to minimize tendency to drift. Refer to figure 3-1 for a schematic diagram of the exercising and flushing bench. The bench should incorporate the following general requirements:

- (1) Fuel pressure: 15 to 20 psi.
- (2) Chamber "B" depression: 10 to 12 inches Hg.
- (3) Cycles per minute: 20 approximately (1-1/2 seconds ON, 1-1/2 seconds OFF).
  - (4) Duration: 30 minutes (approximately 600 cycles).
- b. Plug the space between the venturi throat and the venturi skirt (venturi annulus) to seal all the vacuum channels.
- c. Hook the carburetor up as described in paragraph 3-7, a, above and position on the exercising bench with the discharge nozzle in the downward position.
- d. Remove the taper seat plug (20, figure 2-9) in the regulator spacer and install a manometer fitting. Connect a manometer to the venturi suction channel.
- e. Apply fuel to the inlet of the carburetor at 13-15 pounds per square inch.

# CAUTION

Do not allow the fuel pressure to exceed 15 psi. Damage to the diaphragm may result.

- f. Lock the throttle in the wide open position.
- g. Apply 5 to 6 inches vacuum to a main body suction channel.
- h. Flush the carburetor for 30 minutes or through approximately 600 complete cycles of 0-6 inches of mercury with the fuel pressure maintained between 13 and 15 psi.
- 3-9. FINAL CALIBRATION PROCEDURE.
- 3-10. Before flow testing the carburetor, remove the venturi throat and skirt gasket. Turn the venturi skirt gasket (77, figure 2-9) over so the venturi (metered) air pressure holes are blocked. Reinstall the venturi throat.

## NOTE

With the gasket reversed, only two venturi attaching screws can be installed.

- 3-11. Install the carburetor on a suitable testing block in its normal operating position (discharge nozzle up) and make the required fuel, vacuum and air connections to the flow bench. Refer to figure 3-2 for the location of test connections from the carburetor to the flow bench.
- a. Connect hose (63) from the "Metering Suction Regulated" connection (13) on the bench to the carburetor "B" chamber at the tap provided opposite the manual mixture control needle.

- b. Remove the taper seat plug located between the acceleration pump and the regulator and connect hose (64) from the bench "Metering Suction B" connection (18).
- c. Remove the taper seat plug located between the idle control and the discharge diaphragm (metered fuel channel) and connect hose (65) from the flow bench "Chamber C, Metering Head Manometer" connection (16).
- d. Remove the 1/8 inch pipe plugs located at the top and bottom of the regulator cover. Install a shut-off valve in the upper opening (vapor vent) and slip a length of Tygon Tubing (71) over the outlet of the shut-off valve. Run the other end of the tube to the right hand table to route the discharged fuel back to the supply tank. Connect hose (66) from the flow bench "Chamber D, Metering Head Manometer" connection (15) to the lower opening.
- e. Remove the 1/8 inch pipe (shipping) plug located just above and to the right of the poppet valve on the regulator cover and connect hose (67) from the "Carburetor Fuel Pressure" connection (14) on the flow bench.
- f. Remove the remaining shipping plug and connect the fuel supply line (68) from the "Carburetor Inlet" connection (4) on the bench.
- g. Remove the air bleed plug (65, figure 2-9) air bleed (66), packing (67) and discharge nozzle assembly (68). Screw the T27247 Bleeder Tube Drain Adapter, with packing preformed in place, into the port from which the air bleed plug was removed until it seats against the metering needle seat (63). Slip a length of 7/16 ID Tygon Tubing (69, figure 3-2) over the end of the T27247 adapter which protrudes from the carburetor. Run the other end of the tube to the right hand table to route the discharged fuel back to the supply tank.
- h. Hold the throttle lever in the wide open position with the aid of a rubber band or light spring.
- i. Bolt a vibrator in place on the testing block or carburetor mounting flange. With hose (70) connect the vibrator to the "Air Vibrator" connection (8) of the flow bench.

#### NOTE

The air vibrator simulates vibrations encountered on the carburetor during engine operation. The vibrator should be attached so the shaft of the vibrator wheel is parallel to the poppet valve during flow bench test. In this manner vibrations will be at right angles to the length of the valve.

j. Open valves No. 3 and No. 11 of the flow bench to expose the wells of the metering suction manometer to atmosphere.

a. With the throttle in the wide open position, the manual mixture control set to a full rich position, and the vapor vent closed, adjust the flow bench to apply the specified metering suction given in check point No. 1, on the Flow Sheet. Adjust the discharge diaphragm adjusting screw (52, figure 2-9) to establish the specified fuel flow.

#### NOTE

If specified fuel flows cannot be obtained by adjusting the discharge diaphragm adjusting screw, it will be necessary to partially disassemble the carburetor and either add or remove shims (125, figure 2-9) from the regulator diaphragm spring. Adding shims will increase fuel flows, removing shims will decrease fuel flows. It is recommended that shims be changed only one at a time. In no event shall more than two shims be installed in the carburetor.

- b. Refer to check point No. 2. Move the mixture control lever to the idle cut-off position. Fuel flow should stop immediately. Any fuel flow at this point indicates leakage past the poppet valve. Remove hose (69, figure 3-2) from the T27247 adapter and observe leakage. Leakage must not exceed 20 drops per minute. Reinstall hose on adapter.
- c. Release the throttle lever from the wide open position. Measure throttle lever travel from closed to wide open positions to determine the exact onehalf throttle lever position.

d. Set the throttle lever at the one-half position, move the mixture control lever to full rich and continue tests according to check point 3 on the Flow Sheet.

A WAUSAUPII U-IL

- e. Adjustment of the discharge nozzle may twist the discharge nozzle spring (57, figure 2-9) slightly and cause the carburetor to go out of limits after limited use. Other springs in the carburetor may be in a twisted position after assembly. To eliminate this possibility, stabilize the carburetor as follows:
- (1) Select the first test point on the flow sheet having metering head limits. (Test point No. 3 in this case.) Run test point No. 3 and record.
- (2) Run "Metering Suction", Inches H<sub>2</sub>0, from 0 to 60 and 60 to 0 inches several times.
- (3) Actuate the manual mixture control lever into idle cut-off several times while running the metering suction up and down. This will cause further flexing of the regulator spring.

#### NOTE

The carburetor must repeat each time within 1 PPH (0.1 second Burette) of the original value recorded for test point No. 3.

- (4) If readjustment is necessary, repeat stabilization procedure until repeatability is assured.
- f. With the throttle lever at one-half position and the mixture control lever at full rich, proceed with test points No. 4 and 5.
- g. After recording the flowmeter values of check point 5, proceed with check point 6 by opening the vapor vent shut-off valve. Fuel flow should increase from 15.4 to 20 pounds per hour above values found on check point 5.

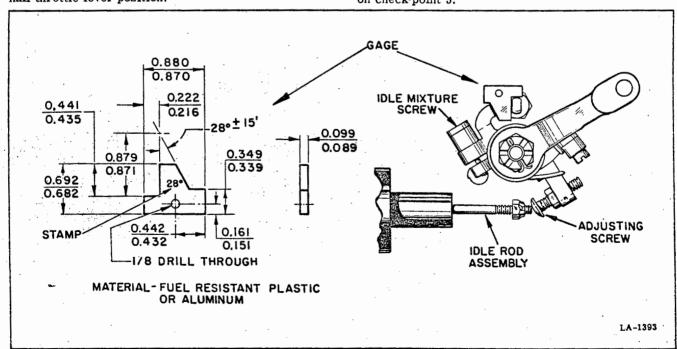


Figure 3-3. Setting Enrichment Valve Actuating Screw With T25941 Gage

- h. Close the vapor shut-off valve and proceed with check point 7.
- i. Before proceeding with check point No. 8, establish the opening point of the idle and power enrichment valve as follows:
- (1) With the idle mixture screw (134, figure 2-9) in a mid-position as described in paragraph 2-28, h, (2) use the T25941 gage as shown in figure 3-3. This will establish the throttle valve in a position 28 degrees from wide open.
- (2) Adjust the idle and enrichment valve adjusting screw (138) until it just contacts the idle control rod assembly (39, figure 2-9) as shown in figure 3-3
- (3) Torque the nut (139, figure 2-9) to the value specified in Table III.

#### NOTE

To manufacture the T25941 gage locally, use the dimensions given in figure 3-3.

- j. Continue tests of check points No. 8 through No. 10. If further adjustment of the enrichment valve is necessary, repeat the previous test as assurance that fuel flows are still within the specified limits. Test point No. 10 must recheck within limits to assure against nozzle setting shift.
- 3-13. After satisfactory completion of flow bench testing, check the carburetor for external leakage.
- a. Remove all test connections except test bench fuel supply and fuel pressure gage.
- b. Blank off all external fuel connections.
- c. Apply fuel at a pressure of  $5 \pm 1/2$  psig in excess of the fuel inlet pressure specified on the flow sheet.
- d. Visually inspect the entire exterior of the carburetor for evidence of fuel leakage. No leakage is permissible.

#### NOTE

Do not use chalk mixtures on this carburetor as an aid in detecting leakage.

e. If the carburetor proves statisfactory in both flow and leakage tests, remove fuel and pressure gage connections and install plugs.

#### NOTE

Be certain to disassemble the venturi assembly and restore the lower gasket (77, figure 2-9) to its correct position in the main body. Refer to figure 2-9 for proper sequence.

3-14. Lockwire and seal as required and per instructions in paragraph 2-29.

- 3-15. Install an assembly date decal (6, figure 2-9 (with the applicable assembly date) on the carbureto main body above the specification plate.
- 3-16. PREPARATION FOR STORAGE. Any unit taken out of service for more than 28 days, or unitabeing returned for overhaul must be flushed with preserving oil, Specification MIL-O-6081, Grade 1010 using the following procedure:
- a. Remove plugs and drain all fuel from the carburetor, then apply 10 to 15 psi air pressure to the carburetor inlet until all fuel is discharged from the discharge nozzle.

# CAUTION

Do not exceed the above air pressure; internal damage to the carburetor may result.

- b. Replace plugs and apply flushing oil filtered through a 10-micron filter at 13-15 psi to the carburetor fuel inlet until oil is discharged from the discharge nozzle.
- c. Replace fuel inlet shipping plug.

#### 3-17. PACKING FOR STORAGE.

- a. After filling with preservative oil the carburetor should be protected from dust and dirt, and given such protection against moisture as climatic conditions at the point of storage require. Generally, storing the unit in a dry area will be sufficient.
- b. If the unit is to be stored near or shipped over salt water, the following precautions should be observed:
- (1) Spray the exterior of the carburetor with an approved preservative oil.
- (2) Pack in a sealed dustproof container, wrap the container with moisture and vapor proof material and seal. Pack the wrapped unit in a suitable shipping case.

#### NOTE

Pack a one half pound bag of silica gel crystals in the dustproof container with the carburetor. The bag must not touch the carburetor.

## 3-18. RECONDITIONING AFTER STORAGE.

- a. Remove the inlet strainer and all plugs leading to fuel chambers. Drain all of the preserving oil from the carburetor. Wash the inlet strainer in clean fuel and replace. Replace all plugs.
- b. Remove the plug opposite the manual mixture control needle and drain any accumulated moisture from the air chamber. Replace plug.

- c. With the throttle lever in the wide open position and the manual mixture control in the full rich position, inject clean fuel through the fuel inlet connection at 5 psi until clean fuel flows from the discharge nozzle.
- d. Move the throttle lever to the closed position and the manual mixture control to the idle cut-off position. Disconnect the fuel supply and install a plug in the fuel inlet, leaving the carburetor filled with clean fuel.
- e. Allow the carburetor to soak in this fuel for a minimum of eight hours before placing into service.

#### CAUTION

Never, under any circumstances, submerge the entire carburetor in fuel or other solvents. Submerging the carburetor in this manner will allow the air section to fill, with a resulting detrimental affect on the air diaphragms.

#### NOTE

Each time an adjustment is made to either the idle speed or idle mixture after the carburetor is installed on the engine, it will be necessary to readjust the enrichment valve adjusting screw position. Use the T25941 gage as described in paragraph 3-12, i.

# SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 391318-8

ENGINE MODEL: O-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 8-19-57

	ENGINE MFGR Continental		DAIL	1 155022. 0 20 0.
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
		200141		
. 1.	Main Body Assembly	366141	1.	l
2.	Jet, Main Metering	390188	2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	383886	3.	
4.	Diaphragm Assembly, Idle & Power Enrich-		1	
	ment	364969	4.	
5.	Seat, Manual Mixture Control Needle	384967	5.	
	Valve, Manual Mixture Control	366291		1
6.			6.	· ·
7.	Needle & Seat Assy., Poppet Valve	366382	7.	i '
	Seat, Poppet Valve	366381	1	i
	Valve, Poppet	384142	į	ļ
8.	Seat Assembly, Discharge Nozzle	366476	8.	i
	Seat, Discharge Nozzle	383924		i
	Valve, Discharge Nozzle	383474	1	ĺ
٥	Bleeder, Discharge Nozzle Air	383922	١,	l ·
9.			9.	L
10.	Reducer, Vacuum	384606		Size: 44
11.	Vapor Vent	1	11.	Size: No. 70 Drilled in 383483 Reg. Cover
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1. 625" ± .002"
13.	Washer, Regulator Spring Adjustment	384819	13.	
14.	Valve Assembly, Pump Relief	364164	14.	
15.	Automatic Mixture Control Assembly	1 00.101		3744
		000000	15.	Not used
16.	Strainer Assembly, Fuel	366362	16.	
17.	Lever, Throttle	390248	17.	
1.	SPRING IDENTIFICATION Spring, Idle Cut-Off Plunger	383512		Francisco I ametho 01950 0100
1.	Spring, tale Cut-Off Planger	303312	1.	Free Length: .8125" ± .010"
_	i			ID: .296" ± .003"
2.	Spring, Discharge Needle	<b>3</b> 8351 <b>4</b>	2.	Free Length: .5625" ± .031"
				OD: .4375" ± .010"
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"
	]			ID: .516" - 0 + .016"
4.	Spring, Manual Mixture Control	383516	4.	Free Length: 2.750" ± .010"
7.	bping, mandar mixture control	000010		
				ID: .193" ± .003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
	,		l	ID: .516" ± .010"
6.	Spring, Poppet Valve	38 <b>3</b> 518	6.	Free Length: .875" ± .010"
				OD: .188" ± .003"
7.	Spring Begulator Diaphragm	202510	l ,,	
٠.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
_				ID: .938" - 0 + .031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: . 375" ± . 015"
				OD: .301" ± .003"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"
٠.			1	ID: .516" - 0 + .016"
10.	Spring, Loose Lever to Throttle Stop	383853	10.	тр: ,510 0 + ,010
11.	Spring, Idle Cut-Off Lever	384141	11.	·
			1	·
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Figure 3-4. Carburetor Specification Sheet Parts List 391318-8

Engine Model: O-470 Engine Mfgr.: Continental Engine Mfgr.: Setting: 531857  Test Point No. 1 Metering Suction Inches of Water Corresponding Air Flow Lb./Hr. 200 Mixture Control Lever Position R	Fuel Inlet Pressure: 10 P.S.I. Nozzle Pressure: - Limits Based on, 734 ± .002 Se	re: 10 P.S.I.		Part	Parts List No.: 39	391318-8	
Engine Mfgr.: Continental Engine Mfgr. Setting: 531857 Test Point No. 1 Metering Suction Inches of Water Corresponding Air Flow Lb./Hr. 200 Mixture Control Lever Position R	Nozzle Pressure: Limits Based on.	•					
dr.		Limits Based on. 734 ± .002 Specific Gravity at 75°	Gravity at 75° ±	L 5°F.		PS-5C 9-9-57	
oon Ir.		NAPHTHA	A	Flow Limits For Issues 4	or Issues 4. 5.	9	7 and 8 are Identical
dr.	2 3	4 5 6	7 8 9	10			
Ir.	0.7 2.2	6.3 12.2 12.2 2	26.4 28.6 34.3	26. 4			
		800 800	1200	1150			
+	f		·	ı			_
	2	T R	Y Y	¥			
te Volume	200	300 300	500	500			
Min.	34.8	28.3 21.4	28.1	32.5			
Limits Max. 31.0	37.0 3	33.2 30.1 23.8 3	34 4 29 8 27 3	34.4			-
spuc						-	
er Min.	31.5	58.1.73.5	84.6 97.6 106.7	84.6			
Limits Max. 29.9	Flow 33.45.46.6	61.7 81.7	89.8 103.6111.1	89.8			
In Lbs./Hr. Obs.						-	•.
Н	10, 75		69.0				
Head Max.	11.65	36.9	74.5				
Inches of Obs.							
		Multi-Point Auto	Multi-Point Automatic Mixture Control Calibration Limits:	ontrol Calibration	Limits:		
		Flow Method:					
		Doto Toungel.					
CAUTION	·~	Date assued.					
	7	Density:					
		Low (Lean) Limit:	;:				
These limits are based on flow bench checking	w bench checking	High (Rich) Limit:	ii.				
the carburetor in the same relative position	relative position	Notes: No. 1	- Chook Boints 3 through 6 are mode with the still will a 1/9 com	A drive	0 1110 - 41 - 411 - 0	/ 1 -1 -1 -1	
aircraft.	am ur aurgua ar	7	position.	nougn o are mad	ie widi inrollie	/I ur e vara e	z open
		No. 2	At check Point 6, open vapor vent and measure total flow. All other	open vapor veni	t and measure	total flow.	All other
PS-5C carburetors are up-draft units and are	aft units and are	S ON	check points vapor vent is closed.	r vent is closed.	100		
		•	Idle and enrichment valve stem with throttle valve set at 28° from the	ant valve stem w	ith throttle val	lve set at 28	from the
		No. 4 -	wide open position. Check Points 1, 2,	on. Recheck at point 10. 2, 8, and 9 are made wi	Recheck at point 10. 8, and 9 are made with throttle valve in the wide	ttle valve in	the wide
	-		•				

HOWAG WOTA	Nozzle Fressure: - Limits Based on, 692 $\pm$ . 002 Specific Gravity at 75° $\pm$ 5°F. Date Issued: 9-9-57	HEPTANE Flow Limits For Issues 4, 5, 6, 7, and 8 are Identical	5 6 7 8 9 10	12. 2 12. 2 26. 4 28. 6 34. 3 26. 4	1200 1300	0	4	300 300 500 500 500	29 1 22 9 33 7 29 0 26 5 33 7	·.	56.5 71.9 81.7 95.0 103.8	60.0 80.0 86.8 100.8 108.0 86.8		39.4	Multi-Point Automatic Mixture Control Calibration Limits:	Flow Method:	Date Issued:	Density:	Low (Lean) Limit: High (Rich) Limit:	Notes: No. 1 - Check Points 3 through 6 are made with throttle valve in $1/2$ open	position.  No. 2 - At check Point 6. open vapor vent and measure total flow. All other	က 1	wide open position. Recheck at point 10.	No. 4 - Check Points 1, 2, 8, and 9 are made with throttle valve in the wide open position.	
NOIMOGINI	Engine Mgr.; Continental Nozzle Fressure: - Engine Mgr. Setting: 531857 Limits Based on, 692		Test Point No. 1 2 3 4	Metering Suction D.7 D.7 S.2 6.3	Corresponding Air Flow Lb./Hr. 200 400 600	CCL		te Volume 150	Lime Max. 29 5 35.0 32.0	Obs	ter Min. 27.9 No 31.3	Limits Max. 29.6 Flow 33.2 45.7	 ing		l Coss.		CALITION CONTRACT	7		the carburetor in the same relative position as when it is installed on the engine in the		PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.			

Figure 3-6. Carburetor Flow Bench Test Sheet (Heptane) Parts List 391318-8

	ENGINE MFGR.: Continenta	ENGINE MODEL: O-470
	ISSUE 1	
	Serial 1 7-25-50	First production release.
	Serial 2 8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory
	Serial 2 0 10 00	straining of fuel.
		,
	ISSUE 2	
	Serial 3 8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164
		assembly accelerating pump relief valve added to improve decelerating engine
		operating characteristics.
٠.	Serial 4 10-2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover
•	501.41	screws replaced by 384018 to insure more thread engagement of screw in body.
	Serial 5 10-2-50	Parts list record change only.
	Serial 6 12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary
	bermi o 11 11 10	machine operation.
	Serial 7 12-21-50	Parts list record change only.
	Serial 8 1-16-51	Parts list record change only.
	Serial 9 7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facili-
	Derial b . 00 01	tate assembly.
	Serial 10 4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
	Serial to 4 00-02	disher i book replaced by cooper to recrime per classe.
	ISSUE 3	
	Serial 11 11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide
	Dellai II	better engine performance of idle.
		Source original posteriorismos of rates
	ISSUE 4	•
	Serial 12 8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening
	001,111	point. Carburetor now suitable for use on Continental O-470-11 and -13 engines,
	•	Cessna L-19, and Beech T-34 aircraft.
	Serial 13 9-22-53	Decal - Rubber parts cure date 364563 replaced by 187406.
	Serial 14 10-19-53	Cap - Discharge Nozzle 385035 added.
	Serial 15 11-23-53	Parts list correction.
	Berrar 10 11 20 00	A ALL MISE COLLECTION
	ISSUE 5	
	Serial 16 2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to in-
	202.44.25	corporate a taper seat plug at pressure connection instead of 1/8" pipe plug,
	•	which caused possible casting fracture if over torqued during installation.
	Serial 17 10- 1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standard-
	beriar 1. 10 1 or	ize on one assembly.
	Serial 18 10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and
	50114115	vapor vent connections instead of brass 1/8" pipe plugs.
	Serial 19 12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968
	Dellar 15 12 0 00	changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pin-
		dog point.
	Serial 20 2- 8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
	Serial 21 6- 6-56	Discontinued scribing discharge diaphragm adjustment.
	Serial 22 7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
	Serial 23 7-26-56	Parts list correction.
	Berlai 20	Tates indicate controll
	ISSUE 6	
	Serial 24 10- 1-56	Incorporation of vinyl coated air diaphragm for ozone protection.
	Serial 25 11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
	Serial 26 12-26-56	Added shipping date decalcomania.
	Serial 27 1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
	2 1 01	
	ISSUE 7	
	Serial 28 17-57.	Changed discharge diaphragm cover, discharge diaphragm screw, idle speed
		adjustment, idle control rod adjustment, and throttle stop assemblies from 32 to
		56 threads per inch to provide more precise adjustments.
	Serial 29 2-21-57	Main metering jet gasket changed from fiber to aluminum material.
		9 1 - 0
	ISSUE 8	
•	Serial 30 7-15-57	Changed to steel throttle shaft and Oilite throttle shaft bushings for increased
	, 22 27	service life. Added 80 mesh poppet valve strainer and changed to 100 mesh fuel
	•	inlet strainer.

Figure 3-7. Carburetor History Sheet Parts List 391318 (Sheet 1 of 2)

# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318 (Cont'd.) HISTORY OF SPECIFICATIONS AND FLOW LIMITS (Continued)

ISSUE 8 (Cont'd.)

Serial 31 8-19-57 Parts list correction.

NOTE: (1) Flow bench test limits for Issues 4, 5, 6, 7 and 8 are identical

(2) This specification and flow sheet corrects an error that existed in the burette limits of previously published limits for Issues 5, 6 and 7.

# SECTION IV DIFFERENCE DATA SHEETS

- 4-1. Overhaul and test procedures for the models included in this section are the same as the procedures for the Model PS-5C Injection Carburetor, Parts List 391318-8, except for the specific differences noted by the applicable Difference Data Sheet. Sections I, II and III contain complete overhaul and test information for the Mode PS-5C Injection Carburetor, Parts List 391318-8.
- 4-2. The following parts list and issues are covered in this section:

PS

-5C Parts List Number	Page Number
380223-2	39
380223-3	45
380223-4	. 53
380223-5	57
391318-4	63
391318-5	69
391318-6	73
391318-7	77
391629-3	81
391629-4	87
391629-5	93
391629-6	` 99
380223-6	105
380223-7	111
380223-8	117
391318-9	123
391318 <b>-10</b>	129
391318-11	135
391629-7	141

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INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this carburetor.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-2 Specification Sheet (figure 4-2) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 4-1).
- (2) The throttle shaft bushings (150 and 151, figure 4-1) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (144, figure 4-1) is brass instead of steel.
- (3) This issue incorporated an 80 mesh screen strainer which is not spring loaded, instead of a 200 mesh spring loaded strainer assembly (91, figure 4-1) as used on the carburetor in the basic technical manual.
- (4) This issue carburetor incorporates a different idle power enrichment diaphragm and needle assembly (47, figure 4-1).
- (5) This issue does not incorporate a relief valve assembly (26, figure 4-1) and gasket (32, figure 4-1).
- (6) This issue carburetor incorporates a different size main metering jet (88, figure 4-1).
- (7) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 4-1), discharge diaphragm adjusting screw assembly (52), throttle stop assembly (137), idle speed adjusting screw assembly (135) and idle control rod adjusting screw assembly (136). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used on the carburetor in the basic technical manual.
- (8) This issue carburetor does not incorporate a vinyl coated air diaphragm (120, figure 4-1) for ozone protection.
- (9) The main metering jet plug gasket (87, figure 4-1) on this issue is fiber instead of aluminum as used on the carburetor in the basic technical manual.

- (10) The poppet valve seat gasket (99, figure 4-1 and regulator needle plug gasket (101) are fibe instead of aluminum as used on the carburetor in the basic technical manual. The outside diameter of the gasket used on this carburetor is 1/16 incl larger.
- (11) This issue does not incorporate a matched and leak tested discharge nozzle needle valve and seat (59 and 63, figure 4-1).
- (12) This issue carburetor incorporates a scribed discharge diaphragm adjustment screw to indicate factory adjustment.
- (13) This issue carburetor incorporates two diffusion tube attaching rivets (156, figure 4-1).
- (14) The poppet valve seat (96, figure 4-1) on this issue carburetor is not machined to receive the end of the poppet valve screen.
- (15) This issue incorporates a shipping plug (15, figure 4-1) instead of a pipe plug as used on the carburetor in the basic technical manual.
- (16) This issue carburetor incorporates a different part number manual mixture control needle valve (111, figure 4-1) which is not drilled for lockwiring. A different set screw (106) is used which is not drilled for lockwiring. A lead ball (105) is used on this issue to retain the set screw instead of lockwiring. The manual mixture control assembly (104) is assembled before installation into the carburetor to facilitate installation of the lead ball (105).
- (17) This issue incorporates a different part number diaphragm assembly (103, figure 4-1).
- (18) This issue carburetor does not incorporate the discharge nozzle locking cup (3, figure 4-1).
- (19) This carburetor incorporates a different spacer and bushing assembly (115, figure 4-1) which accommodates a pipe plug (20) instead of a taper seat plug,
- (20) This issue carburetor uses a gasket (90, figure 4-1) of different material from the carburetor in the basic technical manual.
- (21) This issue carburetor incorporates a threaded brass plug (155, figure 4-1) instead of a pressed in aluminum plug as used on the carburetor in the basic technical manual.
- (22) This issue carburetor has a different loose idle lever assembly (139, figure 4-1) which incorporates a stationary contact pin instead of the en-

richment valve adjustment screw (140, figure 4-1). This loose idle lever assembly is not drilled for lockwiring.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubcation and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-2), Flow Limits Sheet (figure 4-3) and History Sheet (figure 4-4).

PREPARATION FOR STORAGE, PACKAGING, AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

#### KEY TO FIGURE 4-1

- 1. Seal Aluminum
- 2. Seal Aluminum
- 3. Locking Cup Enrichment valve and discharge nozzle
- 4. Plate Identification
- 5. Screw, Tapping Thread forming
- 6. Decal
- 7. Plate Automatic mixture control
- 8. Screw Machine
- 9. Washer
- 10. Gasket Automatic mixture control
- 11. Plug Pipe
- 12. Plug Pipe
- 13. Plug Taper seat
- 14. Plug Taper seat
- 15. Plug Pipe
- 16. Plug Pipe
- 17. Plug Machine thread

- 18. Plug Pipe
  19. Plug Pipe
  20. Plug Taper seat
- 21. Cover Assembly Pump diaphragm
- 22. Screw Machine
- 23. Washer
- 24. Spring Pump discharge
- 25. Diaphragm Assembly Pump
- 26. Valve Assembly Relief
- 27. Retainer, Valve Relief
- 28. Screw Machine
- 29. Valve Relief
- 30. Spring
- 31. Spacer Relief valve
- 32. Gasket Acceleration pump
- 33. Cover Assembly, Push Rod Idle
- 34. Screw Machine
- 35. Washer
- 36. Gasket, Cover Idle push rod
- 37. Pin Cotter
- 38. Nut, Castellated Hex
- 39. Rod Assembly Idle push
- 40. Washer Spring retainer
- 41. Spring Discharge diaphragm
- 42. Washer Spring retainer
- 43. Plunger Idle valve
- 44. Cover Idle diaphragm
- 45. Screw Machine
- 46. Washer
- 47. Diaphragm Assembly Idle
- and enrichment valve
- 48. Spring Idle needle
- 49. Washer Lock
- 50. Seat Idle needle
- 51. Washer Nonmetallic
- 52. Screw Assembly Enrichment valve adjustment

- 53. Cover Assembly Metering needle
- 54. Screw Machine
- 55. Washer
- 56. Retainer Spring
- 57. Spring Discharge diaphragm
- 58. Diaphragm Assembly Pump
- 59. Valve Assembly Metering needle
- 60. Spring Discharge needle
- 61. Washer Lock
- 62. Nut Metering needle seat
- 63. Seat Needle discharge
- 64. Washer Nonmetallic
- 65. Plug Air bleed
- 66. Bleed Air
- 67. Packing Preformed
- 68. Nozzle Assembly Discharge
- 69. Screw Machine
- 70. Washer71. Throat Assembly Venturi72. Pin Cotter
- 73. Venturi Throat
- 74. Gasket Venturi throat
- 75. Reducer Automatic mixture control vacuum channel
- 76. Skirt Venturi
- 77. Gasket Venturi skirt
- 78. Pin Cotter
- 79. Washer Flat
- 80. Pin Cotter
- 81. Washer Flat
- 82. Washer Spring
- 83. Lever Assembly
- 84. Bushing Shoulder
- 85. Lever
- 86. Plug Hex head
- 87. Washer Nonmetallic 88. Jet - Metering
- 89. Plug Machine thread
- 90. Washer Nonmetallic 91. Strainer Assembly
- 92. Screw Machine
- 93. Washer
- 94. Washer Lock
- 95. Valve and Seat Assembly Regulator
- 96. Seat Regulator needle
- 97. Valve Regulator needle
- 98. Spring Regulator needle
- 99. Washer Nonmetallic
- 100. Plug Regulator needle 101. Washer - Nonmetallic
- 102. Cover Regulator
- 103. Diaphragm Assembly Regulator
- 104. Needle and Link Assembly -
  - Mixture control
- 105. Ball

### SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 380223 DATE ISSUED: 3-18-49 (Rev: 1-1-50)

	ENGINE MITOR Commentar			B30ED. 3-10-49 (Rev. 1-1-30)
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	384607	1.	
2.	Jet, Main Metering	390188	2.	Size: No. 44 - 627CC
3.	Seat, Idle	383886	3.	Size: 0.120"; 1190-1214
4. 5.	Valve Assembly, Idle Seat, Manual Mixture Control Needle	384675	4. 5.	Stro. 0 1240 0 1960
6.	Needle, Manual Mixture Control	384967 384968	6.	Size: 0.124" - 0.126"
7.	Needle & Seat Assy., Poppet Valve	384836	7.	
	Seat, Poppet Valve	384138	"	Size:
	Valve, Poppet	384142	1 1	
8.	Nozzle Assembly, Discharge	384961	8.	
	Seat, Discharge Nozzle	383924		Size: 0.112"
	Valve, Discharge Nozzle	383474	1 1	
9.	Bleeder, Discharge Nozzle Air	383922	9.	
10.	Reducer, Vacuum	384606	10.	Size: No. 44
11.	Vapor Vent	!	11.	Size: No. 70, Drilled in 383483
	TT dead (There and American)	004500		Regulator Cover
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625" ± .002"
13. 14.	Washer, Regulator Spring Adjustment Strainer Assembly, Fuel	384819 383520	13. 14.	
15.	Loose Lever Assembly, Idle Control Rod	383845	15.	
	,			
	SPRING IDENTIFICATION			
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: 0.8125" ± .010" L.D. 0.296" ± .003"
2.	Spring, Discharge Needle	383514	2.	Free Length: 0.5625"± .031" O. D. 0.4375" ± .010"
3.	Spring, Discharge Diaphragm	383515	3.	Free Length: 1.875" ± .062" L.D. 0.516" - 0+ .016"
4.	Spring, Manual Mixture Control Needle	383516	4.	Free Length: 2.750" ± .010" I. D. 0.193" ± .003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625" L.D. 0.516" ± .010"
6.	Spring, Poppet Valve	383518	6.	Free Length: 0.875" ± .010" O.D. 0.188" ± .003"
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062" I.D. 0.988" - 0+ .031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: 0.375" ± .015" O.D. 0.301" ± .003"
9.	Spring, Idle	383515	9.	Free Length: 1.875" ± .062" L.D. 0.516" - 0,+ .016"
10. 11.	Spring, Loose Lever to Throttle Stop Spring, Idle Cut-Off Lever	383853 384141	10. 11.	
			l	
			1	•
				•
	•	1		
				•
		ł	1 1	

Figure 4-2. Carburetor Specification Sheet Parts List 380223-2

Engine Model: O-470 Engine Mgr.: Continental	Fuel Inlet Pressure: 10 psi Nozzle Pressure:	re: 10 psi Parts List No.: 380223-2 through Carb. Model: ps = 2	9- 43
Engine Migr. Setting: 530486	Limits Based on. 7	734 ± .002 Specific Gravity at 75 ± 5°F.	
Toot Doint No	NAPHTHA	limits for	
Metering Suction Inches of Water		1 7 95 13 4 1	+
-	300	600 800 800 1000 1200	-
	. ,		+
Throttle Position WO	WO 1/2	1/2 1/2 1/2 WO WO WO	+
0	150	250 300 300 500 500	+
Time Min. 29, 2	28.0 31	31, 5 29, 4 27, 1 20, 8 33, 6 28, 0	
		9.10	-
ler.	No 29, 4,34	34.85 46.7 60.8 76.2 81 6 97 9 106 5	+
Max.	Flow 31.2 36.95	19. 5 64. 4 83. 8 86. 5	
In Obs.			
+	112	12. 2 36. 2 77. 0	
Head Max.	13	39. 4	
nches of Obs.			
		Multi-Point Automatic Mixture Control Calibration Limits:	
		Flow Method:	
		Date Issued:	
CAUTION		Density: Low (Lean) Limit: High (Rich) Limit:	
These limits are based on flow bench checking	flow bench checking	Notes: 1. Check Points 3 through 7 are made with throttle valve in 1/2 open position.	osition.
the carburetor in the same relative position as when it is installed on the engine in the aircraft.	ne relative position n the engine in the	2. At Check Point 7, open vapor vent and measure total flow. All other points vapor vent is closed.	r points
PS-5C carburetors are up-draft checked with the discharge nozzle	draft units and are nozzle up.	3. At Check Point 8, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.	act idle de open
		4. Check Points 1, 2, 8 9 and 10 are made with throttle valve in the wide open	e open

Figure 4-3. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 380223-2

380223

## STROMBERG INJECTION CARBURETOR MODEL PS-5C

Engine Mfgr.:	Continental	Engine Model: O-470
ISSUE 1		
Serial 1	7-25-47	Parts list released to production.
Serial 2	10-27-47	Parts list records change only.
Serial 3	12- 5-47	Parts list records change only.
ISSUE 2		
Serial 4	12-19-47	Discharge nozzle air bleeder seal 390267 changed to 250-S-5 to provide an improved seal.
Serial 5	E 7 40	Parts list records change only.
(	5- 7-48	
Serial 6	5- 5-49	Parts list records change only.

Figure 4-4. Carburetor History Sheet Parts List 380223-2

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this carburetor. The following tool is used in addition:

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-5	5220

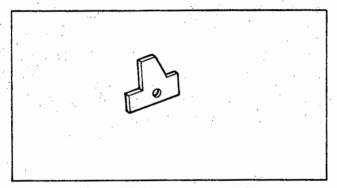


Figure 4-5. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-3 Specification Sheet (figure 4-8) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 4-6).
- (2) The throttle shaft bushings (150 and 151, figure 4-6) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (144, figure 4-6) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 4-6) instead of a 200 mesh screen as used on the carburetor in the basic technical manual.

- (4) This issue carburetor incorporates a different idle power enrichment diaphragm and needle assembly (47, figure 4-6).
- (5) This issue does not incorporate a relief valve assembly (26, figure 4-6) and gasket (32, figure 4-6).
- (6) This issue carburetor incorporates a different size main metering jet (88, figure 4-6).
- (7) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 4-6), discharge diaphragm adjusting screw assembly (52), throttle stop assembly (137), idle speed adjusting screw assembly (135) and the idle control rod adjusting screw assembly (136). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used on the carburetor in the basic technical manual.
- (8) This issue carburetor does not incorporate a vinyl coated air diaphragm (120, figure 4-6) for ozone protection.
- (9) The main metering jet plug gasket (87, figure 4-6) on this issue is fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (10) The poppet valve seat gasket (99, figure 4-6) and regulator needle plug gasket (101) are fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (11) This issue does not incorporate a matched and leak tested discharge nozzle needle valve and seat (59 and 63, figure 4-6).
- (12) This issue carburetor incorporates a scribed discharge diaphragm adjustment screw to indicate factory adjustment.
- (13) This issue carburetor incorporates two diffusion tube attaching rivets (156, figure 4-6).
- (14) The poppet valve seat (96, figure 4-6) on this issue carburetor is not machined to receive the end of the poppet valve screen.
- (15) This issue incorporates a shipping plug (15, figure 4-6) instead of a pipe plug as used on the carburetor in the basic technical manual.
- (16) This issue carburetor incorporates a different part number manual mixture control needle valve (111, figure 4-6) which is not drilled for lockwiring. A different set screw (106) is used which is not drilled for lockwiring. A lead ball (105) is used on

#### **KEY TO FIGURE 4-6**

- 1. Seal Aluminum
- 2. Seal Aluminum
- 3. Locking Cup Enrichment valve and discharge nozzle
- 4. Plate Identification
- 5. Screw, Tapping Thread forming
- 7. Plate Automatic mixture control
- 8. Screw Machine
- 9. Washer
- 10. Gasket Automatic mixture control
- 11. Plug Pipe12. Plug Pipe
- 13. Plug Taper seat14. Plug Taper seat
- 15. Plug Pipe
- 16. Plug Pipe
- 17. Plug Machine thread
- 18. Plug Pipe
- 19. Plug Pipe
- 20. Plug Taper seat
- 21. Cover Assembly Pump diaphragm
- 22. Screw Machine
- 23. Washer
- 24. Spring Pump discharge
- 25. Diaphragm Assembly Pump
- 26. Valve Assembly Relief
- 27. Retainer, Valve Relief
- 28. Screw Machine
- 29. Valve Relief
- 30. Spring
- 31. Spacer Relief valve
- 32. Gasket Acceleration pump
- 33. Cover Assembly, Push Rod Idle
- 34. Screw Machine
- 35. Washer
- 36. Gasket, Cover Idle push rod
- 37. Pin Cotter
  38. Nut, Castellated Hex
- 39. Rod Assembly Idle push
- 40. Washer Spring retainer
- 41. Spring Discharge diaphragm
- 42. Washer Spring retainer
- 43. Plunger Idle valve
- 44. Cover Idle diaphragm
- 45. Screw Machine
- 46. Washer
- 47. Diaphragm Assembly Idle and enrichment valve
- 48. Spring Idle needle 49. Washer Lock
- 50. Seat Idle needle
- 51. Washer Nonmetallic
- 52. Screw Assembly Enrichment valve adjustment
- 53. Cover Assembly Metering needle
- 54. Screw Machine
- 55. Washer
- 56. Retainer Spring
- 57. Spring Discharge diaphragm
- 58. Diaphragm Assembly Pump
- 59. Valve Assembly Metering needle
- 60. Spring Discharge needle
- 61. Washer Lock

- 62. Nut Metering needle seat
- 63. Seat Needle discharge
- 64. Washer Nonmetallic
- 65. Plug Air bleed 66. Bleed Air
- 67. Packing Preformed
- 68. Nozzle Assembly Discharge
- 69. Screw Machine
- 70. Washer
- 71. Throat Assembly Venturi
- 72. Pin Cotter
- 73. Venturi Throat
- 74. Gasket Venturi throat
- 75. Reducer Automatic mixture control vacuum channel
- 76. Skirt Venturi
- 77. Gasket Venturi skirt
- 78. Pin Cotter
- 79. Washer Flat
- 80. Pin Cotter
- 81. Washer Flat
- 82. Washer Spring
- 83. Lever Assembly
- 84. Bushing Shoulder
- 85. Lever
- 86. Plug Hex head
- 87. Washer Nonmetallic
- 88. Jet Metering
- 89. Plug Machine thread
- 90. Washer Nonmetallic
- 91. Strainer Assembly
- 92. Screw Machine
- 93. Washer
- 94. Washer Lock
- 95. Valve and Seat Assembly Regulator
- 96. Seat Regulator needle
- 97. Valve Regulator needle
- 98. Spring Regulator needle
- 99. Washer Nonmetallic
- 100. Plug Regulator needle
- 101. Washer Nonmetallic
- 102. Cover Regulator 103. Diaphragm Assembly Regulator
- 104. Needle and Link Assembly -Mixture control
- 105. Ball
- 106. Pin Dog point
- 107. Cam Fuel cut-off
- 108. Link Assembly Mixture control
- 109. Plug Mixture control needle valve
- 110. Spring Altitude control needle
- 111. Valve Mixture control
- 112. Seat Mixture control
- 113. Washer Nonmetallic
- 114. Lever Assembly Fuel cut-off
- 115. Regulator Assembly Spacer
- 116. Bushing Regulator spacer
- 117. Spacer Regulator
- 118. Plunger Spring release
- 119. Spring, Plunger Idle cut-off
- 120. Diaphragm Assembly
- 121. Plug Taper seat
- 122. Pin, Straight Headless
- 123. Spring Idle cut-off lever

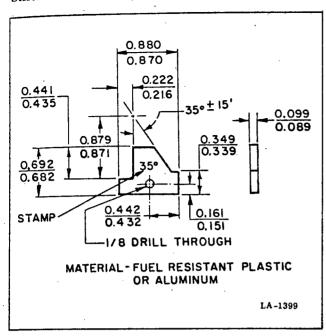


Figure 4-7. Dimensions for Manufacturing the T25939 Gage

this issue to retain the set screw instead of lockwiring. The manual mixture control assembly (104) is assembled before installation into the carburetor to facilitate installation of the lead ball (105).

(17) This issue incorporates a different part number diaphragm assembly (103, figure 4-6).

- (18) This issue carburetor does not incorporate the discharge nozzle locking cup (3, figure 4-6).
- (19) This carburetor incorporates a different spacer and bushing assembly (115, figure 4-6) which accommodates a pipe plug (20) instead of a taper seat plug.
- (20) This issue carburetor may or may not incorporate a loose idle lever assembly (139, figure 4-6) which is drilled for lockwiring.

OVERHAUL PROCEDURES, Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-8), Flow Limits Sheet (figure 4-9) and History Sheet (figure 4-10).

a. Use the T25939 gage to establish the opening point of the idle and power enrichment valve as described in paragraph 3-12, i.

#### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-7.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C

ENGINE MODEL: 0-470 ENGINE MFGR.: Continental

DRAWING NUMBER: 380223 DATE ISSUED: 11-3-50

	ENGINE MFGR.: Continental		DATE	ISSUED: 11-3-50
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	384607	1.	
2.	Jet, Main Metering	390188	2.	Size: No. 44 - 627CC
3.	Seat, Idle	383886	3.	Size: 0.120"; 1190-1214
4.	Valve Assembly, Idle	384675	4.	1 5.20. 0,120 , 1100-1214
5.	Seat, Manual Mixture Control Needle	384967	5.	Size: 0, 124" - 0, 126"
6.	Needle, Manual Mixture Control	384968		Size: 0.124 - 0.126
7.			6.	
٠.	Needle & Seat Assy., Poppet Valve	384836	7.	· ·
	Seat, Poppet Valve	384138		Size:
	Valve, Poppet	384142		
8.	Nozzle Assembly, Discharge	384961	8.	
	Seat, Discharge Nozzle	383924		Size: 0.112"
	Valve, Discharge Nozzle	383474		
9.	Bleeder, Discharge Nozzle Air	383922	9.	
10.	Reducer, Vacuum	384606	10.	Size: No. 44
. 11.	Vapor Vent		11.	Size: No. 70, Drilled in 383483
	'	1		Regulator Cover.
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625" ± 0.002"
13.	Washer, Regulator Spring Adjustment	384819	13.	Oat Diameter: 1.025" ± 0.002"
14.	Strainer Assembly, Fuel	364858	14.	
15.	Loose Lever Assembly, Idle Control Rod			
10.	LOODE LEVEL ADDELINITY, ILLE COULTOI ROU	364974	15.	
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	SPRING IDENTIFICATION	1		
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: 0.8125" ± .010"
		1		L.D. 0.296" ± .003"
2.	Spring, Discharge Needle	383514	2.	Free Length: 0.5625" ± .031"
	1,		"	O, D, 0, 4375" ± .010"
3.	Spring, Discharge Diaphragm	383515	3.	Free Length: 1.875" ± .062"
			"	L.D. 0.516" - 0+.016"
4.	Spring, Manual Mixture Control Needle	383516	4.	
	Spring, semicus services of one of thousand	000010	7.	Free Length: 2.750" ± .010"
5.	Spring, Pump Diaphragm	202517		L.D. 0.193" ± .003"
٥.	opring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
	Coming Donald Wales	*****	_	L.D. 0.516" ± .010"
6.	Spring, Poppet Valve	383518	6.	Free Length: 0.875" ± .010"
				O.D. 0.188" ± .003"
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
				L.D. 0.988" - 0+.031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: 0.375" ± .015"
			]	O. D. 0.301" ± .003"
. 9.	Spring, Idle	383515	9.	Free Length: 1.875" ± .062"
		!		L.D. 0.516" - 0+.016"
10.	Spring, Loose Lever to Throttle	383853	10.	
11.	Spring, Idle Cut-Off Lever	384141	11.	
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Figure 4-8. Carburetor Specification Sheet Parts List 380223-3

	INJECTION	CARBURETOR FLOW BENCH TEST
Engine Model: O-470	Fuel Inlet Pressure: 10 psi	Parts List No.: Carb. Model:
Engine Migr. Setting: 530486	Limits Based on. 73	Limits Based on 734 ± . 002 Specific Gravity at 75 ± 5 °F. Date Issued: 3-3-58
	NAPHTHA	Flow limits for Issues 2 through 6 are identical.
Test Point No. 1	2 3 4	5 6 7 8 9 10
Metering Suction Inches of Water 0.7	0.7 1.6 3.1	7. 25 13.4 13.4 20.8 30.9 36.9
	300	600 800 800 1000 1200
_	ρ	α α α
no	L	1/2
ø	150	250 300 300 500 500
Min.		29.4 27.1 20.8 33.6 28.0
Limits Max. 31.0	29.8 33.4	4 31.2 28.7 23.0 35.7 29.8 27.4
Seconds Obs.		
ter	No 29.4 34.85 46.7	60.8 76.2 81.6
Limits Max. 29.9	Flow 31. 2 36.95 49.5	
In Obs.		
+	12.2	2 36.2 77.0
_	13.4	39.4
Inches of		
ruei Cos.		Multi-Point Automatic Mixture Control Calibration Limits:
		Flow Method:
	-	Data Jeemad:
		השנת שפחותה.
CAUTION		Density: Low (Lean) Limit: High (Rich) Limit:
These limits are based on flow bench checking	on flow bench checking	Notes: 1. Check Points 3 through 7 are made with throttle valve in 1/2 open position.
the carburetor in the same as when it is installed on taircraft.	name relative position on the engine in the	2. At Check Point 7, open vapor vent and measure total flow. All other points vapor vent is closed.
PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	up-draft units and are ge nozzle up.	3. At Check Point 8, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.
		4. Check Points 1, 2, 8 9 and 10 are made with throttle valve in the wide open position

Figure 4-9. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 380223-3

Engine Mfgr.:	Continental	Engine Model: O-470
ISSUE 1		
Serial 1	7-25-47	Parts list released to production.
Serial 2	10-27-47	Parts list records change only.
Serial 3	12- 5-47	Parts list records change only.
ISSUE 2		
Serial 4	12-19-47	Discharge nozzle air bleeder seal 390267 changed to 250-S-5 to provide an improved seal.
Serial 5	5- 7-48	Parts list records change only.
Serial 6	5- 5-49	Parts list records change only.
ISSUE 3		
Serial 7	9- 9-49	Loose lever assembly 383845 changed to 364378 to incorporate an adjustable enrichment valve actuating screw.
Serial 8	2- 9-50	Parts list records change only.
	5-11-50	Parts list records change only.
Serial 10	8-24-50	Parts list records change only.
Serial 11	9- 7-50	Parts list records change only.
Serial 12	10-18-50	Fuel strainer 383520 changed to 364858 assembly to provide an improved filter.
Serial 13	12-14-50	Parts list records change only.
Serial 14	12-21-51	Discharge nozzle air bleeder seal 250-S-5 changed to 315-S-5 to specify improved material.
Serial 15	1-29-51	Loose lever assembly 364378 changed to 364974 to allow for lockwire.
Serial 16	8- 2-51	Poppet valve seat and plug gasket P3260 changed to P5319 to facilitate assembly.
Serial 17	1-18-52	Parts list records change only.
Serial 18	5- 1-52	Fuel strainer plug gasket P22851 changed to 365533 to provide improved
		material.
Serial 19	10-16-52	Parts list records change only.

Figure 4-10. Carburetor History Sheet Parts List 380223-3

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INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this carburetor. The following tool is used in addition:

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-11	5220

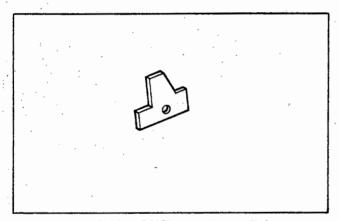


Figure 4-11. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-4 Specification Sheet (figure 4-13) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 2-9).
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (142, figure 2-9) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead of a 200 mesh screen as used in the carburetor in the basic technical manual.

- (4) This issue carburetor incorporates a different idle power enrichment diaphragmand needle assembly (47, figure 2-9).
- (5) This issue does not incorporate a relief valve assembly (26, figure 2-9) and gasket (32, figure 2-9).
- (6) This issue carburetor incorporates a different size main metering jet (88, figure 2-9).
- (7) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 2-9), discharge diaphragm adjusting screw assembly (52), throttle stop assembly (135), idle speed adjusting screw assembly (133) and idle control rod adjusting screw assembly (134). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used in the carburetor in the basic technical manual.
- (8) This issue carburetor does not incorporate a vinyl coated air diaphragm (118, figure 2-9) for ozone protection.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

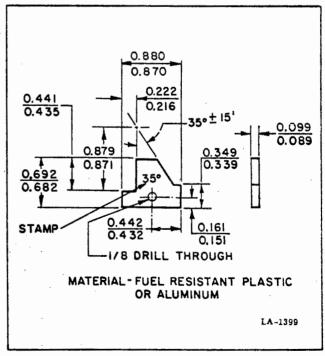


Figure 4-12. Dimensions for Manufacturing the T25939 Gage

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-13), Flow Limits Sheet (figure 4-14) and History Sheet (figure 4-15).

a. Use the T25939 gage to establish the opening point of the idle and power enrichment valve as described in paragraph 3-12, i.

#### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-12.

PREPARATION FOR STORAGE, PACKAGING ANI RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

380223-4

#### SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 380223 DATE ISSUED: 8-24-53

	ENGINE MFGR.: Continental		DATE	1580ED: 8-24-53
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
				SIZE, SETTING OR REMARKS
1.	Main Body Assembly	384607	1.	
2.	Jet, Main Metering	390188	2.	Size: No. 44 - 627CC
. 3.	Seat, Idle	383886	3.	Size: 0.120"; 1190-1214
4.	Valve Assembly, Idle	384675	4.	,
5.	Seat, Manual Mixture Control Needle	384967	5.	Size: 0.124" - 0.126"
6.	Needle, Manual Mixture Control	366291	6.	
7.	Needle & Seat Assy., Poppet Valve	366382	7.	* •
	Seat, Poppet Valve	366381	i ''	Size:
- 1	Valve, Poppet	384142		bize.
8.	Nozzle Assembly, Discharge	384961	8.	
٠. ا	Seat, Discharge Nozzle			g. 0.440
1		383924	f .	Size: 0.112"
	Valve, Discharge Nozzle	383474		
9.	Bleeder, Discharge Nozzle Air	383922	9.	
10.	Reducer, Vacuum	384606	10.	Size: No. 44
11.	Vapor Vent	1	11.	Size: No. 70, Drilled in 383483
- '}	· ·			Regulator Cover.
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625" ± 0.002"
13.	Washer, Regulator Spring Adjustment	384819	13.	2.m Out Dameter, 1,020 ±0.002
14.	Strainer Assembly, Fuel	364858	14.	
15.	Loose Lever Assembly, Idle Control Rod			
13.	Loose Level Assembly, Inte Control Rod	364974	15.	
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	SPRING IDENTIFICATION	. •		
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: 0.8125" ± .010"
	•	i	i i	L.D. 0.296" ± .003"
2.	Spring, Discharge Needle	383514	2.	Free Length: 0.5625" ± .031"
				O. D. 0. 4375" ± .010"
3.	Spring, Discharge Diaphragm	383515	3.	Free Length: 1.875" ± .062"
	abraid, a maining a mining man	1 0000	. "	
4.	Spring, Manual Mixture Control Needle	383516	4.	L.D. 0.516" - 0+.016"
7.	Spring, Manual Mixture Control Needle	202210	<del>*</del> •	Free Length: 2.750" ± .010"
	Santa - Duan Diankan	000545	l <u>.</u> I	L.D. 0.193" ± .003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
		1	1	L.D. 0.516" ± .010"
6.	Spring, Poppet Valve	383518	6.	Free Length: 0.875" ± .010"
		1		O.D. 0.188" ± .003"
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
				L.D. 0.988" - 0+.031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: 0.375" ± .015"
			"	O. D. 0.301" ± .003"
9.	Spring, Idle	383515	9.	
٠.	okrane, min	202212	9.	Free Length: 1.875" ± .062"
10.	Spring Toogo Lover to Throttle	200050	1,,	I.D. 0.516" - 0,+ .016"
	Spring, Loose Lever to Throttle	383853	10.	•
11.	Spring, Idle Cut-Off Lever	384141	11.	
		1		
	•	•	•	•

								٠.			
	Parts List No.: 380223-2 through -6 Carb. Model: ps-5C Date Issued: 3-3-58 through 6 are identical.					ration Limits:			Check Points 3 through 7 are made with throttle valve in 1/2 open position.  At Check Point 7, open vapor vent and measure total flow. All other points vapor vent is closed.	At Check Point 8, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.	9 and 10 are made with throttle valve in the wide open
INJECTION CARBURETOR FLOW BENCH TEST	Specific Gravity at 75 ± 5 Flow limits for	3.1 7.25 13.4 13.4 20.8 30.9 36.9	600 800 800 1000 1200 R R R R R	1 1/2 1/2 1/2 WO WO TO	46.7 60.8 76.2 81.6 49.5 64.4 83.8 86.5 36.2	4	Flow Method: Date Issued:	Density: Low (Lean) Limit: High (Rich) Limit:	Notes: 1. Check Points 3 through 7 are made with throttle valve in 1/ 2. At Check Point 7, open vapor vent and measure total flow. vapor vent is closed.	3. At Check Point 8, position enricing and enrichment valve stem with position.	4. Check Points 1, 2, 8 9 and 10 are position
INECTION		0.7 0.7 1.6 3	200 300	WO         WO         I/2           e 150         150         150           29, 2         28, 0           31, 0         29, 8	28.2 No 29.4 29.9 Flow 31.2			CAUTION	These limits are based on flow bench checking the carburetor in the same relative position as when it is installed on the engine in the aircraft.	PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	
•	Engine Model: 0-470 Engine Mfgr.: Continental Engine Mfgr. Setting: 530486	Test Point No. Metering Suction Inches of Water	Corresponding Air Flow Lb./Hr. Mixture Control Lever Position	Throttle Position Burette Volume Time Min. Limits Max.	s s Ir.	Head Max. Inches of Fuel Obs.	· · · · · · · · · · · · · · · · · · ·		These ilmits the carbure as when it alreaft.	PS-5C carb	· · ·

Figure 4-14. Carburetor Flow Bench Test Shect (Naphtha) Parts List 380223-4

	Engine M	fgr.:	Continental	Engine Model: O-470
	ISSUE 1			
	Serial	1	7-25-47	Parts list released to production.
	Serial		10-27-47	Parts list records change only.
	Serial		12- 5-47	Parts list records change only.
	7007TE 0			
	ISSUE 2		10 10 17	Dischaus manie de bissier and 200000 charact to 050 G E to monido on
	Serial	. 4	12-19-47	Discharge nozzle air bleeder seal 390267 changed to 250-S-5 to provide an improved seal.
	Serial	5	5- 7-48	Parts list records change only.
	Serial		5- 5-49	Parts list records change only.
	ISSUE 3			
	Serial	7	9- 9-49	Loose lever assembly 383845 changed to 364378 to incorporate an adjustable
	Se, I ai	•	0- 0-40	enrichment valve actuating screw.
	Serial	Ω	2- 9-50	Parts list records change only.
	Serial		5-11-50	Parts list records change only.
	Serial		8-24-50	Parts list records change only.
	Serial		9- 7-50	Parts list records change only.
	Serial	12	10-18-50	Fuel strainer 383520 changed to 364858 assembly to provide an improved
			10 11 50	filter.
	Serial		12-14-50	Parts list records change only.
	Serial	14	12-21-51	Discharge nozzle air bleeder seal 250-S-5 changed to 315-S-5 to specify improved material.
	Serial	15	1-29-51	Loose lever assembly 364378 changed to 364974 to allow for lockwire.
	Serial		8- 2-51	Poppet valve seat and plug gasket P3260 changed to P5319 to facilitate
	G(-)			assembly.
	Serial		1-18-52	Parts list records change only.
	Serial	18	5- 1-52	Fuel strainer plug gasket P22851 changed to 365533 to provide improved material.
	Serial	19	10-16-52	Parts list records change only.
	ISSUE 4			
	Serial	30 ·	8-24-53	Regulator spacer and bushing assembly 383946 changed to 365796 and spacer
	Serial	20	0-24-55	plug P8508 changed to P60000 taper seat plug, to eliminate possibility of
				cracking spacer from overtorque of the pipe threaded plug and/or test fitting.
	Serial	01	10-22-53	Parts list records change only.
	Serial		10-26-53	Parts list records change only.
	Serial		8- 9-54	Parts list records change only.
	Serial	24	9-19-55	Manual mixture control needle valve 384968 changed to 366291 and idle
				cut-off cam attaching screw 383504 changed to 366290 dog point pin and
				P19983 lead ball eliminated to improve cam attaching.
	Serial	25	9-28-55	Parts list records change only.
	Serial	<b>2</b> 6	2-10-56	Plug 396660 removed from fuel pressure connection and replaced with
				plug P-8503. Plug P-8503 added to vapor vent and drain, per request
				of engine manufacturer.
	Serial	27	3-20-56	Seat and needle assembly - regulator 384836 replaced with assembly
				366382. Seat (regulator needle) 384138 replaced with seat 366381, to
				accommodate poppet screen 366373.
	Serial	28	4-19-56	Diffusion tube attaching rivets removed, holes eliminated from main body of
	Deirai	20 .	1-10-00	new production units.
	Somial	20	6- 5-56	Scribe line and prick punch markings removed from discharge nozzle adjust-
•	Serial	49	0- 0-00	ing screw bushing. Change made to prevent possible damage and leakage
		20	11 07 50	around the bushing.
	Serial		11-27-56	To provide a leak tested matched discharge needle and seat assembly.
	Serial		12-26-56	Parts list correction.
	Serial	32	1- 7-57	Regulator needle valve seat gasket material changed to improve fuel sealing at this location.
	Serial	33	2-20-57	Gasket material changed in main metering jet and power enrichment valve
			# - # U - U I	seat gaskets to provide a more positive fuel seal.

Figure 4-15. Carburetor History Sheet Parts List 380223-4

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this Carburetor. The following tool is used in addition:

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-16	5220

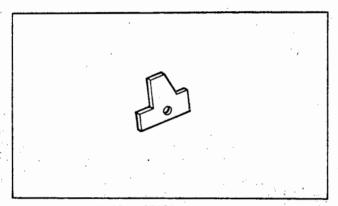


Figure 4-16. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-5 Specification Sheet (figure 4-18) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 2-9).
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (142, figure 2-9) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead of a 200 mesh screen as used on the carburetor in the basic technical manual.

- (4) This issue carburetor incorporates a different idle power enrichment diaphragm and needle assembly (47, figure 2-9).
- (5) This issue does not incorporate a relief valve assembly (26, figure 2-9) and gasket (32, figure 2-9).
- (6) This issue carburetor incorporates a different size main metering jet (88, figure 2-9).

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-18), Flow Limits Sheet (figure 4-19) and History Sheet (figure 4-20).

a. Use the T25939 gage to establish the opening point of the idle and power enrichment valve as described in paragraph 3-12, i.

#### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-17.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

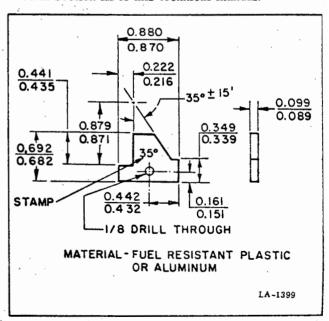


Figure 4-17. Dimensions for Manufacturing the T25939 Gage

## Difference Data Sneet

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### SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 380223-5

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 380223 DATE ISSUED: 7-22-59

	ENGINE MFGR.: Continental		DATE	ISSUED: 7-22-59	
ITEM	· · · · · · · · · · · · · · · · · · ·	PART	ITEM		
NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARK	KS
1,	Main Body Assembly	384607	1,		
2.	Jet, Main Metering	390188	2.	Size: 44	
3.	Seat. Idle & Power Enrichment Valve	383886	3.	5126, 44	
4.	Dia. Assy Idle & Power Enrichment	384675	4.		
5.	Seat, Manual Mixture Control Needle	384967	5.		
6.	Valve, Manual Mixture Control	366291	6.		
	Needle & Seat Assy., Poppet Valve				
7.		366382	7.		
	Seat, Poppet Valve	366381			
8.	Valve, Poppet Seat Assy. Discharge Nozzle	384142			
. 0.	Seat, Discharge Nozzle	366476 383924	8.		
	Valve, Discharge Nozzle				
9.	Bleeder, Discharge Nozzle Air	383474	ابا		
10.		383922	9.	St 44	
	Reducer, Vacuum	384606	10.	Size: 44	
11.	Vapor Vent	004500	11.	Size: No. 70 drilled in 383483 reg.	cover
12.	Venturi Throat Assy.	384599	12.	Throat Diameter: 1.625" ± .002"	
13.	Washer, Regulator Spring Adjustment	384819	13.	<u>.                                    </u>	
14.		ŀ	14.	Not used.	
15.	Automatic Mixture Control Assy.		15.	Not used.	•
16.	Strainer Assy., Fuel	364858	16.		
17.	Lever, Throttle	390248	17.	·	
	• •				
	i i				
- 1	CDDDIC IDENTIFICATION				
	SPRING IDENTIFICATION Spring, Idle Cut-Off Plunger	000510			
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010"	
2.	Cautan Dischause Mandle	000514		ID: .296" ± .003"	
. 4.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031"	
	Caulan Diaskana Manala			OD: .4375" ± .010"	
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"	. •
	Santon Monard Milaton Control		. 1	ID: .516" - 0 + .016"	
4.	Spring, Manual Mixture Control	383516	4:	Free Length: 2.750" ± .063"	
	Canta a Doman Disirbus mas		_	ID: .193" ± .005"	
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"	
	Cantain Donald VI. lan			ID: .516" ± .010"	
6.	Spring, Poppet Valve	383518	6.	Free Length: .875" ± .010"	
	Control Demolster Discharge		_	OD: .188" ± .003"	
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"	
,		l í	_	ID: .938" - 0 + .031"	
8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"	
			_	OD: .301" ± .003"	
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"	
				ID: .516" - 0 + .016"	
10.	Spring, Loose Lever to Throttle Stop	383853	10.	•	
1				•	
11.	Spring, Idle Cut-Off Lever	384141	11.		
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Figure 4-18. Carburetor Specification Sheet Parts List 380223-5

	INJECTION	N CARBURETOR FLOW BENCH	H TEST		
Engine Model: O-470 Engine Mgr.: Continental Engine Mgr. Settling: 530486	Fuel Inlet Pressure: Nozzle Pressure: Limits Based on 734	fuel Inlet Pressure: 10 psi Vozzle Pressure: Amits Based on 734 ± .002 Specific Gravity at 75 ± 5 °F.	à.	Carb. Model: ps-5C Date Issued: 3-3-58	380223-2 through -6 PS-5C 3-3-58
	NAPHTHA	Flow limits	Flow limits for Issues 2 through 6 are identical.	are identical.	
Test Point No. 1	2 3	4 5 6 7 8 9	10		
Metering Suction Inches of Water 0.7	0.7   1.6   3	3.1 7.25 13.4 13.4 20.8 30.9	98.9		-
Corresponding Air Flow Lb./Hr. 200	200 300 4	800 1000			
-		200	+		-
+	$\pm$	R R R R	В		
Aurette (Volume 150	150 150 9		-1-		
Min.	T-	29 4 27 1	26.9		
s Max.		31. 2 28. 7 23.0 35.7			
In Seconds Obs.					
er	No 29 4 34	29 4 34 85 46 7 60 8 76 2 81 8 97	97 9 106 5		
Max.		64.4 83.8 86.5	103.8 111.0		
In The /Hr Ohe					
╀	17	12.2 36.2 77.0	0		-
	13	39. 4	a		
nches of Chs.	-				
		Multi-Point Automatic Mixture Control Calibration Limits	Control Calibration L	imits:	
		Flow Method:			
		Date Issued:			
CAUTION		Density: Low (Lean) Limit: High (Rich) Limit:			
These limits are based on flow bench checking	low bench checking	Notes: 1. Check Points 3 thro	Check Points 3 through 7 are made with throttle valve in $1/2$ open position.	rottle valve in 1,	/2 open position.
the carburetor in the same relative position as when it is installed on the engine in the aircraft.	e relative position the engine in the	2. At Check Point 7, op vapor vent is closed	open vapor vent and measure total flow. ed.	asure total flow	All other points
PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	Iraft units and are ozzle up.	3. At Check Point 8, po and enrichment valv position.	At Check Point 8, position eurichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.	ve actuating scre ilve set at 35° fr	w to contact idle om the wide oper
		4. Check Points 1, 2, 8 position	Check Points 1, 2, 8 9 and 10 are made with throttle valve in the wide open	h throttle valve	in the wide open

Figure 4-19. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 380223-5

	Engine Migr.	: Continental	Engine Model: O-470
	ISSUE 1		
	Serial 1	7-25-47	Parts list released to production.
	Serial 2	10-27-47	Parts list records change only.
	Serial 3	12- 5-47	Parts list records change only.
	Dellar 0	12 0 11	Tarib ribe rootab onlings only
	ISSUE 2		A.
	Serial 4	12-19-47	Discharge nozzle air bleeder seal 390267 changed to 250-S-5 to provide an improved seal.
	Serial 5	5- 7-48	Parts list records change only.
	Serial 6	5- 5-49	Parts list records change only.
	ISSUE 3		
	Serial 7	9- 9-49	Loose lever assembly 383845 changed to 364378 to incorporate an adjustable enrichment valve actuating screw.
	Serial 8	2- 9-50	Parts list records change only.
	Serial 9	5-11-50	Parts list records change only,
	Serial 10	8-24-50	Parts list records change only.
	Serial 11	9- 7-50	Parts list records change only.
	Serial 12	10-18-50	Fuel strainer 383520 changed to 364858 assembly to provide an improved
	501141 14	20 20 00	filter.
	Serial 13	12-14-50	Parts list records change only.
	Serial 14	12-21-51	Discharge nozzle air bleeder seal 250-S-5 changed to 315-S-5 to specify improved material.
	Serial 15	1-29-51	Loose lever assembly 364378 changed to 364974 to allow for lockwire.
	Serial 16	8- 2-51	Poppet valve seat and plug gasket P3260 changed to P5319 to facilitate assembly.
	Serial 17	1-18-52	Parts list records change only.
	Serial 18	5- 1-52	Fuel strainer plug gasket P22851 changed to 365533 to provide improved
			material.
	Serial 19	10-16-52	Parts list records change only.
	recure 4	:	
	ISSUE 4 Serial 20	8-24-53	Regulator spacer and bushing assembly 383946 changed to 365796 and spacer
	Serial 20	0-24-00	plug P8508 changed to P60000 taper seat plug, to eliminate possibility of
	G:-1 01 ·	10 00 52	cracking spacer from overtorque of the pipe threaded plug and/or test fitting.
	Serial 21	10-22-53	Parts list records change only.
	Serial 22	10-26-53	Parts list records change only.
	Serial 23	8- 9-54	Parts list records change only.
	Serial 24	9-19-55	Manual mixture control needle valve 384968 changed to 366291 and idle
			cut-off cam attaching screw 383504 changed to 366290 dog point pin and
	· Comic1 OF	0_20 55	P19983 lead ball eliminated to improve cam attaching.
	Serial 25	9-28-55	Parts list records change only.
	Serial 26	2-10-56	Plug 396660 removed from fuel pressure connection and replaced with plug P-8503. Plug P-8503 added to vapor vent and drain, per request of engine manufacturer.
	Serial 27	3-20-56	Seat and needle assembly - regulator 384836 replaced with assembly
	Berrar 21	3-20-30	366382. Seat (regulator needle) 384138 replaced with seat 366381, to accommodate poppet screen 366373.
	Serial 28	4-19-56	Diffusion tube attaching rivets removed, holes eliminated from main body of
			new production units.
	Serial 29	6- 5-56	Scribe line and prick punch markings removed from discharge nozzle adjust-
			ing screw bushing. Change made to prevent possible damage and leakage around the bushing.
	Serial 30	11-27-56	To provide a leak tested matched discharge needle and seat assembly.
	Serial 31	12-26-56	Parts list correction.
	Serial 32	1- 7-57	Regulator needle valve seat gasket material changed to improve fuel sealing at this location.
-	Serial 33	2-20-57	Gasket material changed in main metering jet and power enrichment valve seat gaskets to provide a more positive fuel seal.

Figure 4-20. Carburetor History Sheet Parts List 380223-5 (Sheet 1 of 2)

380223

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

Engine Migr.: Continental

Engine Model: O-470

Various adjusting screws changed to a finer thread to provide more exact adjustment.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-4 Specification Sheet (figure 4-22) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES. (See figure 4-21)

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 4-21).
- (2) The throttle shaft bushings (150 and 151, figure 4-21) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (144 figure 4-21) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 4-21) instead of a 200 mesh screen as used in the carburetor in the basic technical manual.
- (4) The main metering jet plug gasket (87, figure 4-21) on this issue is fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (5) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 4-21), discharge diaphragm adjusting screw assembly (52), throttle stop assembly (139), idle speed adjusting screw assembly (135) and idle control rod adjusting screw assembly (136). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used on the carburetor in the basic technical manual.
- (6) The poppet valve seat gasket (99, figure 4-21) and regulator needle plug gasket (101) are fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (7) This issue does not incorporate a matched and leak tested discharge nozzle needle valve and seat (59 63, figure 4-21).

- (8) This issue carburetor does not incorporate a vinyl coated air diaphragm (120, figure 4-21) for ozone protection.
- (9) The poppet valve seat (96, figure 4-21), on this issue carburetor is not machined to receive the end of the poppet valve screen.
- (10) This issue carburetor incorporates a scribed discharge diaphragm adjustment screw to indicate factory adjustment.
- (11) This issue carburetor incorporates a different part number manual mixture control needle valve (111, figure 4-21) which is not drilled for lockwiring. A different set screw (106) is used which is not drilled for lockwiring. A lead ball (105) is used on this issue to retain the set screw instead of lockwiring. The manual mixture control assembly (104) is assembled before installation into the carburetor to facilitate installation of the lead ball (105).
- (12) This issue incorporates a different part number diaphragm assembly (103, figure 4-21).
- (13) This carburetor incorporates a different spacer and bushing assembly (115, figure 4-21) which accommodates a pipe plug (20) instead of a taper seat plug.
- (14) This issue incorporates a shipping plug (15, figure 4-21) instead of a pipe plug as used on the carburetor in the basic technical manual.
- (15) This issue carburetor incorporates two diffusion tube attaching rivets (156, figure 4-21).

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-22) and History Sheet (figure 4-23). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

#### **KEY TO FIGURE 4-21**

- 1. Seal Aluminum
- 2. Seal Aluminum
- 3. Locking Cup Enrichment valve and discharge nozzle
- 4. Plate Identification
- 5. Screw, Tapping Thread forming
- 7. Plate Automatic mixture control
- 8. Screw Machine
- 9. Washer
- 10. Gasket Automatic mixture control
- 11. Plug Pipe
- 12. Plug Pipe
- 13. Plug Taper seat
- 14. Plug Taper seat
- 15. Plug Pipe
- 16. Plug Pipe
- 17. Plug Machine thread

- 18. Plug Pipe
  19. Plug Pipe
  20. Plug Taper seat
  21. Cover Assembly Pump diaphragm
- 22. Screw Machine
- 23. Washer
- 24. Spring Pump discharge
- 25. Diaphragm Assembly Pump
- 26. Valve Assembly Relief
- 27. Retainer, Valve Relief
- 28. Screw Machine 29. Valve Relief
- 30. Spring
- 31. Spacer Relief valve
- 32. Gasket Acceleration pump
- 33. Cover Assembly, Push Rod Idle
- 34. Screw Machine
- 35. Washer
- 36. Gasket, Cover Idle push rod
- 37. Pin Cotter
- 38. Nut, Castellated Hex
- 39. Rod Assembly Idle push
- 40. Washer Spring retainer
- 41. Spring Discharge diaphragm
- 42. Washer Spring retainer
- 43. Plunger Idle valve
- 44. Cover Idle diaphragm
- 45. Screw Machine
- 46. Washer
- 47. Diaphragm Assembly Idle and enrichment valve
- 48. Spring Idle needle
- 49. Washer Lock
- 50. Seat Idle needle
- 51. Washer Nonmetallic
- 52. Screw Assembly Enrichment valve adjustment
- 53. Cover Assembly Metering needle
- 54. Screw Machine
- 55. Washer
- 56. Retainer Spring
- 57. Spring Discharge diaphragm
- 58. Diaphragm Assembly Pump
- 59. Valve Assembly Metering needle
- 60. Spring Discharge needle
- 61. Washer Lock

- 62. Nut Metering needle seat
- 63. Seat Needle discharge
- 64. Washer Nonmetallic
- 65. Plug Air bleed
- 66. Bleed Air
- 67. Packing Preformed
- 68. Nozzle Assembly Discharge
- 69. Screw Machine
- 70. Washer
- 71. Throat Assembly Venturi
- 72. Pin Cotter
- 73. Venturi Throat
- 74. Gasket Venturi throat
- 75. Reducer Automatic mixture control vacuum channel
- 76. Skirt Venturi
- 77. Gasket Venturi skirt
- 78. Pin Cotter
- 79. Washer Flat
- 80. Pin Cotter
- 81. Washer Flat
- 82. Washer Spring
- 83. Lever Assembly
- 84. Bushing Shoulder
- 85. Lever
- 86. Plug Hex head
- 87. Washer Nonmetallic
- 88. Jet Metering
- 89. Plug Machine thread
- 90. Washer Nonmetallic
- 91. Strainer Assembly 92. Screw - Machine
- 93. Washer
- 94. Washer Lock
- 95. Valve and Seat Assembly Regulator
- 96. Seat Regulator needle
- 97. Valve Regulator needle
- 98. Spring Regulator needle
- 99. Washer Nonmetallic
- 100. Plug Regulator needle
- 101. Washer Nonmetallic
- 102. Cover Regulator
- 103. Diaphragm Assembly Regulator
- 104. Needle and Link Assembly -Mixture control
- 105. Ball
- 106. Pin Dog point
- 107. Cam Fuel cut-off
- 108. Link Assembly Mixture control
- 109. Plug Mixture control needle valve
- 110. Spring Altitude control needle
- 111. Valve Mixture control
- 112. Seat Mixture control
- 113. Washer Nonmetallic
- 114. Lever Assembly Fuel cut-off
- 115. Regulator Assembly Spacer
- 116. Bushing Regulator spacer 117. Spacer Regulator 118. Plunger Spring release

- 119. Spring, Plunger Idle cut-off
- 120. Diaphragm Assembly
- 121. Plug Taper seat
- 122. Pin, Straight Headless

#### 391318-4

## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 12-1-53

	٠.	ENGINE MFGR.: Continental	;	DATE	E ISSUED: 12-1-53	
-	ITEM		PART	ITEM		
	NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS	
-	1.	Main Body Assembly	384607	1.		
	2.	Jet, Main Metering	390188		Size: 43	
. :	3.	Seat, Idle	383886	3.	Size: 0. 121"-0. 123"	
	4.	Valve Assembly, Idle	364969	4.		
	5.	Seat, Manual Mixture Control	384967		Size: 0.124"-0.126"	
	6.	Needle, Manual Mixture Control	384968	6.		
	7.	Needle & Seat Assy., Poppet Valve Seat, Poppet Valve	384836 384138	7.	Size: 0.080"-0.082"	
	ı	Valve, Poppet	384142		15126. 0.000 -0.002	
	8.	Nozzle Assembly, Discharge	384961	8.	•	
	.	Seat, Discharge Nozzle	383924		Size: 0.112"-0.114"	
		Valve, Discharge Nozzle	383474			
	9. 10.	Bleeder, Discharge Nozzle Air Reducer, Vacuum	383922	9.	G1 44	
	11.	Vapor Vent	384606	10. 11.	Size: 44 Size: No. 70 hole drilled in 383483 Reg.	
		vapor vone	i j	**.	Cover	
	12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1. 625" ± 0. 002"	
	13.	Washer, Regulator Spring Adjustment	384819	13.		
	14.	Valve Assembly, Pump Relief	364164	14.	•	
	15.   16.	Strainer Assembly, Fuel Loose Lever Assembly, Idle Control Rod	364858 364974	15. 16.		
		Loose Devel Assembly, Inte Control Ind	304914	10.		
				1	•	
				- 1	••	
	· 1		1	. [		
		SPRING IDENTIFICATION				
	1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: 0.8125"± 0.010",	
				. }	ID 0.296" ± 0.003"	
	2.	Spring, Discharge Needle	383514	2.	Free Length: 0.5625" ± 0.031",	
	3.	Spring, Discharge Diaphragm	202515	. 1	OD 0.4375" ± 0.010"	
	٠,١	Spring, Discharge Diaphragm	383515	3.	Free Length: 1.875" ± 0.062", ID 0.516"-0+0.016"	
	4.	Spring, Manual Mixture Control Needle	383516	4.	Free Length: 2.750" ± 0.010",	
	1	. 0,			ID 0.193" ± 0.003"	
	5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± 0.0625",	
	6.	Spuing Bornet Value	000510	.	ID 0.516" ± 0.010"	
	0.	Spring, Poppet Valve	383518	6.	Free Length: 0.875"± 0.010",	
	7.	Spring, Regulator Diaphragm	383519	7.	OD 0.188" ± 0.003" Free Length: 1.937" ± 0.062",	
			100010		ID 0.988"-0+0.031"	
	8.	Spring, Idle Needle Valve	384629	8.	Free Length: 0.375"± 0.015",	
	_	Seeden V.D.		. 1	OD 0.301" ± 0.003"	
	9.	Spring, Idle	383515	9.	Free Length: 1.875" ± 0.062",	
	10.	Spring, Loose Lever to Throttle	383853	10.	ID 0.516"-0+0.016"	
	11.	Spring, Idle Cut-Off Lever	384141	11.		
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Figure 4-22. Carburetor Specification Sheet Parts List 391318-4

ENGINE MFGR.: Continental	ENGINE MODEL: O-470
ISSUE 1	
Serial 1 7-25-50	First production release.
Serial <b>2</b> 8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory straining of fuel.
ISSUE 2	
Serial 3 8-30-50 -	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164
	assembly accelerating pump relief valve added to improve decelerating engine operating characteristics.
Serial 4 10- 2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
Serial 5 10-2-50	Parts list record change only.
Serial 6 12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
Serial 7 12-21-50	Parts list record change only.
Serial 8 1-16-51	Parts list record change only.
Serial 9 7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
Serial 10 4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
ISSUE 3	
Serial 11 11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide
	better engine performance of idle.
ISSUE 4	
Serial 12 8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening point. Carburetor now suitable for use on Continental O-470-11 and -13 engines, Cessna L-19, and Beech T-34 aircraft.
Serial 13 9-22-53	Decal - Rubber parts cure date 364563 replaced by 187406.
Serial 14 10-19-53	Cap - Discharge Nozzle 385035 added.
Serial 15 11-23-53	Parts list correction.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-5 Specification Sheet (figure 4-24) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 2-9).
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (142, figure 2-9) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead of a 200 mesh screen as used in the carburetor in the basic technical manual.
- (4) The main metering jet plug gasket (87, figure 2-9) on this issue is fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (5) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 2-9),

discharge diaphragm adjusting screw assembly (52), throttle stop assembly (135), idle speed adjusting screw assembly (133) and idle control rod adjusting screw assembly (134). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used on the carburetor in the basic technical manual.

- (6) The poppet valve seat gasket (99, figure 2-9) and regulator needle plug gasket (101) are fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (7) This issue does not incorporate a matched and leak tested discharge nozzle needle valve and seat (59 and 63, figure 2-9).
- (8) This issue carburetor does not incorporate a vinyl coated air diaphragm (118, figure 2-9) for ozone protection.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-24) and History Sheet (figure 4-25). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

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## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C 391318-5

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 9-25-56

	ENGINE MFGR.: Continental		DATE	ISSUED: 9-25-50
Imrak		DADE	Impac	
ITEM		PART	ITEM	
_NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	384607	1.	
2.	Jet, Main Metering	390188	2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	383886	3.	Orifice Diameter: .121"122"
4.	Valve Assembly, Idle & Power Enrichment	364969	4.	Included Angle: 19° ± 30'
.5.	Seat, Manual Mixture Control	384967	5.	Size: .124"125"
6.	Needle, Manual Mixture Control	366291	6.	
. 7.	Needle & Seat Assy., Poppet Valve	366382	7.	
	Seat, Poppet Valve	366381	1	Size: .080"082"
	Valve, Poppet	384142	l 1	Dize. , 000 -, 002
8.	Nozzle Assembly, Discharge	384961	8.	
	Seat, Discharge Nozzle	383924	l ·	Size: .112"114"
	Valve, Discharge Nozzle	383474		
9.	Bleeder, Discharge Nozzle Air	383922	9.	
	Reducer, Vacuum			Since 44
10.		384606	10.	Size: 44
11.	Vapor Vent		11.	Size: No. 70 drilled in 383483
			1 • 1	Reg. Cover
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625"±.002"
		•		- mout Diameter, 1, 020 I, 002
13.	Washer, Regulator Spring Adjustment	384819	13.	•
14.	Valve Assembly, Pump Relief	364164	14.	
15.	Automatic Mixture Control Assembly		15.	Not used
16.	Strainer Assembly, Fuel	364858	16.	,
	Lever. Throttle		1	
17.	Lever, Inrottle	390248	17.	
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		1		* * * * * * * * * * * * * * * * * * * *
- 1	SPRING IDENTIFICATION			
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125"±.010"
	apring, rate out our ranger	000012		ID: .296"±.003"
	0 - 1 - D1 1 - 2 N 1	000544		
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625"±.031"
- 1				OD: .4375"±.010"
3.	Spring, Discharge Nozzle	383515	3.	Free Length: 1.875"±.062"
	-F			ID: .516"-0+.016"
	Contra Manual Mintone Contral	000040		
4.	Spring, Manual Mixture Control	383516	4.	Free Length: 2.750"±.010"
- 1			1	ID: .193"±, 003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500"±.0625"
	-F			D: .516"±.010"
	Suming Donnet Volum	202510	اما	
6.	Spring, Poppet Valve	383518	6.	Free Length: .875"±.010"
				OD: .188"±.003"
7.	Spring, Regulator	383519	7.	Free Length: 1.937"±.062"
				ID: .938"-0+.031"
8.	Spring, Idle Needle Valve	384629	8.	
٥.	spring, fute needle valve	307028	٥.	Free Length: .375"±.015"
				OD: .301"±,003"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875"±.062"
				ID: .516"-0+.016"
10.	Spring, Loose Lever to Throttle Stop	383853	10.	
11.	Spring, Idle Cut-Off Lever-	384141	11.	·
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Figure 4-24. Carburetor Specification Sheet Parts List 391318-5

ENGINE MFGR.: Continenta	engine model: 0-470
ISSUE 1	
Serial 1 7-25-50	First production release.
Serial 2 8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory
Serial 2 0-10-50	straining of fuel.
ISSUE 2	
Serial 3 8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164 assembly accelerating pump relief valve added to improve decelerating engine operating characteristics.
Serial 4 10- 2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
Serial 5 10-2-50	Parts list record change only.
Serial 6 12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
Serial 7 12-21-50	Parts list record change only.
Serial 8 1-16-51	Parts list record change only.
Serial 9 7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
Serial 10 4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
ISSUE 3	
Serial 11 11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide better engine performance of idle.
ISSUE 4	
Serial 12 8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening
Serial 12 0-21-00	point. Carburetor now suitable for use on Continental O-470-11 and -13 engines, Cessna L-19, and Beech T-34 aircraft.
Serial 13 9-22-53	
T	Decal - Rubber parts cure date 364563 replaced by 187406.
	Cap - Discharge Nozzle 385035 added. Parts list correction.
Serial 15 11-23-53	Parts list correction.
ISSUE 5	
Serial 16 2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to in-
	corporate a taper seat plug at pressure connection instead of 1/8" pipe plug,
	which caused possible casting fracture if over torqued during installation.
Serial 17 10-1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standardize on one assembly.
Serial 18 10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and
Serial 19 12- 6-55	vapor vent connections instead of brass 1/8" pipe plugs.
Serial 19 12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968 changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pindog point.
Serial 20 2- 8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
Serial 21 6- 6-56	Discontinued scribing discharge diaphragm adjustment.
Serial 22 7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
Serial 23 7-26-56	Parts list correction.

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-6 Specification Sheet (figure 4-26) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 2-9).
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle shaft (142, figure 2-9) is brass instead of steel.
- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead

of a 200 mesh screen as used on the carburetor in the basic technical manual.

- (4) The main metering jet plug gasket (87, figure 2-9) on this issue is fiber instead of aluminum as used on the carburetor in the basic technical manual.
- (5) This issue carburetor incorporates a different discharge diaphragm cover assembly (53, figure 2-9), discharge diaphragm adjusting screw assembly (52), throttle stop assembly (135), idle speed adjusting screw assembly (133) and idle control rod adjusting screw assembly (134). These parts have 32 threads per inch adjustments instead of 56 threads per inch as used on the carburetor in the basic technical manual.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-26) and History Sheet (figure 4-27). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 391318-6

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 1-11-57

	ENGINE MFGR Commentat		DAIR	E30ED. 1-11-01
ITEM		PART	ITEM	
NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
_	No. Delete	00400		
1. 2.	Main Body Assembly Jet, Main Metering	384607 390188	1. 2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	383886	3.	Orifice Diameter: .121"122"
4.	Valve Assembly, Idle & Power Enrichment	364969	4.	Included Angle: 19° ± 30'
5.	Seat, Manual Mixture Control	384967	5.	Size: .124"125"
6.	Needle, Manual Mixture Control	366291	6.	
7.	Needle & Seat Assy., Poppet Valve	366382	7.	Simon 00011 00011
	Seat, Poppet Valve Valve, Poppet	366381 384142		Size: .080"082"
8.	Nozzle Assembly, Discharge	384961	8.	
•	Seat, Discharge Nozzle	366476		Size: .112"114"
	Valve, Discharge Nozzle	383474		
9.	Bleeder, Discharge Nozzle Air	383922	9.	G
10.	Reducer, Vacuum Vapor Vent	384606	10. 11.	Size: 44 Size: No. 70 drilled in 383483
11.	vapor vent		***	Reg. Cover
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625"±.002"
13.	Washer, Regulator Spring Adjustment	384819	13.	
14.	Valve Assembly, Pump Relief	364164	14.	Nat and
15.	Automatic Mixture Control Assembly Strainer Assembly, Fuel	364858	15. 16.	Not used
16. 17.	Lever, Throttle	390248	17.	
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	•	ł	' '	•
	SPRING IDENTIFICATION	000510		T 1 0105U- 010U
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125"±.010"  ID: .296"±.003"
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625"±.031"
	pring, Dissimings installed	3333		OD: .4375"±.010"
3.	Spring, Discharge Nozzle	383515	3.	Free Length: 1.875"±.062"
		000540		ID: .516"-0+.016"
4.	Spring, Manual Mixture Control	383516	4.	Free Length: 2.750"±.010" ID: .193"±.003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500"±.0625"
٠.	oping, rump Dupinugui	000011		D: .516"±.010"
6.	Spring, Poppet Valve	383518	6.	Free Length: .875"±.010"
			_	OD: .188"±.003"
7.	Spring, Regulator	383519	7.	Free Length: 1.937"±.062" ID: .938"-0+.031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: . 375"±. 015"
٠.	bpring, rate recent varie		"	OD: .301"±.003"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875"±.062"
	5	000050		ID: .516"-0+.016"
10.	Spring, Loose Lever to Throttle Stop Spring, Idle Cut-Off Lever	383853 384141	10. 11.	
11.	Spring, idle out-on never	001111	***	
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# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGI	R.: Continent	tal ENGINE MODEL: O-470
voorva 1		
ISSUE 1 Serial 1	7-25-50	First production release.
Serial 2	8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory
Serial 2	6-10-30	straining of fuel.
		Straining of fuel.
ISSUE 2		
Serial 3	8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164
Serial 3	6-30-50	assembly accelerating pump relief valve added to improve decelerating engine
	• •	operating characteristics.
Serial 4	10- 2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover
Serial 4	10- 2-30	screws replaced by 384018 to insure more thread engagement of screw in body.
Serial 5	10- 2-50	Parts list record change only.
Serial 6	12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary
Deriai 0	12 11 00	machine operation.
Serial 7	12-21-50	Parts list record change only.
Serial 8	1-16-51	Parts list record change only.
Serial 9	7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facili-
. Derial b	1.00.01	tate assembly.
Serial 10	4-30-52	
DCA IM. 10	- 00 0-	dubitor - 1001 reputetu bij vettete te tuerimite pur elimber
ISSUE 3		
Serial 11	11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide
	· · ·	better engine performance of idle.
·		
ISSUE 4		
Serial 12	8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening
,		point. Carburetor now suitable for use on Continental O-470-11 and -13 engines,
		Cessna L-19, and Beech T-34 aircraft.
Serial 13	9-22-53	Decal - Rubber parts cure date 364563 replaced by 187406.
Serial 14	10-19-53	Cap - Discharge Nozzle 385035 added.
Serial 15	11-23-53	Parts list correction.
ISSUE 5	•	
Serial 16	2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to in-
		corporate a taper seat plug at pressure connection instead of 1/8" pipe plug,
		which caused possible casting fracture if over torqued during installation.
Serial 17	10- 1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standard-
		ize on one assembly.
Serial 18	<b>10-21-</b> 55	To conform to standard practice of using shipping plugs at fuel pressure and
		vapor vent connections instead of brass 1/8" pipe plugs.
Serial 19	12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968
		changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pin-
		dog point.
Serial 20	2-8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
Serial 21	6- 6-56	Discontinued scribing discharge diaphragm adjustment.
Serial 22	7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
Serial 23	7-26-56	Parts list correction.
ISSUE 6	10 1 50	Transportation of visual posted significance of the second significance of
Serial 24	10 - 1 - 56	Incorporation of vinyl coated air diaphragm for ozone protection.
Serial 25	11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
Serial 26	12-26-56	Added shipping date decalcomania.
Serial 27	1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
		·

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-7 Specification Sheet (figure 4-28) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

#### a. General.

- (1) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve fuel strainer assembly (100, figure 2-9).
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor

in the basic technical manual. The throttle shaft (142, figure 2-9) is brass instead of steel.

(3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead of a 200 mesh screen as used in the carburetor in the basic technical manual.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-28) and History Sheet (figure 4-29). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 391318-7

ENGINE MODEL: 0-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 1-21-57

	ENGINE MFGR.: Continental		DAIE	1550ED; 1-21-57
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	384607	1.	
2.	Jet, Main Metering	390188	2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	<b>3</b> 83886	3.	Orifice Diameter: .121"122"
4.	Valve Assembly, Idle & Power Enrichment	364969	4.	Included Angle: 19°±30'
5.	Seat, Manual Mixture Control	384967	5.	Size: .124"125"
6.	Needle, Manual Mixture Control	366291	6.	
	Needle & Seat Assy., Poppet Valve	366382	7.	
7.	Seat, Poppet Valve	366381	''	Size: .080"082"
		384142		5126000002
_	Valve, Poppet		ا ، ا	
8.	Nozzle Assembly, Discharge	384961	8.	G: 110H 114H
	Seat, Discharge Nozzle	366476	1 1	Size: .112"114"
	Valve, Discharge Nozzle	383474	1 . 1	٠.
9.	Bleeder, Discharge Nozzle Air	383922	9.	
10.	Reducer, Vacuum	384606	10.	Size: 44
11.	Vapor Vent		11.	Size: No. 70 Drilled in 383483
	•			Reg. Cover
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625"±.002"
13.	Washer, Regulator Spring Adjustment	384819	13.	
14.	Valve Assembly, Pump Relief	364164	14.	
15.	Automatic Mixture Control Assembly	001101	15.	Not used
		364858	16.	Not used
16. 17.	Strainer Assembly, Fuel Lever, Throttle	390248	17.	
	SPRING IDENTIFICATION	202542		S
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125"±.010" ID: .296"±.003"
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625"±.031" OD: .4375"±.010"
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875"±.062" ID: .516"-0+.016"
4.	Spring, Manual Mixture Control	383516	4.	Free Length: 2.750"±.010" ID: .193"±.003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500"±.0625" ID: .516"±.010"
6.	Spring, Poppet Valve	383518	6.	Free Length: .875"±.010" OD: .188"±.003"
7.	Spring, Regulator	383519 384629	7.	Free Length: 1.937"±.062"  ID: .938"-0+.031"  Free Length: .375"±.015"
8.	Spring, Idle Needle Valve Spring, Idle & Enrichment Valve Diaphragm	383515	8. 9.	OD: .301"±.003" Free Length: 1.875"±.062"
9,	Spring, Loose Lever to Throttle Stop	383853	10.	ID: .516"-0+.016"
10.	Spring, Idle Cut-Off Lever	384141	11.	
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Figure 4-28. Carburetor Specification Sheet Parts List 391318-7

# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGR.: Continental	ENGINE MODEL: O-470
ISSUE 1 Serial 1 7-25-50	First production release.
Serial 2 8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory straining of fuel.
ISSUE 2	
Serial 3 8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164 assembly accelerating pump relief valve added to improve decelerating engine operating characteristics.
Serial 4 10-2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
Serial 5 10 - 2-50	Parts list record change only.
Serial 6 12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
Serial 7 12-21-50	Parts list record change only.
Serial 8 1-16-51	Parts list record change only.
Serial 9 7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
Serial 10 4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
ISSUE 3	
Serial 11 11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide better engine performance of idle.
ISSUE 4	
Serial 12 8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening point. Carburetor now suitable for use on Continental O-470-11 and -13 engines, Cessna L-19, and Beech T-34 aircraft.
Serial 13 9-22-53	Decal - Rubber parts cure date 384563 replaced by 187406.
Serial 14 10-19-53	Cap - Discharge Nozzle 385035 added.
Serial 15 11-23-53	Parts list correction.
ISSUE 5	
Serial 16 2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to in-
	corporate a taper seat plug at pressure connection instead of 1/8" pipe plug, which caused possible casting fracture if over torqued during installation.
Serial 17 10-1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standard- ize on one assembly.
Serial 18 10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and vapor vent connections instead of brass 1/8" pipe plugs.
Serial 19 12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968 changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pindog point.
Serial 20 2-8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
Serial 21 6- 6-56	Discontinued scribing discharge diaphragm adjustment.
Serial 22 7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
Serial 23 7-26-56	Parts list correction.
ISSUE 6	
Serial 24 10- 1-56	Incorporation of vinyl coated air diaphragm for ozone protection.
Serial 25 11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
Serial 26 12-26-56	Added shipping date decalcomania.
Serial 27 1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
ISSUE 7	
Serial 28 1- 7-57	Changed discharge diaphragm cover, discharge diaphragm screw, idle speed adjustment, idle control rod adjustment, and throttle stop assemblies from 32 to
Serial 29 2-21-57	56 threads per inch to provide more precise adjustments.  Main metering jet gasket changed from fiber to aluminum material.

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this manual. Refer to 391629-3 specification sheet (figure 4-30) for information on metering variables for this issue.

COMPONENT DIFFERENCES. (See figure 2-9.)

#### a. General

- (1) The manual mixture control lever assembly (83, figure 2-9) is of a different configuration than used on the carburetor in the basic technical manual to conform to airplane installation requirements.
- (2) The throttle shaft bushings (148 and 149, figure 2-9) on this issue carburetor are brass instead of oil impregnated sintered bronze as used on the carburetor in the basic technical manual. The throttle

shaft (142, figure 2-9) is brass instead of steel.

- (3) This issue incorporates an 80 mesh screen on the strainer assembly (91, figure 2-9) instead of a 200 mesh screen as used on the carburetor in the basic technical manual.
- (4) This issue incorporates a regulator needle plug instead of the 80 mesh poppet valve strainer assembly (100, figure 2-9).

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-30) and History Sheet (figure 4-33). Refer to figures 4-31 and 4-32 for flow limits.

PREPARATION FOR STORAGE, PACKING AND RE-CONDITIONING AFTER STORAGE. Same as outlined in Section III of this manual.

## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR PS-5C

391629-3

ENGINE MODEL: O-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391629 DATE ISSUED: 7-11-57

	ENGINE MIGR.: Commental		DAIR	ESCED. 1-11-01
ITEM		PART	ITEM	AND
NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
			· .	
1.	Main Body Assembly	366691	1.	
2.	Jet, Main Metering	390188	2.	Size: 43
	Seat, Idle & Power Enrichment Valve	383886	3.	
	Diaphragm Assembly, Idle & Power	364969	4.	
	Enrichment			'
5.	Seat, Manual Mixture Control	384967	5.	
	Valve, Manual Mixture Control Needle	366291	6.	
7.	Needle & Seat Assy., Poppet Valve	366382	7.	
"•	Seat, Poppet Valve	366381		
	Valve, Poppet			
•		384142	8.	
8,	Seat Assembly, Discharge Nozzle	366476	0.	
	Seat, Discharge Nozzle	383924		
_	Valve, Discharge Nozzle	383474		
	Bleeder, Discharge Nozzle Air	383922	9.	•
10.	Reducer, Vacuum	384606		Size: 44
11.	Vapor Vent		11.	Size: No. 70 drilled in 383483
				Reg. Dia. Body
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1-5/8"
13.	Washer, Regulator Spring Adjustment	384819	13.	• .
14.	Valve Assembly, Pump Relief	364164	14.	·
	Automatic Mixture Control Assembly		15.	Not used.
	Strainer Assembly, Fuel	366362	16.	
	Lever, Throttle	390248	17.	·
	Lever Assy., Manual Mixture Control	365125	18.	
			1	•
	•		ŀ	,
			1	· ·
		•	1	-
	SPRING IDENTIFICATION	ŀ		
1	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010" ID
1.	opring, late cat-off Flanger	000012	٠.	.296" ± .003"
	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031" OD
4.	Spring, Discharge Needle	000014	۲۰.	.4375" ± .010"
3.	Coulage Dischange Nongle	383515	3.	Free Length: 1.875" ± .062" ID
٠ ٥.	Spring, Discharge Nozzle	303313		
	Guntara Maria National Gardens	383516		.516" -0 +.016"
4.	Spring, Manual Mixture Control	292210	4.	Free Length: 2.750" ± .010" ID
			_	.193" ± .003"
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625" ID
	_ : _ : _ : _ : _ : _ : _ : _ : _ : _ :			. 516" ± .010"
6.	Spring, Poppet Valve	383518	6.	Free Length: .875" ± .010" OD
		l		.188" ± .003"
7.	Spring, Regulator	383519	7.	Free Length: 1.937" ± .062" ID
			i _	-938" -0 +.031"
· 8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015" OD
				.301" ± .003"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	j 9.	Free Length: 1.875" ± .062" ID
	·			.516" -0 +.016"
10.	Spring, Losse Lever to Throttle Stop	383853	10.	
11.	Spring, Idle Cut-Off Lever	.384141	11.	•
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Figure 4-30. Carburetor Specification Sheet Parts List 391629-3

Fuel Inlet Pressure: 10 psi Nozzle Pressure: Limits Based on, 734 ±002 Specific Gravity at 75 ± 5°F.  NAPHTHA  Fuel Inlet Pressure:  Carb. Model: PS-5C  Date Issued: 6-13-58  NAPHTHA  Flow Limits for Issues 1 through 6 are identical.	6.3 12.2 12.2 26.4 28.6	1 1 m m	43.9 58.1 73.5 84.6 97.6 106.7 84.6 46.6 61.7 81.7 89.8 103.6 111.1 89.8 34.1 69.0 36.9 74.5	Multi-Point Automatic Mixture Control Calibration Limits: Flow Method: Date Issued: Density: Low (Lean) Limit:	<ul> <li>High (Rich) Limit:</li> <li>Notes: 1. At check point 6, open vapor vent and measure total flow. All other check points vapor vent is closed.</li> <li>2. At check point 7, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 28° from the wide open position. Use T-25941.</li> </ul>	
Fuel Inl Nozzle I Limits F	0.7 2.2	1 6 6	No 31.5 Flow 33.5 10.75	CAUTION These limits are based on flow heach	checking the carburetor in the same relative position as when it is installed on the engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	
Engine Model: 0-470 Engine Migr.: Continental Engine Migr. Setting:	Metering Suction Inches of Water Corresponding Air Flow Lb./Hr. 200	Control Osition Position Volume Min. 2 Max. 3	Seconds   Obs.	These limits are	checking the carburetor in the tive position as when it is in engine in the aircraft.  PS-5C carburetors are up-diare checked with the dischar	

Figure 4-31. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 391629-3

Engine Model: O-470 Engine Mfgr.: Continental Engine Mfgr. Setting:	al	Fuel Inlet Pressure: 10 psi Nozzle Pressure: Limits Based on .692 ± .002 Specific Gravity at 75 ± 5	et Pressure: 10 ps! Pressure: 3ased on .692 $\pm$ .002 Specific Gravity at 75 $\pm$ 5 °F.	re: 10 692 ±	psi 002 Sp	cific	ravity	at 75	. 5 °F.		Parts Carl Da	Parts List No.: Carb. Model: Date Issued:		29-1 thr C -58	391629-1 through -6 PS-5C 6-13-58	
				HE	HEPTANE			Flow	ımits f	or Issu	B 1 thr	ough 6	Flow Limits for Issues 1 through 6 are identical	tical.		
Test Point No. 1		2	3	4	5	9	7 8	6	10				1	-	-	$\sqcup$
Metering Suction Inches of Water 0.7	-	0.7	2.2	6.3	12.2	12.2	26.4	28.6 34.3	.3 26.4	*						·_ :
Corresponding Air Flow Lb./Hr. 200	1.5	200	400	009	800	800	1150 1	1200 13	1300 1150	. 0						
		Ş	α	4	ρ	ρ	p p		2							
uo	-	MOM	1/2	1/2	╁╌	┿-	+-	WO WO	-						L	L
يو			200	250				_	500 500							Ц
Min.			33.0	-	27.4 2		_ 1.		_1					+	1	_
Limits Max. 29.5			34.8	32.0	29.2	22.9 3	33.6	28.9 26	26.5 33.6			1	1	+	1	4
In Seconds Obs.																
er Fer	6	No	31.5 43.0	-	56.5	71.9 81.7	-	5.0 103	95.0 103.8 81.7	_						Ц
Max.	9	Flow	33.2			80.08		86.8 100.8 108.0	.0 86.	m			-			
In Ohs																
+			11 55		5 5	7	73.5		-				-	L	_	L
_			12.45		39.4	7	79.4						H			
ي و									_							
ruer Loss.				WIT	Iti-Poi	t Auto	matic	Mixture	Multi-Point Automatic Mixture Control Calibration Limits:	Calib	ation 1	ımlts:				
,				Ĭ.	Flow Method:	.;										
		٠.		Ď	Date Issued:	÷										:
				- 1	. ;										·. ·.	:
	CAUTION			<u> </u>	Density: Low (Rich) Limit: High (Lean) Limit:	Limi (r	ند	٠					. :			
These limits are based on flow bench checking the carburetor in the same relative position as when	ed on flow ben	nch checking the position as when	g the when	ž	Notes: 1.		At check point 6, points, vapor ven	int 6, c	At check point 6, open vapor points, vapor vent is closed.	or vent	and me	asure t	open vapor vent and measure total flow. All other check it is closed,	, All c	ther ch	eck
It is installed on the engine in the		aircraft.			κi		eck po	int 7, F	osition	enrichn	ent va	ve actu	At check point 7, position enrichment valve actuating screw to contact idle	rew to	ontact i	dle
PS-5C carburetors are up-draft checked with the discharge nozzle	are up-draft u	units and up.	are			open	and enrichmeni open position.	ient val n. Use	t valve stem w Use T-25941,	יייים עו 11.	rottie	alve se	and enrichment valve stem with throttle valve set at 28 from the wide open position. Use T-25941,	Irom u	e wide	•
															-	
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				_												

Figure 4-32. Carburetor Flow Bench Test Sheet (Heptane) Parts List 391629-3

### STROMBERG INJECTION CARBURETOR MODEL PS-5C

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGR .: Continental

ENGINE MODEL: 0-470

PS-5C carburetor, P/L 391629 is identical to P/L 391318 except that P/L 391629 incorporates a special Manual Mixture Control Lever to conform to airplane installation requirements.

1	SSUE 1			
	Serial	. 2	1-18-56	Released to production.
	Serial	3	2-15-56	Installed 1/8" pipe plugs at vapor vent and fuel pressure connections in place of shipping plugs at request of the engine manufacturer.
	Serial	4	2-27-56	To incorporate an improved design manual mixture control needle assembly.  The idle cut-off cam is attached to the new needle using a 366290 pin-dog point, instead of the 383504 screw and lead ball configuration.
	Serial	5	4- 2-56	Parts list correction.
	Serial	6	6- 5-56	Discontinued scribing the discharge diaphragm adjusting screw.
	Serial	7	7-31-56	Poppet valve seat changed to provide a seat that will accommodate a poppet screen if required.
	Serial	8	10- 1-56	Elimination of diffusion tube attaching rivets which are no longer required.
. 1	ISSUE 2			
٠	Serial	9	10- 1-56	Incorporation of vinyl coated air diaphragm 366408 to increase resistance to ozone deterioration.
1	ISSUE 3			
	Serial	10	10- 1-56	Discharge diaphragm, idle speed, and idle control rod adjusting screws changed from 32 to 56 threads per inch to provide more precise adjustments.
	Serial	11.	11-27-56	Incorporation of matched discharge nozzle seat and discharge needle valve assembly to prevent fuel leakage.
	Serial	12	12-26-56	Addition of shipping date decalcomania.
	Serial	13	1- 7-57	Regulator needle valve seat and plug gaskets change from fiber to aluminum material.
	Serial	14	2-20-57	Main metering jet plug gasket changed from fiber to aluminum material.

Figure 4-33. Carburetor History Sheet Parts List 391629-3

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this manual. Refer to 391629-4 specification sheet (figure 4-34) for information on metering variables for this issue.

COMPONENT DIFFERENCES. (See figure 2-9).

#### a. General

(1) The manual mixture control lever assembly (83, figure 2-9) is of a different configuration than used on the carburetor in the basic technical manual to conform to airplane installation requirements.

(2) This issue incorporates a strainer support wire in the strainer assembly (91, figure 2-9) to prevent the strainer from crushing.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-34) and History Sheet (figure 4-37). Refer to figures 4-35 and 4-36 for flow limits.

PREPARATION FOR STORAGE, PACKING AND RE-CONDITIONING AFTER STORAGE. Same as outlined in Section III of this manual.

SETTING SPECIFICATIONS FOR INJECTION CARBURETOR PS-5C

391629-4

ENGINE MODEL: O-470 ENGINE MFGR.: Continental DRAWING NUMBER: 391629 DATE ISSUED: 1-8-58

	ENGINE MFGR.: Continental		DATE	ISSUED: 1-8-58
ITEM	I .	PART	ITEM	
NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
	Main Dady Assembly	200001		
1.	Main Body Assembly	366691	1.	
2.	Jet, Main Metering	390188		Size: 43
	Seat, Idle & Power Enrichment Valve	383886	3.	
4.	Diaphragm Assembly, Idle & Power	364969	4.	
	Enrichment			• • •
	Seat, Manual Mixture Control	384967	5.	·
	Valve, Manual Mixture Control Needle	366291	6.	
7.	Needle & Seat Assy., Poppet Valve	366382	7.	
	Seat, Poppet Valve	366381		
	Valve, Poppet	384142		
8.	Seat Assembly, Discharge Nozzle	366476	8.	·
	Seat, Discharge Nozzle	383924		
•	Valve, Discharge Nozzle	383474		
	Bleeder, Discharge Nozzle Air	383922	9.	a
	Reducer, Vacuum	<b>3</b> 84606		Size: 44
11.	Vapor Vent		11.	Size: No. 70 drilled in 383483
10	Ventuni Threat Aggerble	204500	10	Reg. Dia. Body
	Venturi Throat Assembly   Washer, Regulator Spring Adjustment	384599	12.	Throat Diameter: 1-5/8"
	Valve Assembly, Pump Relief	384819 364164	13. 14.	
	Automatic Mixture Control Assembly	304104		Not used.
	Strainer Assembly, Fuel	366362	16.	Not used.
	Lever, Throttle	390248	17.	,
	Lever Assy., Manual Mixture Control	365125	18.	
	20101 1150y,, mandat mineral o control	]	1 20.	
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	SPRING IDENTIFICATION	i		
1.	Spring, Idle Cut-Off Plunger	383512	1.	
				.296'' ± .003'' ID
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031"
_	l		_ [	.4375" ± .010" OD
3.	Spring, Discharge Nozzle	383515	3.	Free Length: 1.875" ± .062"
		200540		.516" -0 +.016"ID
4.	Spring, Manual Mixture Control	383516	4.	Free Length: 2.750" ± .010"
_	Santas Barra Disabas and	000517		.193" ± .003" ID
5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
	Series Bornet Volum	383518		. 516" ± .010" ID
6.	Spring, Poppet Valve	303310	6.	Free Length: .875" ± .010" .188" ± .003" OD
7.	Spring, Regulator	383519	7.	Free Length: 1.937" ± .062"
٠.	Spiring, regulator	303313	١ ''	.938" -0 +.031" ID
٠. ۾	Spring, Idle Needle Valve	384629	8.	
٠.	bpring, rate receive varve	001020	٠.	.301" ± .003" OD
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"
			,	.516" -0 +.016"ID
10.	Spring, Loose Lever to Throttle Stop	383853	10.	
11.	Spring, Idle Cut-Off Lever	384141	11.	
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Architecture   Parts List No.; 391629-   Architecture   Architecture   Parts List   Parts List     Architecture   Architecture   Architecture     Architecture   Arc		NOTECHINI			TOTA	P NOM 3	Four				
Nozal Based on, 734 ± . 002 Special Forestrees:	Engine Model: O 470	Fire Inlet Dressin	TO TO TO!		t		E01	Donto I let Me		-	
Nature   N	Engine Migr.: Continental	Nozzle Pressure:	re: 10 psi				٠.	Carb. Mode	.: 391629- l: PS-5C	1 through -	9
No.   1	Engine Migr. Setting:	Limits Based on,	734 ± . 002 NAPE	Specific ( ITHA	Gravity a	t 75 ± 5	°F. Its for Iss	Date Issued ues 1 through 6	d: 6-13-58 are identi		
tion action    Action	Test Point No. 1	F	-	-	-	6	10				L
100   100	-	_	6.3		4	1					
tion    R	<u> </u>	-		800			150				-
Min.	-		L			,	<u> </u>				-
Volume   150   200   250   300   3	5	1/2	+	_	+	wo	72	+			+
Min. 29, 2   34, 8 31, 3 28, 3 2 30, 0 25	Volume	200	1		1	0 200	200		-		-
Max.   31.0     37.0   33.2   30.0   23.5     Min.   28.2	Min.					i f	2.4				
No   1.5   45.6   61.7   81	Max.				_	- 1	4.4				
Min.         28.2         No         31.5         43.9         58.1         73.5         46.6         61.7         81.1         78.1         78.1         78.1         81.1         78.1         81.1         78.1         81.1         78.1         81.1         8											
Max. 29.9 Flow 33.5 46.6 61.7 81  Obs.  Obs.  Obs.  Obs.  CAUTION  Ecking the carburetor in the same relave position as when it is installed on the ign the aircraft.  S-5C carburetors are up-draft units and seed with the discharge nozzle up.  Caution and the discharge nozzle up.  Flow (Lean)  High (Rich (	Min.	31.5			4.6 97.	6 106.7	4.6				
Obs.  Max.  Max.  Obs.  Obs.  Obs.  CAUTION  These limits are based on flow bench engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.  Z.	Max.	33.5	16.6 61.7		9.8 103.	6 111. 1	8.6				
Min.  Obs.  CAUTION  These limits are based on flow bench engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.							<del>-</del>				
These limits are based on flow bench engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.  Obes: 1, PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	+	10.75	34.1	9	0.0			-			1
These limits are based on flow bench checking the carburetor in the same relative position as when it is installed on the engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.	Ш	11.65	36.9		5.5						L
These limits are based on flow bench checking the carburetor in the same relative position as when it is installed on the engine in the aircraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.			_								
Flow Methon Date Issued Density: Low (Lean) High (Rich) Notes: 1.			Multi-P	oint Auto	matic Mi	xture Co	ntrol Cali	ration Limits:			
Date Issued Density: Low (Lean) High (Rich) Notes: 1.			Thom M	thod.							
Date Issued Density: Low (Lean) High (Rich) Notes: 1.			TAT MOLIT	dilog.							
Density: Low (Lean) High (Rich) Notes: 1.	CAUT	TION	Date Iss	ned:						1./(j./	
High (Rich, Notes: 1.			Density:	in) I imit	:						
Notes: 1.	These limits are ba checking the carburet	ased on flow bench tor in the same rela-	High (R	ich) Limi	: <b>::</b>						
ei	tive position as when engine in the aircraft.	it is installed on the			eck point vapor v		vapor ven sed.	t and measure to	otal flow.	All other check	heck
	PS-5C carburetors ar are checked with the	re up-draft units and discharge nozzle up.			eck point nrichmen position,	7, positi it valve si Use T-2	on enrich tem with t 15941.	ment valve actua hrottle valve sel	iting screv t at 28° fro	v to contact om the wide	idle
											-
			<del></del>								

Figure 4-35. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 391629-4

PS-5C carburetors are up-draft units and are open position. Use T-25941, checked with the discharge nozzle up.	These limits are based on flow bench checking the carburdor in the same relative position as when	Obs.	Max. 12.45 39.4	Obs.	Max. 29.6 Flow 33.2 45.7 60.0 80.0 86.8 100.8 108.0 86	Obs. No. of the hole of the ho	Max. 29.5 33.6 28.9 26.5	e 150 200 250 300 300 500 500 500 500 500 500 500 5	### HEPTANE Flow Limits for Issues 1 through 6 are identic for 3 in 12.2 in 12	1 0.7 200 200 150 17.8 8.9.5 29.6 29.6 29.6 29.6 29.6 29.6 29.6 29.6	Engine Migr.: Contil Engine Migr. Setting Test Point No. Metering Suction Inches of Water Corresponding Air Flow Lb./Hr. Mixture Control Lever Position Throttle Position Throttle Position Throttle Position Throttle Position Throttle Position Burette Volume Time Min. Limits Max. Libis./Hr. Metering Min. Head Inches of Obs. These limits are carburetor in thit it is installed on PS-5C carbureto checked with the
are		Flow Method:  Date Issued:  Low (Rich) Limit:  High (Lean) Limit:  Notes: 1. At check point 6, open vapor vent and measure total flow.	Obs.	Max.   12.45   39.4   79.4	Obs.   11.55   36.5   73.5	Max. 29.6   Flow 33.2 45.7 60.0 80.0 86.8 100.8 108.0 86.8   Min. 27.9   Min. 29.6   Flow 33.2 45.7 60.0 80.0 86.8 100.8 108.0 86.8   Min. 29.6   Mi	Obs.   27.9   No. 31.5 43.0 56.5 71.9 81.7 95.0 103.8 81.7     Max. 29.6   Flow 33.2 45.7 60.0 80.0 86.8 100.8 108.0 86.8     Obs.   Min.   11.55   36.5   73.5     Max.   Obs.   12.45   39.4     Obs.   Multi-Point Automatic Mixture Control Calibration Limits:   Flow Method:   Date Issued:   Date Issued:	Max. 29.5	кi	the engine in the aircraft.  rs are up-draft units and a discharge nozzle up.	carburetor in the it is installed on PS-5C carbureto checked with the
Density: Low (Rich) Limit: High (Lean) Limit: Notes: 1. At check point 6, open vapor vent and measure total flow. points, vapor vent is closed.  2. At check point 7, position enrichment valve actualing screw		Flow Method:	Obs.	Max. 12.45	Obs. 11.55 Max. 12.45 Obs.	Max. 29.6 Flow 33.2 45.7 Max. 29.6 Flow 33.2 45.7 Max. Max. 11.55 Max. Obs.	Obs. 27.9 No 31.5 43.0 Max. 29.6 Flow 33.2 45.7 Obs. Min. 11.55 Max. I Obs. 12.45	Max. 29.5 34.8 32.0 Cbs. 27.9 No 31.5 43.0 Cbs. Cbs. Cbs. 11.55 Max. 29.6 Il.55 Max. Cbs. Cbs. Cbs. Cbs. Cbs. Cbs. Cbs. Cbs	Date Issued:		
Date Issued:  Density: Low (Rich) Limit: High (Lean) Limit: Notes: 1. At check point 6, open vapor vent and measure total flow. points, vapor vent is closed.  2. At check point 7, position enrichment valve actualing screw	Date Issued:		Obs.	Max. 12.45	Obs. Min. 11.55 Max. 12.45 Obs.	Max. 29.6 Flow 33.2 45.7 Obs. Max. Obs. 11.55	Obs. Min. 27.9 No 31.5 43.0  Max. 29.6 Flow 33.2 45.7  Obs. 11.55  Max. 12.45	Max. 29.5   34.8 32.0 50.5   34.8 32.0	Flow Method:		
Volume   150   200   250   300   500   500   500   500	Volume   150   200   250   2	Volume         150         200         250         30         30         500 <td>Volume         150         200         250         30         30         500<td>Volume         150         200         250         30         30         500         103.8         8         8         8         8         8         8         9</td><td>Volume         150         200         250         360         300         500&lt;</td><td>16     150     200     250     300     300     500     500     500     500       27.8     33.0     30.0     27.4     20.6     31.6     27.2     25.4       .     29.5     33.6     28.9     32.0     29.2     22.9     33.6     28.9     26.5</td><td>e 150 200 250 300 300 500 500 500 500 500 500 500 5</td><td></td><td>  R R R R R R R R R R R R R R R R R R R</td><td></td><td>_</td></td>	Volume         150         200         250         30         30         500 <td>Volume         150         200         250         30         30         500         103.8         8         8         8         8         8         8         9</td> <td>Volume         150         200         250         360         300         500&lt;</td> <td>16     150     200     250     300     300     500     500     500     500       27.8     33.0     30.0     27.4     20.6     31.6     27.2     25.4       .     29.5     33.6     28.9     32.0     29.2     22.9     33.6     28.9     26.5</td> <td>e 150 200 250 300 300 500 500 500 500 500 500 500 5</td> <td></td> <td>  R R R R R R R R R R R R R R R R R R R</td> <td></td> <td>_</td>	Volume         150         200         250         30         30         500         103.8         8         8         8         8         8         8         9	Volume         150         200         250         360         300         500<	16     150     200     250     300     300     500     500     500     500       27.8     33.0     30.0     27.4     20.6     31.6     27.2     25.4       .     29.5     33.6     28.9     32.0     29.2     22.9     33.6     28.9     26.5	e 150 200 250 300 300 500 500 500 500 500 500 500 5		R R R R R R R R R R R R R R R R R R R		_
Position   R	Control Control Control Control Control Cosition WO WO 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2	Control         R </td <td>Control R</td> <td>Control         R<!--</td--><td>Control         R<!--</td--><td>  R   R   R   R   R   R   R   R   R   R</td><td>  R</td><td>R         ICO         R         R         R         R         R         R         R         R           WO         1/2         1/2         1/2         1/2         1/2         WO         WO</td><td>600 800 800 1150 1200 1300</td><td></td><td></td></td></td>	Control R	Control         R </td <td>Control         R<!--</td--><td>  R   R   R   R   R   R   R   R   R   R</td><td>  R</td><td>R         ICO         R         R         R         R         R         R         R         R           WO         1/2         1/2         1/2         1/2         1/2         WO         WO</td><td>600 800 800 1150 1200 1300</td><td></td><td></td></td>	Control         R </td <td>  R   R   R   R   R   R   R   R   R   R</td> <td>  R</td> <td>R         ICO         R         R         R         R         R         R         R         R           WO         1/2         1/2         1/2         1/2         1/2         WO         WO</td> <td>600 800 800 1150 1200 1300</td> <td></td> <td></td>	R   R   R   R   R   R   R   R   R   R	R	R         ICO         R         R         R         R         R         R         R         R           WO         1/2         1/2         1/2         1/2         1/2         WO	600 800 800 1150 1200 1300		
Control   R	onding w Lb./Hr. 200 400 600 Control ostition WO WO 1/2 1/2 Nolume 150 WO 250 25 Min. 27.8 33.0 30.0 Max. 29.6 Row 33.2 45.7 Obs. Max. 29.6 Flow 33.2 45.7  Obs. Max. 45.6  Max. 45.6  Obs. 11.55	onding v.Lb./Hr. 200 400 600 800 800 1150 1200 1300 Control Account R R R R R R R R R R R R R R R R R R R	onding v.Lb./Hr. 200 400 600 800 1150 1200 1300 Control Aux. 29.6 No. 31.6 45.7 60.0 80.0 80.0 1150 1200 1300 1001010	v.Lb./Hr.         200         400         600         800         1150         1200         1300           Control Solution         R	v. Lb./Hr.         200         400         600         800         1150         1200         1300           Control         R	200         200         400         600         800         1150         1200         1300           R	R	200         200         400         600         800         1150         1200         1300           R         ICO         R         R         R         R         R         R         R           WO         WO         1/2         1/2         1/2         1/2         1/2         1/2         1/2         WO         WO	6.3 12.2 12.2 26.4 28.6 34.3		etering Suction thes of Water
f Water or 7	Suction  f Water  f Water  onding  onding  volume  r Lb./Hr.  losition  Position  Nolume  r Min.  obs.  Max.  obs.  Max.  obs.  f Obs.  f Water  onding  nording  nor	Suction  f Water  O.7  2.2  6.3  12.2  12.2  26.4  28.6  34.3  onding  volume  Lb./Hr.  200  400  600  800  800  1150  1200  1300  Control  R  R  R  R  R  R  R  R  R  R  R  R  R	g Suction         Towater         O.7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           onding         volding         200         400         600         800         1150         1200         1300           Control         R         R         R         R         R         R         R         R           Position         WO         1/2         1/2         1/2         1/2         1/2         WO         WO           Win.         27.8         33.0         30.0         27.4         20.6         31.6         27.2         25.4           Max.         29.5         No         31.5         43.0         56.5         71.9         81.7         95.0         103.8           Max.         29.6         Flow         33.2         45.7         60.0         80.0         86.8         100.8         108.0	g Suction         0.7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           onding         conding         200         400         600         800         800         1150         1200         1300           Control         R	g Suction         0.7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           onding v Lb./Hr.         v Lb./Hr.         200         400         600         800         1150         1200         1300           Control         R         R         R         R         R         R         R         R           Position         WO         WO         1/2         1/2         1/2         1/2         WO         WO           Volume         150         WO         200         250         300         300         500	200         200         400         600         800         800         1150         1200         1300           R	O.7   O.7   O.2   G.3   12.2   12.2   26.4   28.6   34.3   2200   200   400   600   800   800   1150   1200   1300   800   800   800   1150   1200   1300   800   800   800   1150   172   1/2   1/2   1/2   WO   WO   1/2   1/2   1/2   1/2   1/2   WO   WO   1500   2500	0.7         0.7         2.2         6.3         12.2         12.2         12.2         26.4         28.6         34.3           200         400         600         800         800         1150         1200         1300           R         ICO         R         R         R         R         R         R         R           WO         1/2         1/2         1/2         1/2         1/2         WO         WO         WO	4 5 6 7 8 9	1 2	st Point No.
Section   1	Suction   1   2   3   4	Suction   1	Suction   1	Suction   1	Suction   1	1         2         3         4         5         6         7         8         9           0.7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           200         400         600         800         800         1150         1200         1300           R         R         ICO         R         R         R         R         R         R           WO         WO         1/2         1/2         1/2         1/2         1/2         WO         WO           150         20.8         30.0         250         300         300         500         500         500           27.8         33.0         30.0         27.4         20.6         31.6         27.2         25.4           29.5         29.5         22.9         33.6         28.9         26.5         56.5	1         2         3         4         5         6         7         8         9           0.7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           200         400         600         800         1150         1200         1300           R         R         R         R         R         R         R         R           WO         WO         1/2         1/2         1/2         1/2         1/2         WO         WO           150         200         250         300         300         500         500         500           178         178         170         174         174         177         177         177         177         177         177         177         177         177         177         177         175         177         175         177         175 <td>1         2         3         4         5         6         7         8         9           0,7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           200         400         600         800         800         1150         1200         1300           R         R         ICO         R         R         R         R         R         R           WO         WO         1/2         1/2         1/2         1/2         WO         WO         WO</td> <td></td> <td></td> <td></td>	1         2         3         4         5         6         7         8         9           0,7         2.2         6.3         12.2         12.2         26.4         28.6         34.3           200         400         600         800         800         1150         1200         1300           R         R         ICO         R         R         R         R         R         R           WO         WO         1/2         1/2         1/2         1/2         WO         WO         WO			
Notes: 1   1   1   1   1   1   1   1   1   1	HEPTANE   HEPT	HEPTANE   HEPT	HEPTANE   1	HEPTANE   HEPTANE   HEPTANE   HEPTANE   HEPTANE   HEPTANE   Suction   1   2   3   4   5   6   7   8   8   1   1   1   1   1   1   1   1	HEPTANE   HEPTANE   HEPTANE   HEPTANE   HEPTANE   Suction   1   2   3   4   5   6   7   8   8   1   1   1   1   1   1   1   1	1   2   3   4   5   6   7   8	1   2   3   4   5   6   7   8	1   2   3   4   5   6   7   8   6   7   8   6   7   8   6   7   8   6   7   8   8	692 ± .002 Specific Gravity	nental	gine Migr.: Conti gine Migr. Setting
Continental	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	1 2 3 4 5 6 7 8 8 0 0.7 2.2 6.3 12.2 12.2 26.4 28 0.7 0.7 2.0 600 800 800 1150 12 150 150 150 150 150 150 150 150 150 150	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	Limits Based on .692 ± .002 Specific Gravity   Limits Based on .692 ± .002	Limits Based on .692 ± .002 Specific Gravity   HEPTANE	Caron Caronell		

Figure 4-36. Carburetor Flow Bench Test Sheet (Heptane) Parts List 391629-4

391629

### STROMBERG INJECTION CARBURETOR MODEL PS-5C

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGR.: Continental

ENGINE MODEL: 0-470

PS-5C carburetor, P/L 391629 is identical to P/L 391318 except that P/L 391629 incorporates a special Manual Mixture Control Lever to conform to airplane installation requirements.

ISSUE 1			·
Serial	2	1-18-56	Released to production.
Serial	3	2-15-56	Installed $1/8$ " pipe plugs at vapor vent and fuel pressure connections in place of shipping plugs at request of the engine manufacturer.
Serial	4	2-27-56	To incorporate an improved design manual mixture control needle assembly. The idle cut-off cam is attached to the new needle using a 366290 pin-dog point, instead of the 383504 screw and lead ball configuration.
Serial	5	4- 2-56	Parts list correction.
Serial	6	.6- 5-56	Discontinued scribing the discharge diaphragm adjusting screw.
Serial	7	7-31-56	Poppet valve seat changed to provide a seat that will accommodate a poppet screen if required.
Serial	8	10- 1-56	Elimination of diffusion tube attaching rivets which are no longer required.
ISSUE 2			
Serial	9	10- 1-56	Incorporation of vinyl coated air diaphragm 366408 to increase resistance to ozone deterioration.
ISSUE 3			
Serial 1	0	10- 1-56	Discharge diaphragm, idle speed, and idle control rod adjusting screws changed from 32 to 56 threads per inch to provide more precise adjustments.
Serial 1	1	11-27-56	Incorporation of matched discharge nozzle seat and discharge needle valve assembly to prevent fuel leakage.
Serial 1	.2	12-26-56	Addition of shipping date decalcomania.
Serial 1	.3	1- 7-57	Regulator needie valve seat and plug gaskets change from fiber to aluminum material.
Serial 1	4	2-20-57	Main metering jet plug gasket changed from fiber to aluminum material.
ISSUE 4			
Serial 1	.5	6-24-57	Changed to steel throttle shaft and Oilite throttle shaft bushings. Changed to a 200 mesh inlet fuel strainer and added an 80 mesh poppet valve strainer.
Serial 1	6	7-11-57	Parts list correction.
Serial I	7	1- 8-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.

# THE INSTRUCTONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this manual. Refer to 391629-5 specification sheet (figure 4-38) for information on metering variables for this issue.

COMPONENT DIFFERENCES. (See figure 2-9.)

### a. General

- (1) This issue carburetor incorporates an inner regulator diaphragm assembly (118, figure 2-9) that has a different pin from the diaphragm assembly used on the carburetor in the basic technical manual. The pin used on this assembly does not extend beyond the diaphragm.
- (2) This issue incorporates a different outer regulator diaphragm assembly (103, figure 2-9) which uses a different washer than in the basic technical manual. The washer on this carburetor is cup shaped. This diaphragm uses a different rivet.
- (3) The manual mixture control lever assembly (83, figure 2-9) is of a different configuration to conform to airplane installation requirements and a different bushing (84, figure 2-9) is used than in the basic technical manual.
- (4) The manual mixture control link assembly (106, figure 2-9) has a different pin of harder material than the link used on the carburetor in the basic technical manual.
  - (5) The regulator needle valve assembly (95, figure

- 2-9) has a valve (97) of harder material with longer service life than on the carburetor in the basic technical manual.
- (6) This issue incorporates a different regulator spacer and bushing assembly (113, figure 2-9). Its bushing (114) is of a harder material to increase service life expectancy than on the carburetor in the basic technical manual.
- (7) This issue incorporates a strainer support wire in the strainer assembly (91, figure 2-9) to prevent the strainer from crushing.
- (8) The manual mixture control needle valve (109, figure 2-9) on this issue carburetor is of harder material for increased service life expectancy.
- (9) This issue carburetor uses a different part number manual mixture control spring (108, figure 2-9).
- (10) This issue incorporates a manual mixture control nut (104, figure 2-9) of different design and harder material than on the carburetor in the basic technical manual.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-38) and History Sheet (figure 4-41). Refer to figures 4-39 and 4-40 for flow limits.

PREPARATION FOR STORAGE, PACKING AND RE-CONDITIONING AFTER STORAGE. Same as outlined in Section III of this manual. Difference Data Sheet

SETTING SPECIFICATIONS FOR INJECTION CARBURETOR PS-5C

391629-5

ENGINE MODEL: O-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391629 DATE ISSUED: 6-25-58

	ENGINE MFGR.: Continental		DATE	ISSUED: 6-25-58	
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR I	REMARKS
		000001			
	Main Body Assembly	366691	1.	01 40	
	Jet, Main Metering	390188		Size: 43	
	Seat, Idle & Power Enrichment Valve	383886	3.		
4.	Diaphragm Assembly, Idle & Power	364969	4.		
=	Enrichment Seat, Manual Mixture Control	204067	5.		· 1
	Valve, Manual Mixture Control Needle	384967 366298	6.		
	Needle & Seat Assy., Poppet Valve	366462	7.	·	٠.
'.	Seat, Poppet Valve	366381	1		
,	Valve, Poppet	366138	i	• •	
8.	Seat Assembly, Discharge Nozzle	366476	8.		
-	Seat, Discharge Nozzle	383924			
	Valve, Discharge Nozzle	383474			
	Bleeder, Discharge Nozzle Air	383922	9.		
	Reducer, Vacuum	384606		Size: 44 .	
11.	Vapor Vent	[	11.	Size: No. 70 drilled in 383	483
				Reg. Dia. Body	
	Venturi Throat Assembly	384599	12.	Throat Diameter: 1-5/8"	
	Washer, Regulator Spring Adjustment	384819	13.		
	Valve Assembly, Pump Relief Automatic Mixture Control Assembly	364164	14.	Not used.	
	Strainer Assembly, Fuel	366362	15. 16.	Not usea.	
	Lever, Throttle	390248	17.	•	
	Lever Assy., Manual Mixture Control	. 366487	18.		
	2010, 1100,1, 11111111111111111111111111	1 000191	1		• • •
.,					
1.	SPRING IDENTIFICATION Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010	
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .03 .4375" ± .010	1" OD
3.	Spring, Discharge Nozzle	383515	3.	Free Length: 1.875" ± .062	2" ID
4.	Spring, Manual Mixture Control	366147	4.	Free Length: 2.344" ± .065	17
5. 6.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .062	
	Spring, Poppet Valve Spring, Regulator	383518 383519	6. 7.	Free Length: .875" ± .010" .188" ± .003' Free Length: 1.937" ± .062	•
	Spring, Idle Needle Valve	384629	1	.938" -0 +.03 Free Length: .375" ± .015	31"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515		.301"!± .003' Free Length: 1.875" ± .062	מו ייב
10	Ounier Tanna Yaman to Missalli - Otan	900050		.516" -0 +.01	16''
	Spring, Losse Lever to Throttle Stop Spring, Idle Cut-Off Lever	383853 384141	10. 11.		
		'			
					· · · · · · · · · · · · · · · · · · ·
		·			
		'			
		1			

Figure 4-38. Carburetor Specification Sheet Parts List 391629-5

Engine Model: O-470 Engine Mfgr.: Continental		Fuel Inlet Pressure: 10 psi Nozzle Pressure:	e: 10 p	10 pst	(		[		ts List No.:	Carb. Model: pS-5C	-1 throug	р- ų
Engine augr. Setting.	Trimits t	Limits Dased on 734 ± . 002 Specific Gravity at 75 ± 5 r NAPHTHA Flow Limits	134 ± . U	. 002 Speci	nc Grav	Flo	75 ± 5 F.	at (5 ± 5 F. Flow Limits for Issues 1 through 6 are identical.	hrough 6	are identic	cal.	
Test Point No. 1	2	3	4 5	9	7	80	9 10					
Metering Suction   Inches of Water   0.7	0.7	2,2	6.3 12.2	2 12.2	26.4	28.6	34, 3 26, 4				·	
Corresponding Air Flow Lb./Hr. 200	200	400	8009	800 800	1150	1200	1300 1150					
	2	ρ	<u>α</u>	-	ρ	├	α					
Throttle Position WO	OM	+	1/2 1/2	十	1/2	MO W	WO 1/2					-  -
e			1	+	500	6	200 500					
Min.			31, 3 28, 3	-	32.4	28. 1	26.2 32.4					
Limits Max. 31.0		37.0	33, 2 30, 0	0 23.8	34.4	29.8	27, 3 34, 4					
Obs.						. :				,		·i
ter	No.	31.5	43.9 58.1	1 73.5	84.6	97.6	97. 6 106. 7 84. 6			-		+
uts Max.	A TOM	99.9	0.0		03.0	103.0	11. 1 69.		+		1	
				_			_	-				
Metering Min.		10, 75	34.	1	69.0							_
Head Max.		11.65	36.9	6	74.5							
Inches of Obs.							_		•			
			Multi	-Point A	utomati	c Mixtu	re Contro	Multi-Point Automatic Mixture Control Calibration Limits:	Limits:			
			Flow	Flow Method:				•	•			
<u></u>	CAUTION		Date	Date Issued:							٠.	
<b>}</b>	,		Density: Low (Leg	Density: Low (Lean) Limit:	mit:			·				
These limits an checking the car	These limits are based on flow bench checking the carburetor in the same rela-	ch a-	High	High (Rich) Limit:	ımit:							•
tive position as when i engine in the aircraft.	tive position as when it is installed on the engine in the aircraft.	he	Notes: 1.		At check point 6, points vapor vent	ooint 6, or vent	At check point 6, open vapo points vapor vent is closed.	open vapor vent and measure total flow. is closed.	easure to	otal flow.	All other check	r check
PS-5C carburetors are up-draf are checked with the discharge	rs are up-draft units and the discharge nozzle up.	nd .dr	· · ·	2. At an op	At check point and enrichmer open position,	ooint 7, nment v ion. U	7, position er valve stem Use T~25941	At check point 7, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 28° from the wide open position. Use T-25941.	alve actua valve se	iting screv t at 28° fr	w to cont om the v	act idle ide
	:											
			<u> </u>									

Figure 4-39. Carburetor Flow Bench Test Sheet (Naphtha) Parts List 391629-5

Figure 4-40, Carburetor Flow Bench Test Sheet (Heptane) Parts List 391629-5

## STROMBERG INJECTION CARBURETOR MODEL PS-5C

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGR.: Continental

ENGINE MODEL: 0-470

PS-5C carburetor, P/L 391629 is identical to P/L 391318 except that P/L 391629 incorporates a special Manual Mixture Control Lever to conform to airplane installation requirements.

ISSUE 1		
Serial 2	1-18-56	Released to production.
Serial 3	2-15-56	Installed 1/8" pipe plugs at vapor vent and fuel pressure connections in place of shipping plugs at request of the engine manufacturer.
Serial 4	2-27-56	To incorporate an improved design manual mixture control needle assembly.  The idle cut-off cam is attached to the new needle using a 366290 pin-dog point, instead of the 383504 screw and lead ball configuration.
Serial 5	4- 2-56	Parts list correction.
Serial 6	6- 5-56	Discontinued scribing the discharge diaphragm adjusting screw.
Serial 7	7-31-56	Poppet valve seat changed to provide a seat that will accommodate a poppet screen if required.
Serial 8	10- 1-56	Elimination of diffusion tube attaching rivets which are no longer required.
ISSUE 2		
Serial 9	10- 1-56	Incorporation of vinyl coated air diaphragm 366408 to increase resistance to ozone deterioration.
ISSUE 3		
Serial 10	10- 1-56	Discharge diaphragm, idle speed, and idle control rod adjusting screws changed from 32 to 56 threads per inch to provide more precise adjustments.
Serial 11	11-27-56	Incorporation of matched discharge nozzle seat and discharge needle valve assembly to prevent fuel leakage.
Serial 12	12-26-56	Addition of shipping date decalcomania.
Serial 13	1- 7-57	Regulator needle valve seat and plug gaskets change from fiber to aluminum material.
Serial 14	2-20-57	Main metering jet plug gasket changed from fiber to aluminum material.
ISSUE 4		
Serial 15	6-24-57	Changed to steel throttle shaft and Oilite throttle shaft bushings. Changed to a 200 mesh inlet fuel strainer and added an 80 mesh poppet valve strainer.
Serial 16	7-11-57	Parts list correction.
Serial 17	1- 8-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.
ISSUE 5		
Serial 18 Serial 19	3-27-58 <b>3-27</b> -58	Incorporation of hard parts at wear points to increase service life.  Regulator (outer) diaphragm assembly changed to part number 366876 to incorporate minor manufacturing change.

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this manual. Refer to 391629-6 specification sheet (figure 4-42) for information on metering variables for this issue.

COMPONENT DIFFERENCES. (See figure 2-9.)

#### a. General

- (1) This issue carburetor incorporates an inner regulator diaphragm assembly (118, figure 2-9) that has a different diaphragm and pin from the diaphragm assembly used on the carburetor in the basic technical manual. The pin used on this assembly does not extend beyond the diaphragm.
- (2) This issue incorporates a different outer regulator diaphragm assembly (103, figure 2-9) which uses a different washer than in the basic technical ruanual. The washer on this carburetor is cup shaped. This diaphragm uses a different rivet.
- (3) The manual mixture control lever assembly (83, figure 2-9) is of a different configuration to conform to airplane installation requirements and a different bushing (84, figure 2-9) is used than in the basic technical manual.
- (4) The manual mixture control link assembly (106, figure 2-9) has a different pin of harder material than the link used on the carburetor in the basic technical manual.
  - (5) The regulator needle valve assembly (95, figure

- 2-9) has a valve (97) of harder material with longer service life than on the carburetor in the basic technical manual.
- (6) This issue incorporates a different regulator spacer and bushing assembly (113, figure 2-9). Its bushing (114) is of a harder material to increase service life expectancy than on the carburetor in the basic technical manual.
- (7) This issue incorporates a strainer support wire in the strainer assembly (91, figure 2-9) to prevent the strainer from crushing.
- (!) The manual mixture control needle valve (109, figure 2-9) on this issue carburetor is of harder material for increased service life expectancy.
- (9) This issue carburetor uses a different part number manual mixture control spring (108, figure 2-9).
- (10) This issue incorporates a manual mixture control nut (104, figure 2-9) of different design and harder material than on the carburetor in the basic technical manual.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-42) and History Sheet (figure 4-45). Refer to figures 4-43 and 4-44 for flow limits.

PREPARATION FOR STORAGE, PACKING AND RE-CONDITIONING AFTER STORAGE. Same as outlined in Section III of this manual.

# Difference Data Sheet

# SETTING SPECIFICATIONS FOR INJECTION CARBURETOR PS-5C

391629-6

ENGINE MODEL: O-470
ENGINE MFGR.: Continental

DRAWING NUMBER: 391629 DATE ISSUED: 6-25-58

		ENGINE MFGR.: Continental		DATE	ISSUED: 6-	-25-58	
	ITEM		PART	ITEM	<u> </u>	<del></del>	
	NO.	DESCRIPTION	NUMBER	NO.	SIZE,	SETTING OR REMARKS	
							_
			366691	1.			
		Jet, Main Metering	390188		Size: 43		
		Seat, Idle & Power Enrichment Valve	383886 364969	3.	ļ		
	4.	Diaphragm Assembly, Idle & Power Enrichment	304909	4.	İ		
	5	Seat, Manual Mixture Control	384967	5.			
	6.	Valve, Manual Mixture Control Needle	366298	6.	ł		
		Needle & Seat Assy., Poppet Valve	366462	7.	ļ		
		Seat, Poppet Valve	366381		ŀ		
		Valve, Poppet	366138	1	!		
	8.	Seat Assembly, Discharge Nozzle	366476	8.	ł		
		Seat, Discharge Nozzle	383924				
	•	Valve, Discharge Nozzle	383474				
		Bleeder, Discharge Nozzle Air	383922	9.	g		
		Reducer, Vacuum Vapor Vent	384606	10.	Size: 44	0 drilled in 383483	
	11.	vapor vent		**•		Dia. Body	
	12	Venturi Throat Assembly	384599	12.		neter: 1-5/8"	
		Washer, Regulator Spring Adjustment	384819	13.	I III Out Dian	10.01. 1-0/0	
		Valve Assembly, Pump Relief	364164	14.			
		Automatic Mixture Control Assembly		15.	Not used.		
		Strainer Assembly, Fuel	366362	16.			
		Lever, Throttle	390248	17.			
	18.	Lever Assy., Manual Mixture Control	366487	18.			
		•		}			
		SPRING IDENTIFICATION					
	1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length	: .8125" ± .010" ID	
						.296" ± .003"	
	2.	Spring, Discharge Needle	383514	2.	Free Length	: .5625" ± .031" OD	
	. ,	Spring, Discharge Nozzle	383515		The Tour	.4375" ± .010"	
. ;.	٥.	Spring, Discharge Nozzie	202212	3.	LLee rengtu	: 1.875" ± .062" ID .516" -0 +.016"	
	4.	Spring, Manual Mixture Control	366147	4.	Free Length	: 2.344" ± .063" ID	
ď					Tree Pengin	.193" ± .005"	
`.	5.	Spring, Pump Diaphragm	383517	5.	Free Length	: 2.500" ± .0625" ID	
					_	. 516" ± .010"	
	6.	Spring, Poppet Valve	383518	6.	Free Length	: .875" ± .010" OD	
	_ 1			, _		.188" ± .003"	
	7.	Spring, Regulator	383519	7.	Free Length	: 1.937" ± .062" ID	
	8.	Spring, Idle Needle Valve	384629	ا ا	Fran I anoth	.938" -0 +.031"	
	٥.	Spring, late Needle Valve	304028	0.	Free Length	: .375" ± .015" OD .301" ± .003"	
	9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9	Free Length	: 1.875" ± .062" ID	
				- 1		.516" -0 +.016"	
٠.		Spring, Losse Lever to Throttle Stop	383853	10.			
	11.	Spring, Idle Cut-Off Lever	384141	. 11.			
	٠.						
•							:
	-						
	•		• • •				

Figure 4-42. Carburetor Specification Sheet Parts List 391629-6

Fimire 4-49 Carhiretor Flow Ranch Test Shoot (Nanhtha) Darts List 391629-6

ecific Gravity	Limits Based on .692 ± .002 Specific Gravity at 75 ± 5 °F.   Date Issued HEPTANE	carburetor in the same relative position as when It is installed on the engine in the alrcraft.  PS-5C carburetors are up-draft units and are checked with the discharge nozzle up.
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Figure 4-44. Carburetor Flow Bench Test Sheet (Heptane) Parts List 391629-6

391629

### STROMBERG INJECTION CARBURETOR MODEL PS-5C

## HISTORY OF SPECIFICATIONS AND FLOW LIMITS

ENGINE MFGR .: Continental

ENGINE MODEL: 0-470

PS-5C carburetor, P/L 391629 is identical to P/L 391318 except that P/L 391629 incorporates a special Manual Mixture Control Lever to conform to airplane installation requirements.

ISSUE 1		
Serial 2	1-18-56	Released to production.
Serial 3	2-15-56	Installed 1/8" pipe plugs at vapor vent and fuel pressure connections in place of shipping plugs at request of the engine manufacturer.
Serial 4	2-27-56	To incorporate an improved design manual mixture control needle assembly. The idle cut-off cam is attached to the new needle using a 366290 pin-dog point,
Serial 5	4- 2-56	instead of the 383504 screw and lead ball configuration.  Parts list correction.
Serial 6	6- 5-56	Discontinued scribing the discharge diaphragm adjusting screw.
Serial 7	7-31-56	Poppet valve seat changed to provide a seat that will accommodate a poppet
Serial I	1-31-30	screen if required.
Serial 8	10- 1-56	Elimination of diffusion tube attaching rivets which are no longer required.
ISSUE 2		
Serial 9	10- 1-56	Incorporation of vinyl coated air diaphragm 366408 to increase resistance to ozone deterioration.
ISSUE 3		
Serial 10	10- 1-56	Discharge diaphragm, idle speed, and idle control rod adjusting screws changed from 32 to 56 threads per inch to provide more precise adjustments.
Serial 11	11-27-56	Incorporation of matched discharge nozzle seat and discharge needle valve assembly to prevent fuel leakage.
Serial 12	12-26-56	Addition of shipping date decalcomania.
Serial 13	1- 7-57	Regulator needle valve seat and plug gaskets change from fiber to aluminum material.
Serial 14	2-20-57	Main metering jet plug gasket changed from fiber to aluminum material.
ISSUE 4		
Serial 15	6-24-57	Changed to steel throttle shaft and Oilite throttle shaft bushings. Changed to a 200 mesh inlet fuel strainer and added an 80 mesh poppet valve strainer.
Serial 16	7-11-57	Parts list correction.
Serial 17	1- 8-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.
ISSUE 5	•	
Serial 18	3-27-58	Incorporation of hard parts at wear points to increase service life.
Serial 19	3-27-58	Regulator (outer) diaphragm assembly changed to part number 366876 to incorporate minor manufacturing change.
ISSUE 6 Serial 20	5-23-58	Treamountless of wheel descended (mod) to an analysis of the second
Serial 20	U-20-00	Incorporation of vinyl impregnated (red) inner regulator diaphragm.
		NOTE: Flow bench test limits for Issues 1 through 6 are identical.

THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this issue carburetor. The following tool is used instead.

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-46	5220

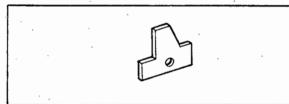


Figure 4-46. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-6 Specification Sheet (figure 4-48) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) This issue does not incorporate a relief valve assembly (26) or gasket (32).
- (2) This issue carburetor uses a different idle and power enrichment diaphragm assembly (47).
- (3) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
  - (4) Main metering jet (88) is smaller.
- (5) This issue incorporates an 80 mesh screen on strainer assembly (91) instead of a 200 mesh as used on the carburetor in the basic technical manual.
  - (6) Valve and seal assembly (95) uses harder parts decrease wear.

regulator needle plug is used instead of a popfuel strainer (100).

- (8) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (9) Link assembly (106) has harder parts incorporated to decrease wear.
- (10) Plug (107) has different inside diameter dimensions.
- (11) Spring (108) is shorter.
- (12) Valve (109) is made of harder material to reduce wear.
- (13) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (14) Diaphragm assembly (118) uses harder parts to decrease wear.
- (15) Main body assembly (143) is different on this parts list and issue carburetor.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly procedures are the same as outlined in Section II.

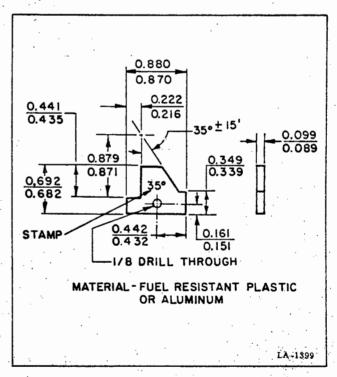


Figure 4-47. Dimensions for Manufacturing the T25939 Gage

### TEST PROCEDURES.

- a. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-48), Flow Limits Sheet (figure 4-49) and History Sheet (figure 4-50).
- b. Use the T25939 gage to establish the opening point of the idle and power enrichment valve as described in paragraph 3-12, i.

#### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-47.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

ENGINE MODEL: E-165 & E-185
ENGINE MFGR.: Continental

DRAWING NUMBER: 380223 DATE ISSUED: 12-30-57

٠.	l	ENGINE MFGR.: Continental		DATE	ISSUED: 12-30-57
-	ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
		i polo de contra	000000		
	1.	Main Body Assembly	366691	1.	
	2.	Jet, Main Metering	390188	2.	Size: 44
	3.	Seat, Idle & Power Enrichment Valve	383886	3.	
	4.	Dia. Assy., Idle & Power Enrichment	384675	4.	
	5.	Seat, Manual Mixture Control Needle	384967	5.	
	6.	Valve, Manual Mixture Control	366 <b>2</b> 98	6.	
	7.	Needle & Seat Assy., Poppet Valve	366462	7.	
		Seat, Poppet Valve	366381		• •
		Valve, Poppet	366138		<u>'</u>
	8.	Seat Assy., Discharge Nozzle	366476	8.	
		Seat, Discharge Nozzle	383924		
٠.		Valve, Discharge Nozzle	383474		
	9.	Bleeder, Discharge Nozzle Air	383922	9.	
	10.	Reducer, Vacuum	384606	10.	Size: 44
	11.	Vapor Vent		11.	Size: No. 70 drilled in 383483 reg. cover
	12.	Venturi Throat Assy.	384599	12.	Throat Diameter: 1.625" ± .002"
	13.	Washer, Regulator Spring Adjustment	384819	13.	
	14.	Valve Assy., Pump Relief		14.	Not used.
	15.	Automatic Mixture Control Assy.		15.	Not used.
	16.	Strainer Assy., Fuel	364858	16.	
-	17.	Lever, Throttle	390248	17.	•
		,			
		SPRING IDENTIFICATION			
	1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010"
			000012		ID: .296" ± .003"
	2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031"
		l libonia Bo 1100 dio	000011	~	OD: .4375" ± .010"
	3.	Spring, Discharge Nozzle	393515	3.	
	٠.	opring, Discharge Nozzle	333313	٥.	Free Length: 1.875" ± .062"
	4.	Spring, Manual Mixture Control	366147	,	ID: .516" - 0 + .016"
		opring, wantar wixture Control	300141	4.	Free Length: 2.344" ± .063"
	5.	Saring Duma Dioshuagm	202517	_	ID: .193" ± .005"
	٥.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
		Contag Donnat Malus	000510		ID: .516" ± .010"
	6.	Spring, Poppet Valve	383518	6.	Free Length: .875" ± .010"
	_	Section B colors Black and		· _	OD: .188" ± .003"
	7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
	•	0. 41- TN W. N. W. N.			ID: .938" - 0 + .031"
	8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"
	. ,	,			OD: .301" ± .003"
	9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"
			·		ID: .516" - 0 + .016"
	10.	Spring, Loose Lever to Throttle Stop	383853	10.	
	11.	Spring, Idle Cut-Off Lever	384141	11.	·
					·
					•
					•
	. •		**		. ,
			,		
	-				
		· .			·
				'	

Figure 4-48. Carburetor Specification Sheet, Parts List 380223-6

P/L 3002	.23-	- O	· T	<del></del>	1	<del>-,</del> -				_	FI	OV	V T	'ES	TL	IM	ITS					MOE Injection	EL: PS
Fuel Inlet Pressure: 10 psi Nozzle Pressure: Carb. Model: ps-5C Limits Based on. 734 ± .002 Specific Gravity at 75 ± 5 °F. Date Issued: 3-3-58	Flow limits for Issues 2 through 6 are identical.	4 5 6 7 8 9 10	. 0	600 800 800 1000	000 da da	1/2 1/2 1/2 WO WO WO	250 300 300 500 500	31.5 29.4 27.1 20.8 33.6 28.0 26.2 33.4 31.2 28.7 23.0 35.7 29.8 27.4	-	46.7 60.8 76.2	49.5   64.4   83.8   86.5   103.8		12.2 36.2	39.4		Multi-Point Automatic Mixture Control Calibration Limits:	Flow Method:	Date Issued:	Density: Low (Lean) Limit: High (Rich) Limit:	Notes: 1. Check Points 3 through 7 are made with throttle valve in 1/2 open position.	2. At Check Point 7, open vapor vent and measure total flow. All other points vapor vent is closed.	3. At Check Point 8, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.	4. Check Points 1, 2, 8 9 and 10 are made with throttle valve in the wide open position
Fuel Inlet Pressure: Nozzle Pressure: Limits Based on. 734	NAPHTHA	2 .3		000	0	1/2		28.0 3	-	29.4	Flow 31.2 3			T						n flow bench checking	on the engine in the	o-draft units and are nozzle up	
Engine Model: E-165 & E-185 Engine Mgr.: Continental Engine Mgr. Setting: 530486		Test Point No. 1	Metering Suction Inches of Water 0.7	Corresponding Air Flow Lb./Hr. 200		on	.e Volume	Limits Max. 31.0	In Seconds Obs.	ter Min.	Limits Max. 29.9			Head Max.	Inches of Fuel Obs.		•		CAUTION	These limits are based on flow bench checking	the carburetor in the same relative position as when it is installed on the engine in the aircraft.	PS-5C carburetors are up-draft checked with the discharge nozzle	

Figure 4-49 Carburator Diam na

## MODEL: PS-5C Injection Carburetor

# HISTORY OF CHANGES

P/L 380223

	Engine Mfgr.:	Continental • Engine Model: E-165 & E-185
ISSUE 1	:	
Serial	1 7-25-47	Parts list released to production.
	2 10-27-47	Parts list records change only.
: Serial		Parts list records change only.
·		and the record of change only.
ISSUE 2		
Serial	12-19-47	Discharge nozzle air bleeder seal P/N 390267 changed to P/N 250-S-5 to
		provide an improved seal.
Serial	5 5- 7-48	Parts list records change only.
Şerial (	5 5-5-49	Parts list records change only.
ISSUE 3		
Serial	7 9- 9-49.	Loose lever assembly P/N 383845 changed to P/N 364378 to incorporate an
		adjustable enrichment valve actuating screw.
Serial 8		Parts list records change only.
Serial 9		Parts list records change only.
Serial 10		Parts list records change only.
Serial 1		Parts list records change only.
Serial 12	2 10-18-50	Fuel strainer P/N 383520 changed to P/N 364858 assembly to provide an
		improved filter.
Serial 13		Parts list records change only.
Serial 14	12-21-50	Discharge nozzle air bleeder seal P/N 250-S-5 changed to P/N 315-S-5 to
		specify improved material.
Serial 15	1-29-51	Loose lever assembly P/N 364378 changed to P/N 364974 to allow for lock-
		wire.
Serial 16	8- 2-51	Poppet valve seat and plug gasket P/N P3260 changed to P/N P5319 to facili-
. 1		tate assembly.
Serial 17		Parts list records change only.
Serial 18	5- 1-52	Fuel strainer plug gasket P/N P22851 changed to P/N 365533 to provide
01 10	10 10 50	improved material.
Serial 19	10-16-52	Parts list records change only.
ICCIIE A		
ISSUE 4 Serial 20	8-24-53	Regulator spacer and bushing assembly P/N 383946 changed to P/N 365796
Deriai 20	. 0-21-00	and spacer plug P/N P8508 changed to P/N P60000 taper seat plug. to elimin-
	,	ate possibility of cracking spacer from overtorque of the pipe threaded plug
		and/or test fitting.
Serial 21	10-22-53	Parts list records change only.
Serial 22		Parts list records change only.
Serial 23		Parts list records change only.
Serial 24		Manual mixture control needle valve P/N 384968 changed to P/N 366291 and
, Dollar D.	0 20 00	idle cut-off cam attaching screw P/N 383504 changed to P/N 366290 dog point
	:	pin and P/N P19983 lead ball eliminated to improve cam attaching.
Serial 25	9-28-55	Parts list records change only.
Serial 26		Plug P/N 396660 removed from fuel pressure connection and replaced with
		plug P/N P8508. Plug P/N P8508 added to vapor vent and drain, per request
		of engine manufacturer.
Serial 27	3-20-56	Seat and needle assembly - regulator P/N 384836 replaced with assembly
		P/N 366382. Seat (regulator needle) P/N 384138 replaced with seat P/N
		366381, to accommodate poppet screen P/N 366373.
Serial 28	4-19-56	Diffusion tube attaching rivets removed, holes eliminated from main body of
		new production units.
Serial 29	6- 5-56	Scribe line and prick punch markings removed from discharge nozzle adjust-
		ing screw bushing. Change made to prevent possible damage and leakage
		around the bushing.
Serial 30	11-27-56	To provide a leak tested matched discharge needle and seat assembly.
Serial 31	12-26-56	Parts list correction.
Serial 32	1- 7-57	Regulator needle valve seat gasket material changed to improve fuel sealing
		at this location.
Serial 33	2-20-57	Gasket material changed in main metering jet and power enrichment valve
100		seat gaskets to provide a more positive fuel seal.

Figure 4-50. Carburetor History Sheet, Parts List 380223-6 (Sheet 1 of 2)

P/L 380223	·	HISTORY OF CHANGES (Continued)	MODEL: PS-5C Injection Carburetor
ISSUE 5 Serial 34	7-23-57	Various adjusting screws changed to a finer threa adjustment.	ad to provide more exact
ISSUE 6 Serial 35 Serial 36	10- 7-57 12-30-57	Incorporation of hard parts at wear points to incr Parts list correction.	ease service life.
		NOTE: Flow bench test limits for Issue 2 throug	h 6 are identical.

Figure 4-50. Carburetor History Sheet, Parts List 380223-6 (Sheet 2 of 2)

THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this issue carburetor. The following tool is used instead.

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-51	5220

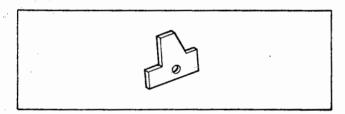


Figure 4-51. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-7 Specification Sheet (figure 4-53) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) This issue does not incorporate a relief valve assembly (26) or gasket (32).
- (2) This issue carburetor uses a different idle and power enrichment diaphragm assembly (47).
  - (3) Cover assembly (53), screw assembly (52) and locking cup (3) have been changed to provide a limited field adjustment for the discharge nozzle. The new cover assembly (53A) has a pin (3B) installed in the bushing that acts as a stop when making an adjustment.
  - (4) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
    - (5) Main metering jet (88) is smaller.
  - (6) This issue incorporates an 80 mesh screen on strainer assembly (91) instead of a 200 mesh as used on the carburetor in the basic technical manual.

- (7) Valve and seat assembly (95) uses harder parts to decrease wear.
- (8) A regulator needle plug is used instead of a poppet valve fuel strainer (100).
- (9) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (10) Link assembly (106) has harder parts incorporated to decrease wear.
- (11) Plug (107) has different inside diameter dimensions.
  - (12) Spring (108) is shorter.
- (13) Valve (109) is made of harder material to reduce wear.
- (14) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (15) Diaphragm assembly (118) uses harder parts to decrease wear.
- (16) Main body assembly (143) is different on this parts list and issue carburetor.

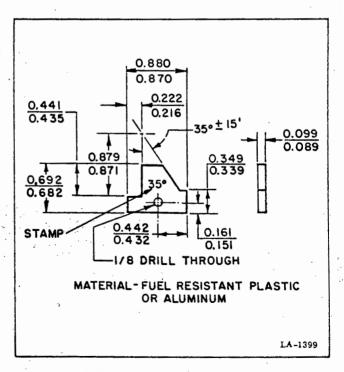


Figure 4-52. Dimensions for Manufacturing the T25939 Gage

### OVERHAUL PROCEDURES.

- a. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement and Lubrication procedures are the same as outlined in Section II.
- b. Reassembly. The limit pin shall be installed in one of the seven drilled holes in the adjusting screw bushing in such a position that the adjusting screw assembly may be rotated one-half turn in either direction.

### TEST PROCEDURES.

a. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-53),

Flow Limits Sheet (figure 4-54) and History She (figure 4-55).

b. Use T25939 gage to establish the opening point the idle and power enrichment valve as described paragraph 3-12, i.

### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-52.

PREPARATION FOR STORAGE, PACKAGING AN RECONDITIONING AFTER STORAGE. Same : outlined in Section III of this technical manual.

MODEL: PS-5C Injection Carburetor

## SETTING SPECIFICATIONS

P/I.380223-7

		ENGINE MODEL: E-165 & E-185 ENGINE MFGR.: Continental			VING NUMBER: 380223
	L		· · · · · · · · · · · · · · · · · · ·		
	NO.	DESCRIPTION	PART NUMBER	NO.	SIZE, SETTING OR REMARKS
	1.	Main Body Assembly	366691	1.	
	2.	Jet, Main Metering	390188	2.	Size: 44
	3.	Seat, Idle & Power Enrichment Valve	383886	3.	
	4.	Dia. Assy., Idle & Power Enrichment	384675	4.	
	5.	Seat, Manual Mixture Control Needle	384967	5.	
	6.	Valve, Manual Mixture Control	366298	6.	and the second s
	7.	Needle & Seat Assy., Poppet Valve	366462	7.	
		Seat, Poppet Valve	366381		•
		Valve, Poppet	366138		
	8.	Seat Assy., Discharge Nozzle	366476	8.	
		Seat, Discharge Nozzle	383924		·
	9.	Valve, Discharge Nozzle Bleeder, Discharge Nozzle Air	383474 383922	9.	
	10.	Reducer, Vacuum	384606	10.	Size: 44
	11.	Vapor Vent	304000	11.	Size: No. 70 drilled in 383483 reg. cover
	12.	Venturi Throat Assy.	384599	12.	Throat Diameter: 1.625" ± .002"
٠.	13.	Washer, Regulator Spring Adjustment	384819	13.	111000 211000 1 100
	14.	Valve Assy., Pump Relief		14.	Not used.
	· 15.	Automatic Mixture Control Assy.		15.	Not used.
	16.	Strainer Assy., Fuel	364858	16.	
	17.	Lever, Throttle	390248	17.	
	.`		•		
٠.	: .				
		SPRING IDENTIFICATION		-	
	1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010"
٠.	•	opring, fale out off Flanger	303312	1.	ID: .296" ± .003"
	2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031"
					OD: .4375" ± .010"
	3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"
					ID: .516" - 0 + .016"
	4.	Spring, Manual Mixture Control	366147	4.	Free Length: 2.344" ± .063"
	-	Canina Baras Blackman	200545	_	ID: $.193" \pm .005"$
	5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
	6.	Spring, Poppet Valve	383518	6.	ID: .516" ± .010"
	٥.	bping, Popper varve	303316	٠. ا	Free Length: .875" ± .010" OD: .188" ± .003"
	7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
			-		ID: .938" - 0 + .031"
	8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"
				I	OD: .301" ± .003"
	9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"
	10.	Spring, Loose Lever to Throttle Stop	383853	10.	ID: .516" - 0 + .016"
	10.	oping, hoose hever to infottle btop	303033	10.	
	11.	Spring, Idle Cut-Off Lever	384141	11.	
				٠.	
				1	
-	:				Control of the Contro
					<i>r</i>
~					
					•

. Figure 4-53. Carburetor Specification Sheet, Parts List 380223-7

P/L 380223-	<u>-</u>								_	FL	<u>wo</u>	<u>T</u>	ES	T L	M.	ITS ·					MOD Injection	Carb	PS- ure
Parts List No.: 380223-7 Carb. Model: ps-5C Date Issued: 5-26-58 through 7 are identical.														•	Multi-Point Automatic Mixture Control Calibration Limits:				Check Points 3 through 7 are made with throttle valve in $1/2$ open position.	At Check Point 7, open vapor vent and measure total flow. All other points vapor vent is closed.	At Check Point 8, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 35° from the wide open position.	9 and 10 are made with throttle valve in the wide open	
5°F.	10	98.			-		8 27.4		9 106. 5	103.8 111.0		0	0		Control Calil				ugh 7 are ma	pen vapor ver	osition enrich e stem with t	9 and 10 are	
at 75 ± Iimits fo	6.	30.9	-		-		7 29.8		6 97.9	10		77.0	84.0		lixture				3 thro	At Check Point 7, op vapor vent is closed.	nt 8, po nt valv	1, 2, 8	
ravity	00	20.8	-	-	2	-	0 35.7		2 81.		<del>-</del> -	-			natic M				Points	ck Poir	ck Poir richme n.	Points n	
Fuel Inlet Pressure: 10 psi Nozzle Pressure: Limits Based on. 734 ± . 002 Specific Gravity at NAPHTHA	7	13.4	1	<u></u>		_	27. 1 20. 8 28. 7 23. 0		60.8 76.2	64.4 83.8	· .	36.2	4		Auton	ij	٠.٠	Density: Low (Lean) Limit: High (Rich) Limit;	Check	At Che vapor	At Check and enric position.	Check Points 1, 2, 8 position	
psi 002 Spe	5 6	7 25 13		-			31.2 28		46.7 60			36	38		i-Poin	Flow Method:	Date Issued:	Density: Low (Lean) High (Rich)	Notes: 1.	8	က်	<b>4i</b> .	
e: 10 psi	4	3.1	<del>                                     </del>		1.		33, 4 31		34.85 46		<u> </u>	12.2	13.4		Mult	Flow	Date	Density: Low (Les High (Ric	Note	<u> </u>			
Fuel Inlet Pressure: Nozzle Pressure: Limits Based on. 734 NAPHTHA	6	. 9	<del></del>		7		29.8 3	<del></del>	29.4 34	31.2 36	<u> </u>	113	13			· · .	i ;		5.0	c e	e e		
Fuel Inlet Pressure: Nozzle Pressure: Limits Based on. NAPHTHA							2 2							<del>-</del>				:	heckin	itive position engine in the	units and are up.		
Fuel Nozz Limi NAP	2	0.7	200		15	-	.   -	-	No	Flow		_						~~1	o uoue	lative engin			
					-					1								$\left\{ z \right\}$	flow b	me re	-draft nozzle		
-185 al 486																.`	•	CAUTION	uo pası	in the same rel installed on the	are up charge		
E-165 & E-185 Continental etting: 530486	-	0.7	200	æ	WO		31.0		28.2	29.9							-		are ba	or in s inst	etors he disc		
	No.	ater	ing 5./Hr.	ion	sition	Volume	Max.	Obs.	Min.	Max.	Obs.	Min.	Max.	Obs.					These limits are based on flow bench checking	the carburetor in the same relative position as when it is installed on the engine in the aircraft.	PS-5C carburetors are up-draft checked with the discharge nozzle		
Engine Model: E-165 & E-18 Engine Migr.: Continental Engine Migr. Setting: 530486	Test Point No.	Metering Suction Inches of Water	Corresponding Air Flow Lb./Hr	Mixture Control	Throttle Position	Burette	Limits	In	Flowmeter	Limits	In Lbs./Hr.	Metering	Head	Inches of Fuel			·		These	the cark as when aircraft.	PS-5C checke		

Figure 4-54. Carburator Flow Danner m

	Engine Mfgr.:	Continental	Engine Model: E-165 & E-185
ISSUE 1			
Serial 1	7-25-47	Parts list released	o production.
Serial 2		Parts list records of	
Serial 3	12- 5-47	Parts list records of	
ISSUE 2			
Serial 4	12-19-47	Discharge nozzle ai	bleeder seal P/N 390267 changed to P/N 250-S-5 to
		provide an improved	seal.
Serial 5	5- 7-48	Parts list records of	
Serial 6	5- 5-49	Parts list records of	nange only.
ISSUE 3			
Serial 7	9- 9-49		ly P/N 383845 changed to P/N 364378 to incorporate an
			nt valve actuating screw.
Serial 8		Parts list records of	
Serial 9		Parts list records of	
Serial 10			
Serial 11		Parts list records o	nange only.
Serial 12	10-18-50		83520 changed to P/N 364858 assembly to provide an
Serial 13	12-14-50	improved filter. Parts list records c	hange only
Serial 13	12-21-50	Discharge nozzle ai	bleeder seal P/N 250-S-5 changed to P/N 315-S-5 to
Serial 14	12-21-00	specify improved m	
Serial 15	1-29-51	Loose lever assemb	ly P/N 364378 changed to P/N 364974 to allow for lock-
Control 16	8- 2-51	wire.	d plum market D/N D2960 abanded to D/N D2210 to facili
Serial 16	0- 2-31	tate assembly.	d plug gasket, P/N P3260 changed to P/N P5319 to facili-
Serial 17	1-18-52	Parts list records c	nange only
Serial 18	5- 1-52		asket P/N P22851 changed to P/N 365533 to provide
berrar 10	. 0- 1-02	improved material.	ionee 17 it 1 baoo1 emanged to 17 it occord to provide
Serial 19	10-16-52	Parts list records c	nange only.
		•	
ISSUE 4	:		
Serial 20	8-24-53		d bushing assembly P/N 383946 changed to P/N 365796
	10 to		P8508 changed to P/N P60000 taper seat plug, to elimin-
		and/or test fitting.	cking spacer from overtorque of the pipe threaded plug
Serial 21	10-22-53	Parts list records c	aange only
Serial 22	10-26-53	Parts list records c	
Serial 23	8- 9-54	Parts list records c	
Serial 24	9-19-55		rol needle valve P/N 384968 changed to P/N 366291 and
501141 21		idle cut-off cam atta	ching screw P/N 383504 changed to P/N 366290 dog point
			lead ball eliminated to improve cam attaching.
Serial 25	9-28-55	Parts list records c	ange only.
Serial 26	2-10-56	Plug P/N 396660 re	moved from fuel pressure connection and replaced with
	· ·	plug P/N P8508. Pl	ug P/N P8508 added to vapor vent and drain, per request
		of engine manufactur	
Serial 27	3-20-56		mbly - regulator P/N 384836 replaced with assembly
			egulator needle) P/N 384138 replaced with seat P/N
			date poppet screen P/N 366373.
Serial 28	4-19-56		ing rivets removed, holes eliminated from main body of
G1 C0	. ·	new production units	
Serial 29	6- 5-56		punch markings removed from discharge nozzle adjust- Change made to prevent possible damage and leakage
		around the bushing.	change made to prevent possible damage and leakage
Serial 30	11-27-56		sted matched discharge needle and seat assembly.
Serial 31	12-26-56	Parts list correction	
Serial 32	1- 7-57		ve seat gasket material changed to improve fuel sealing
-		at this location.	
Serial 33	2-20-57	Gasket material cha	nged in main metering jet and power enrichment valve
		seat gaskets to prov	de a more positive fuel seal.

Figure 4-55. Carburetor History Sheet, Parts List 380223-7 (Sheet 1 of 2)

P/L 380223		HISTORY OF CHANGES (Continued)	MODEL: PS-5C Injection Carburetor
ISSUE 5 Serial 34	7-23-57	Various adjusting screws changed to a finer thread to adjustment.	provide more exact
ISSUE 6 Serial 35 Serial 36	10- 7-57 12-30-57	Incorporation of hard parts at wear points to increase Parts list correction.	e service life.
ISSUE 7 Serial 37	5-26-58	Incorporation of discharge nozzle adjustment limiter adjustment for the off idle range.	to provide a safe field
		NOTE: Flow bench test limits for Issue 2 through Iss	sue 7 are identical.

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual, except the T25941 Gage is not used on this issue carburetor. The following tool is used instead.

Part	Nomenclature	Figure	USAF
No.		No.	Stock No.
T25939	Assembly Gage - Enrichment valve screw adjusting	4-56	5220

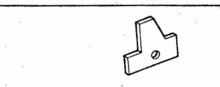


Figure 4-56. T25939 Enrichment Valve Screw Adjusting Assembly Gage

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 380223-8 Specification Sheet (figure 4-58) for information on metering variables for this issue.

#### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) This issue does not incorporate a relief valve assembly (26) or gasket (32).
- (2) This issue carburetor uses a different idle and power enrichment diaphragm assembly (47).
- (3) Cover assembly (53), screw assembly (52) and locking cup (3) have been changed to provide a limited field adjustment for the discharge nozzle. The new cover (53A) assembly has a pin (3B) installed in the bushing that acts as a stop when making an adjustment.
- (4) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
  - (5) Main metering jet (88) is smaller.
- (6) This issue incorporates an 80 mesh screen on strainer assembly (91) instead of a 200 mesh as used on the carburetor in the basic technical manual.

- (7) Valve and seat assembly (95) uses harder parts to decrease wear.
- (8) A regulator needle plug is used instead of a poppet valve fuel strainer (100).
- (9) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (10) Link assembly (106) has harder parts incorporated to decrease wear.
- (11) Plug (107) has different inside diameter dimensions.
  - (12) Spring (108) is shorter.
- (13) Valve (109) is made of harder material to reduce wear.
- (14) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (15) Diaphragm assembly (118) is impregnated with vinyl to reduce ozone attack; assembly uses parts that are hardened to reduce wear.
- (16) Main body assembly (143) is different on this parts list and issue carburetor.

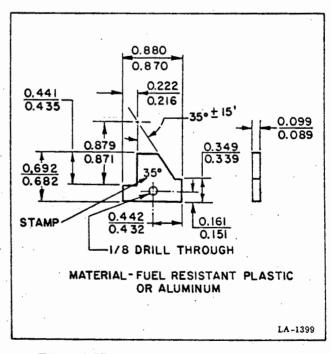


Figure 4-57. Dimensions for Manufacturing the T25939 Gage

### OVERHAUL PROCEDURES.

- a. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement and Lubrication procedures are the same as outlined in Section II.
- b. Reassembly. The limit pin shall be installed in one of the seven drilled holes in the adjusting screw bushing in such a position that the adjusting screw assembly may be rotated one-half turn in either direction.

### TEST PROCEDURES.

a. The same as outlined in Section III of this technical manual except use Specification Sheet (figure

- 4-58), Flow Limits Sheet (figure 4-59) and History Sheet (figure 4-60).
- b. Use T25939 gage to establish the opening point of the idle and power enrichment valve as described in paragraph 3-12, i.

#### NOTE

To manufacture the T25939 gage locally, use the dimensions given in figure 4-57.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

MODEL: PS-5C Injection Carburetor

### SETTING SPECIFICATIONS

P/L 380223-8

Inject	ENGINE MODEL: E-165 & E-185	····		VING NUMBER: 380223
	ENGINE MFGR.: Continental		DATE	ISSUED: 5-26-58
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
1. 2. 3. 4. 5. 6. 7.	Main Body Assembly Jet, Main Metering Seat, Idle & Power Enrichment Valve Dia. Assy., Idle & Power Enrichment Seat, Manual Mixture Control Needle Valve, Manual Mixture Control Needle & Seat Assy., Poppet Valve	366141 390188 383886 384675 384967 366298 366462	1. 2. 3. 4. 5. 6.	Size: 44
8.	Seat, Poppet Valve Valve, Poppet Seat Assy., Discharge Nozzle Seat, Discharge Nozzle Valve, Discharge Nozzle	366381 366138 366476 383924 383474	8.	
9. 10. 11. 12. 13.	Bleeder, Discharge Nozzle Air Reducer, Vacuum Vapor Vent Venturi Throat Assy. Washer, Regulator Spring Adjustment	383922 . 384606 384599 384819	9. 10. 11. 12. 13.	Size: 44 Size: No. 70 drilled in 383483 reg. cover Throat Diameter: 1.625" ± .002"
14. 15. 16. 17.	Valve Assy., Pump Relief Automatic Mixture Control Assy. Strainer Assy., Fuel Lever, Throttle	364858 390248	14. 15. 16. 17.	Not used. Not used.
1.	SPRING IDENTIFICATION Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010" ID: .296" ± .003"
	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031" OD: .4375" ± .010"
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"  ID: .516" - 0 + .016"
4. 5.	Spring, Manual Mixture Control Spring, Pump Diaphragm	366147 383517	4. 5.	Free Length: 2.344" ± .063"  ID: .193" ± .005"  Free Length: 2.500" ± .0625"
	Spring, Poppet Valve	383518	6.	ID: .516" ± .010"  Free Length: .875" ± .010"
7.	Spring, Regulator Diaphragm	383519	7.	OD: .188" ± .003" Free Length: 1,937" ± .062"
8.	Spring, Idle Needle Valve	384629	8.	ID: .938" - 0 + .031" Free Length: .375" ± .015"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	OD: .301" ± .003" Free Length: 1.875" ± .062"
10.	Spring, Loose Lever to Throttle Stop	383853	10.	ID: .516" - 0 + .016"
11.	Spring, Idle Cut-Off Lever	384141	11.	
		•		
			. * .	
			-	

Figure 4-58. Carburetor Specification Sheet, Parts List 380223-8

Figure 4-59. Carburntor Flow Banch Tact Shoot Doute I tot 200999 0

## HISTORY OF CHANGES

		Engine Mfgr.:	Continental	Engine Model: E-165 & E-185
		,		•
ISSUE 1		•	•	
Serial		7-25-47	Parts list releas	ed to production.
Serial		10-27-47	Parts list recor	
Serial		12- 5-47	Parts list recor	
ISSUE 2				
Serial	4	12-19-47		e air bleeder seal P/N 390267 changed to P/N 250-S-5 to
			provide an impr	
Serial		5- 7-48	Parts list recor	
Serial	6	5- 5-49	Parts list recor	is change only.
TOOME 9				
ISSUE 3 Serial		9- 9-49	I oose lever ass	embly P/N 383845 changed to P/N 364378 to incorporate an
Serial	•	9- 9-49		ment valve actuating screw.
Serial	8	2- 9-50	Parts list recor	
Serial	-,	5-11-50	Parts list recor	
Serial		8-24-50	Parts list record	
Serial		9- 7-50	Parts list record	
Serial	12	10-18-50	Fuel strainer P/	N 383520 changed to P/N 364858 assembly to provide an
			improved filter.	
Serial		12-14-50	Parts list recore	is change only.
Serial	14	12-21-50		e air bleeder seal P/N 250-S-5 changed to P/N 315-S-5 to
			specify improve	
Serial	15	1-29-51		embly P/N 364378 changed to P/N 364974 to allow for lock-
Serial	16	8- 2-51	wire.	t and plug gasket P/N P3260 changed to P/N P5319 to facili-
Serial		0- 2-01	tate assembly.	t and plug gasket 1/14 10200 changed to 1/14 10013 to laciti-
Serial	17	1-18-52	Parts list record	is change only.
Serial		5- 1-52	Fuel strainer plu	ng gasket P/N P22851 changed to P/N 365533 to provide
			improved materi	
Serial	19	10-16-52	Parts list record	is change only.
		•		
ISSUE 4		0.04.50	D	
Serial	20	8-24-53		and bushing assembly P/N 383946 changed to P/N 365796 P/N P8508 changed to P/N P60000 taper seat plug, to elimin-
••				cracking spacer from overtorque of the pipe threaded plug
			and/or test fitting	
Serial	21	10-22-53	Parts list record	
Serial		10-26-53	Parts list record	
Serial		8- 9-54	Parts list record	
Serial	24	9-19-55	Manual mixture	control needle valve P/N 384968 changed to P/N 366291 and
				attaching screw P/N 383504 changed to P/N 366290 dog point
			-	983 lead ball eliminated to improve cam attaching.
Serial		.9-28-55	Parts list record	
Serial :	26	2-10-56	Plug P/N 396660	removed from fuel pressure connection and replaced with
				Plug P/N P8508 added to vapor vent and drain, per request
Carriel 1	0.07	3-20-56	of engine manufa	ssembly - regulator P/N 384836 replaced with assembly
Serial :	21	. 3-20-30		at (regulator needle) P/N 384138 replaced with seat P/N
				nmodate poppet screen P/N 366373.
Serial :	28	4-19-56		aching rivets removed, holes eliminated from main body of
			new production u	
Serial	29	6- 5-56	Scribe line and p	rick punch markings removed from discharge nozzle adjust-
				g. Change made to prevent possible damage and leakage
			around the bushi	
Serial		11-27-56		tested matched discharge needle and seat assembly.
Serial		12-26-56	Parts list correct	
Serial	32	1- 7-57	at this location.	valve seat gasket material changed to improve fuel sealing
Serial :	33	2-20-57		changed in main metering jet and power enrichment valve
Derial	50	2-20-01		rovide a more positive fuel seal.
			Time gardinote to p	"

Figure 4-60. Carburetor History Sheet, Parts List 380223-8 (Sheet 1 of 2)

and the second s	the second control of the second	
P/L 380223		HISTORY OF CHANGES (Continued) MODEL: PS-5C
		Injection Carburetor
TOOTING 5		
ISSUE 5 Serial 34	7-23-57	Various adjusting screws changed to a finer thread to provide more exact adjustment.
ISSUE 6		
Serial 35	10- 7-57 12-30-57	Incorporation of hard parts at wear points to increase service life. Parts list correction.
ISSUE 7 Serial 37	5-26-58	Incorporation of discharge nozzle adjustment limiter to provide a safe field adjustment for the off idle range.
ISSUE 8		
Serial 38	5-26-58	Incorporation of vinyl impregnated (red) regulator air diaphragm to provide
Serial 39	8-21-58	greater resistance to ozone attack.  To standardize on parts incorporated in PS type carburetors. Assembly P/N 366141 was P/N 366691.
		NOTE: Flow hench test limits for Issue 2 through Issue 8 are identical.

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-9 Specification Sheet (figure 4-61) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
- (2) Strainer assembly (91) has a strainer support incorporated to prevent strainer from crushing.
- (3) Valve and seat assembly (95) uses harder parts to decrease wear.
- (4) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (5) Link assembly (106) has harder parts incorporated to decrease wear.

- (6) Plug (107) has different inside diameter dimensions.
- (7) Spring (108) is shorter.
- (8) Valve (109) is made of harder material to reduce wear.
- (9) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (10) Diaphragm assembly (118) uses harder parts to decrease wear.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication and Reassembly procedures are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-61) and History Sheet (figure 4-62). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

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## SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 391318-9

ENGINE MODEL: E-225-4-8; O-470-11-13 DRAWING NUMBER: 391318

	ENGINE MFGR.: Continental			E ISSUED: 1-7-58
TEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	366141	1.	
2.	Jet, Main Metering	390188	2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	383886	3.	
4.	Diaphragm Assembly, Idle & Power Enrich-		1	
	ment	364969	4.	
5.	Seat, Manual Mixture Control Needle	384967	5.	
6.	Valve, Manual Mixture Control	366298	6.	·
7.	Needle & Seat Assy., Poppet Valve	366462	7.	
1	Seat, Poppet Valve	366381	ł	į.
.	Valve, Poppet	366138		· ·
8.	Seat Assembly, Discharge Nozzle	366476	8.	i
-	Seat, Discharge Nozzle Valve, Discharge Nozzle	383924 383474	ĺ	
9.	Bleeder, Discharge Nozzle Air	383922	9.	
	Reducer, Vacuum	384606	1	Size: 44
	Vapor Vent	504000	11.	
	Venturi Throat Assembly	384599	12.	Size: No. 70 Drilled in 383483 Reg. Cover Throat Diameter: 1.625" ± .002"
	Washer, Regulator Spring Adjustment	384819	13.	1111 Oat Diameter. 1.025 ± .002
	Valve Assembly, Pump Relief	364164	14.	İ
15.	Automatic Mixture Control Assembly		_	Not used
16.	Strainer Assembly, Fuel	366362	16.	
17.	Lever, Throttle	390248	17.	
1.	SPRING IDENTIFICATION Spring, Idle Cut-Off Plunger	202510		
1.	opring, fale cut-off Flunger	383512	1.	Free Length: .8125" ± .010" ID: .296" ± .003"
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .003
_				OD: .4375" ± .010"
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"
4	Saning Manual Minture Control			ID: .516" - 0 + .016"
4.	Spring, Manual Mixture Control	366147	4.	Free Length: 2.344" ± .063"
5.	Spring, Pump Diaphragm	202517	_	ID: .193" ± .005"
.	Spring, Fump Diaphragm	383517	5.	Free Length: 2.500" ± .0625"
6.	Spring, Poppet Valve	383518		ID: .516" ± .010"
·	Spring, Topper varve	203310	6.	Free Length: .875" ± .010"
7.	Spring, Regulator Diaphragm	383519	7.	OD: .188" ± .003"
	printing, respective Diaphragin	500015	١٠ ١	Free Length: 1.937" ± .062" ID: .938" - 0 + .031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"
9.	Spring, Idle & Enrichment Valve Diaphragm	38351 <b>5</b>	- 1	OD: .301" ± .003" Free Length: 1.875" ± .062"
o.	Spring, Loose Lever to Throttle Stop	383853	10.	ID: .516" - 0 + .016"
1.	Spring, Idle Cut-Off Lever	384141	11.	•
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Figure 4-61. Carburetor Specification Sheet, Parts List 391318-9

# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318

# HISTORY OF SPECIFICATIONS AND FLOW UNITS

	ENGINE MFGR.	: Continental	ENGINE MODEL: E-225-4-8 O-470-11-13
	ISSUE 1		
	Serial 1	7-25-50	First production release.
	Serial 2	8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory
•	Seriai 2	0-10-00	straining of fuel.
	ISSUE 2		
	Serial 3	8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164 assembly accelerating pump relief valve added to improve decelerating engine operating characteristics.
	Serial 4	10- 2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
	Serial 5 Serial 6	10- 2-50 12-14-50	Parts list record change only.  Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
	Serial 7	12-21-50	Parts list record change only.
	Serial 8	1-16-51	Parts list record change only.
	Serial 9	7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
	Serial 10	4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
	ISSUE 3		
	Serial 11	11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide better engine performance of idle.
	ISSUE 4		,
	Serial 12	8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening point. Carburetor now suitable for use on Continental 0-470-11 and -13 engines, Cessna L-19, and Beech T-34 aircraft.
	Serial 13	9-22-53	Decal - Rubber parts cure date 364563 replaced by 187406.
	Serial 14	10-19-53	Cap - Discharge Nozzle 385035 added.
	Serial 15	11-23-53	Parts list correction.
	ISSUE 5		
	Serial 16	2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to incorporate a taper seat plug at pressure connection instead of 1/8" pipe plug, which caused possible casting fracture if over torqued during installation.
	Serial 17	10- 1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standard- ize on one assembly.
	Serial 18	10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and vapor vent connections instead of brass 1/8" pipe plugs.
	Serial 19	12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968 changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pindog point.
	Serial 20	2- 8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
	Serial 21	6- 6-56	Discontinued scribing discharge diaphragm adjustment.
	Serial 22	7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
	Serial 23	7-26-56	Parts list correction.
	ISSUE 6		
	Serial 24	10- 1-56	Incorporation of vinyl coated air diaphragm for ozone protection.
	Serial 25	11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
	Serial 26	12-26-56	Added shipping date decalcomania.
	Serial 27	1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
	ISSUE 7	•	
-	Serial 28	1- 7-57	Changed discharge diaphragm cover, discharge diaphragm screw, idle speed adjustment, idle control rod adjustment, and throttle stop assemblies from 32 to 56 threads per inch to provide more precise adjustments.
	Serial 29	2-21-57	Main metering jet gasket changed from fiber to aluminum material.
	ISSUE 8 Serial 30	7-15-57	Changed to steel throttle shaft and Oilite throttle shaft bushings for increased service life. Added 80 mesh poppet valve strainer and changed to 100 mesh fuel inlet strainer.

Figure 4-62. Carburetor History Sheet, Parts List 391318-9 (Sheet 1 of 2)

# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318 (Cont'd.) HISTORY OF SPECIFICATIONS AND FLOW UNITS (Continued)

ISSUE 8 (Cont'd	.)				
Serial 31	8-19-57	)	Parts	list	correction.
Serial 32	9-13-57	. :	Parts	list	correction.

Serial 33 11-6-57 Incorporation of hard parts at wear points to increase service life.

Serial 34 1-7-58 Fuel inlet strainer changed to include wire support to prevent strainer from crushing.

Note: (1) Flow bench test limits for Issues 4 through 9 are identical.

(2) This specification and flow sheet corrects an error that existed in the burette limits of previously published limits for Issues 5,6 and 7.

Figure 4-62. Carburetor History Sheet, Parts List 391318-9 (Sheet 2 of 2)

Difference Data Sheet

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# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-10 Specification Sheet (figure 4-63) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
- (2) Strainer assembly (91) has a strainer support incorporated to prevent strainer from crushing.
- (3) Valve and seat assembly (95) uses harder parts to decrease wear.
- (4) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (5) Link assembly (106) has harder parts incorporated to decrease wear.

- (6) Plug (107) has different inside diameter dimensions.
- (7) Spring (108) is shorter.
- (8) Valve (109) is made of material to reduce wear.
- (9) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (10) Diaphragm (118) uses harder parts to decrease wear, and the diaphragm is impregnated with vinyl for greater resistance to ozone attack.

OVERHAUL PROCEDURES. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement, Lubrication, and Reassembly procedures are the same as outlined in Section II.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-63) and History Sheet (figure 4-64). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

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SETTING SPECIFICATIONS FOR INJECTION CARBURETOR MODEL PS-5C P/L 391318-10

ENGINE MODEL: E-225-4-8; O-470-11-13 ENGINE MFGR.: Continental DRAWING NUMBER: 391318 DATE ISSUED: 6-26-58

•	ENGINE MFGR.: Continental		DATE	ISSUED: 6-26-58
ITEM		PART	ITEM	
NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
1.	Main Body Assembly	366141	1.	1
2.	Jet, Main Metering	390188	2.	Size: 43
3.	Seat, Idle & Power Enrichment Valve	383886	3.	
4.	Diaphragm Assembly, Idle & Power Enrich- ment	204000	1 .	
5.	Seat, Manual Mixture Control Needle	364969	4.	
6.	Valve, Manual Mixture Control	384967 366298	5. 6.	
	Needle & Seat Assy., Poppet Valve	366462	7.	
•	Seat, Poppet Valve	366381	''	l
	Valve, Poppet	366138		Ì
.8.	Seat Assembly, Discharge Nozzle	366476	8.	
	Seat, Discharge Nozzle	383924		
	Valve, Discharge Nozzle	383474		
	Bleeder, Discharge Nozzle Air	383922	9.	
	Reducer, Vacuum	384606	10.	Size: 44
	Vapor Vent		11.	Size: No. 70 Drilled in 383483 Reg. Cover
	Venturi Throat Assembly	384599	12.	Throat Diameter: 1. 625" ± . 002"
13. 14.	Washer, Regulator Spring Adjustment	384819	13.	
	Valve Assembly, Pump Relief Automatic Mixture Control Assembly	364164	14.	N-4 4
	Strainer Assembly, Fuel	366362	15. 16.	Not used
	Lever, Throttle	390248	17.	
	20101, 211101110	030240	11.	
	•			
Ì	SPRING IDENTIFICATION			
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010"
_				ID: .296" ± .003"
2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031"
,	Samina Disabana Nasala	000545	_	OD: .4375" ± .010"
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"
4.	Spring, Manual Mixture Control	366147	4.	ID: .516" - 0 + .016"
	opring, manual mixture Control	300141	7.	Free Length: 2.344" ± .063"
5.	Spring, Pump Diaphragm	383517	5.	ID: .193" ± .005" Free Length: 2.500" ± .0625"
		"	٠. ا	ID: .516" ± .010"
6.	Spring, Poppet Valve	383518	6.	Free Length: .875" ± .010"
		1		OD: .188" ± .003"
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"
_				ID: .938" - 0 + .031"
8.	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"
٠ ا	Consider Valle 6 Variables 4 Variables			OD: .301" ± .003"
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"
10.	Spring, Loose Lever to Throttle Stop	303053	10	ID: .516" - 0 + .016"
10.	obs met moose meser to rurottie stob	38385 <b>3</b>	10.	
11.	Spring, Idle Cut-Off Lever	384141	11.	
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Figure 4-63. Carburetor Specification Sheet, Parts List 391318-10

## STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318

# HISTORY OF SPECIFICATIONS AND FLOW UNITS

	ENGINE MFG	R.: Continent	ENGINE MODEL: E-225-4-8 0-470-11-13
	ISSUE 1		
	Serial 1	7-25-50	First production release.
	Serial 2	8-10-50	Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory straining of fuel.
	recers 0		
	ISSUE 2 Serial 3	8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164 assembly accelerating pump relief valve added to improve decelerating engine
	Serial 4	10- 2-50	operating characteristics.  Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
	Serial 5	10- 2-50	Parts list record change only.
: -	Serial 6	12-14-50	Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
	Serial 7	12-21-50	Parts list record change only.
	Serial 8	1-16-51	Parts list record change only.
	Serial 9	7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
	Serial 10	4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
:	ISSUE 3		
	Serial 11	11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide better engine performance of idle.
	******** 4		
	ISSUE 4 Serial 12	8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening
	Serial 12	0-21-33	point. Carburetor now suitable for use on Continental O-470-11 and -13 engines,
	01-1-19	0 22 52	Cessna L-19, and Beech T-34 aircraft.  Decal - Rubber parts cure date 364563 replaced by 187406.
	Serial 13 Serial 14	9-22-53 10-19-53	Cap - Discharge Nozzle 385035 added.
	Serial 14	11-23-53	Parts list correction.
	ISSUE 5		
	Serial 16	2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to incorporate a taper seat plug at pressure connection instead of 1/8" pipe plug,
			which caused possible casting fracture if over torqued during installation.
	Serial 17	10- 1-54	Regulator Diaphragm Assembly P/N $383449$ changed to P/N $383974$ to standardize on one assembly.
	Serial 18	10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and vapor vent connections instead of brass 1/8" pipe plugs.
	Serial 19	12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968
			changed to $P/N$ 366291. Pin and lead ball removed and replaced by 366290 Pindog point.
	Serial 20	2- 8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
	Serial 21	6- 6-56	Discontinued scribing discharge diaphragm adjustment.
	Serial 22	7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
	Serial 23	7-26-56	Parts list correction.
	ISSUE 6		
	Serial 24	10- 1-56	Incorporation of vinyl coated air diaphragm for ozone protection.
	Serial 25	11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
	Serial 26	12-26-56	Added shipping date decalcomania.
	Serial 27	1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
	ISSUE 7		
	Serial 28	1- 7-57	Changed discharge diaphragm cover, discharge diaphragm screw, idle speed
			adjustment, idle control rod adjustment, and throttle stop assemblies from 32 to
	Serial 29	2-21-57	56 threads per inch to provide more precise adjustments.  Main metering jet gasket changed from fiber to aluminum material.
			•
	ISSUE 8		Channel to attack the state of
	Serial 30	7-15-57	Changed to steel throttle shaft and Oilite throttle shaft bushings for increased service life. Added 80 mesh poppet valve strainer and changed to 100 mesh fuel inlet strainer.

Figure 4-64. Carburetor History Sheet, Parts List 391318-10 (Sheet 1 of 2)

# STROMBERG INJECTION CARBURETOR MODEL PS-5C 391318 (Cont'd.) HISTORY OF SPECIFICATIONS AND FLOW UNITS (Continued)

		·
ISSUE 8 (Cont'd.	)	
Serial 31	8-19-57	Parts list correction.
Serial 32	9-13-57	Parts list correction.
ISSUE 9		
Serial 33	11- 6-57	Incorporation of hard parts at wear points to increase service life.
Serial 34	1- 7-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.
Serial 35	2-21-58	Regulator (outer) diaphragm part number changed to identify minor manu-
	:	facturing change.
ISSUE 10		
Serial 36	5-20-58	Incorporation of vinyl impregnated (red) regulator air diaphragm to provide greater resistance to ozone attack.

Note: (1) Flow bench test limits for Issues 4 through 10 are identical.

(2) This specification and flow sheet corrects an error that existed in the burette limits of previously published limits for Issues 5,6 and 7. This page intentionally left blank

# THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-11 Specification Sheet (figure 4-65) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) Cover assembly (53), screw assembly (52) and locking cup (3) have been changed to provide a limited field adjustment for the discharge nozzle. The new cover assembly has a pin installed in the bushing that acts as a stop when making an adjustment.
- (2) Lever assembly (83) uses a different bushing (84) that is hardened to decrease wear.
- (3) Strainer assembly (91) has a strainer support incorporated to prevent strainer from crushing.
- (4) Valve and seat assembly (95) uses harder parts to decrease wear.
- (5) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (6) Link assembly (106) has harder parts incorporated to decrease wear.

- (7) Plug (107) has different inside diameter dimensions.
- (8) Spring (108) is shorter.
- (9) Valve (109) is made of material to reduce wear.
- (10) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (11) Diaphragm (118) uses harder parts to decrease wear, and the diaphragm is impregnated with vinyl for greater resistance to ozone attack.

#### OVERHAUL PROCEDURES.

- a. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement and Lubrication procedures are the same as outlined in Section II.
- b. Reassembly. The limit pin shall be installed in one of the seven drilled holes in the adjusting screw bushing in such a position that the adjusting screw assembly may be rotated one-half turn in either direction.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-65) and History Sheet (figure 4-66). Flow limits are the same as for the carburetor in the basic technical manual. Refer to figures 3-5 and 3-6 for limits.

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section II of this technical manual.

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ENGINE MODEL: E-225-4-8; O-470-11-13 ENGINE MFGR.: Continental

DRAWING NUMBER: 391318 DATE ISSUED: 7-1-59

	ENGINE MFGR.: Continental		DATE	: ISSUED: 7-1-59	
ITEM NO.	DESCRIPTION	PART NUMBER	ITEM NO.	SIZE, SETTING OR REMARKS	
1.	Main Body Assembly	366141	1.		
2.	Jet, Main Metering	390188	2.	Size: #43	
3.	Seat, Idle & Power Enrichment Valve	383886	3.	1512e. #45	
4.	Diaphragm Assembly, Idle & Power	303000	3.	·	
4.	Enrichment	264060	4.	· '	
_		364969			
5.	Seat, Manual Mixture Control Needle	384967	5.		
6.	Valve, Manual Mixture Control	366298	6.		
7.	Needle & Seat Assy., Poppet Valve	366462	7.		
	Seat, Poppet Valve	366381			
•	Valve, Poppet	366138	1		
8.	Seat Assembly, Discharge Nozzle	366476	8.		•
	Seat, Discharge Nozzle	383924			
	Valve, Discharge Nozzle	383474			
9.	Bleeder, Discharge Nozzle Air	383922	9.	G. "44	
10.	Reducer, Vacuum	384606	10.	Size: #44	
11.			11.	Size: #70 Drilled in 383483 Reg. Cover	
12.	Venturi Throat Assembly	384599	12.	Throat Diameter: 1.625" ± .002"	
13.		384819	13.		
14.	Valve Assembly, Pump Relief	364164	14.		
15.	Automatic Mixture Control Assembly		15.	Not used.	
16.	Strainer Assembly, Fuel	366362	16.	,	
17.	Lever, Throttle	.390248	17.		
: '					
				•	
	SPRING IDENTIFICATION	000540			
1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010"	
	Custos Dischaus Nasdia	000514		ID: .296" ± .003"	
2.	Spring, Discharge Needle	383514	2,	Free Length: .5625" ± .031"	
ا ۾	Coming Dischange Namels	000515		OD: .4375" ± .010"	
3.	Spring, Discharge Nozzle	393515	3.	Free Length: 1.875" ± .062"	
,	Caming Manual Mintuna Control	266147	,	ID: .516" - 0 + .016"	
4.	Spring, Manual Mixture Control	366147	4.	Free Length: 2.344" ± .063"	
5.	Spring Dump Disphagem	202517	5.	ID: .193" ± .005"	
	Spring, Pump Diaphragm	383517	٥,	Free Length: 2.500" ± .0625"	
6.	Spring, Poppet Valve	383518		ID: .516" ± .010"	
۰. ا	Spring, Popper varve	303310	6.	Free Length: .875" ± .010" OD: .188" ± .003"	
7.	Spring, Regulator Diaphragm	383519	7.	Free Length: 1.937" ± .062"	
'' [	Spring, Regulator Diaphragm	303319	''	ID: .938" - 0 + .031"	
<b>8.</b> l	Spring, Idle Needle Valve	384629	8.	Free Length: .375" ± .015"	
٠. ا	bpring, fare necate varve	1 004028	۰. ا	OD: .301" ± .003"	
9.	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062"	
- 1	opining) rate at Emilion to the Empire again	""	٠. ا	ID: .516" - 0 + .016"	
10.	Spring, Loose Lever to Throttle Stop	383853	10.		
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11.	Spring, Idle Cut-Off Lever	384141	11.		
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Figure 4-65. Carburetor Specification Sheet, Parts List 391318-11

MODEL: PS-5C Injection Carburetor

ENGINE ME	GR.: Continent	ENGINE MODEL: E-225-4-8; O-470-11-13
ISSUE 1 Serial 1 Serial 2	7-25-50 8-10-50	First production release.  Gasoline strainer assembly 383520 replaced by 364858 to provide satisfactory straining of fuel.
ISSUE 2		s · · · · · · · · · · · · · · · · · · ·
Serial 3	8-30-50	Loose lever assembly 364378 replaced by 364974 to facilitate assembly 364164 assembly accelerating pump relief valve added to improve decelerating engine operating characteristics.
Serial 4	10- 2-50	Regulator cover screws 383513 replaced by 383531 and 384018, idle rod cover screws replaced by 384018 to insure more thread engagement of screw in body.
Serial 5 Serial 6	10- 2-50 12-14-50	Parts list record change only.  Vacuum channel plug P-6387 replaced by 394285 to eliminate unnecessary machine operation.
Serial 7	12-21-50	Parts list record change only.
Serial 8	1-16-51	Parts list record change only.
Serial 9	7-30-51	Regulator needle valve seat and plug gasket P-3260 replaced by P-5319 to facilitate assembly.
Serial 10	4-30-52	Gasket P-22851 replaced by 365533 to facilitate purchase.
ISSUE 3		
Serial 11	11-15-52	Idle and power enrichment valve assembly 384675 replaced by 364969 to provide
501141 11		better engine performance of idle.
ISSUE 4		
Serial 12	8-21-53	Airbox flow limit changed to accomplish a delayed enrichment valve opening point. Carburetor now suitable for use on Continental O-470-11 and -13 engines, Cessna L-19, and Beech T-34 aircraft.
Serial 13	9-22-53	Decal - Rubber parts cure date 364563 replaced by 187406.
Serial 14	10-19-53	Cap - Discharge Nozzle 385035 added.
Serial 15	11-23-53	Parts list correction.
ISSUE 5		
Serial 16	2-15-54	Spacer and bushing Assembly 383946 was changed to Assy. P/N 365796 to incorporate a taper seat plug at pressure connection instead of 1/8" pipe plug, which caused possible casting fracture if over torqued during installation.
Serial 17	10- 1-54	Regulator Diaphragm Assembly P/N 383449 changed to P/N 383974 to standardize on one assembly.
Serial 18	10-21-55	To conform to standard practice of using shipping plugs at fuel pressure and vapor vent connections instead of brass 1/8" pipe plugs.
Serial 19	12- 6-55	To conform to design improvement, Manual mixture control needle P/N 384968 changed to P/N 366291. Pin and lead ball removed and replaced by 366290 Pindog point.
Serial 20	2- 8-56	Vapor outlet connection pipe plug changed from brass to aluminum.
Serial 21	6- 6-56	Discontinued scribing discharge diaphragm adjustment.
Serial 22	7-26-56	Poppet valve seat changed to permit addition of poppet valve strainer if required.
Serial 23	7-26-56	Parts list correction.
TOOTTE 6	٠.	
ISSUE 6 Serial 24	10- 1-56	Incorporation of vinyl coated air diaphragm for ozone protection.
Serial 25	11-28-56	Incorporation of matched and leak tested discharge nozzle needle valve and seat.
Serial 26	12-26-56	Added shipping date decalcomania.
Serial 27	1- 7-57	Poppet valve seat and plug gaskets changed from fiber to aluminum.
. r		•
ISSUE 7 Serial 28	1- 7-57	Changed discharge diaphragm cover, discharge diaphragm screw, idle speed
Serial 20	1- 1-01	adjustment, idle control rod adjustment, and throttle stop assemblies from 32 to 56 threads per inch to provide more precise adjustments.
Serial 29	2-21-57	Main metering jet gasket changed from fiber to aluminum material
ISSUE 8		
Serial 30	7-15-57	Changed to steel throttle shaft and Oilite throttle shaft bushings for increased service life. Added 80 mesh poppet valve strainer and changed to 100 mesh fuel
		inlet strainer.

Figure 4-66. Carburetor History Sheet, Parts List 391318-11 (Sheet 1 of 2)

MODEL: PS-5C Injection Carburetor	HISTORY OF CHANGES (Cont'd,) P/L 391318
ISSUE 8	•
Serial 31 8-19-57	Parts list correction.
Serial 32 9-13-57	Parts list correction.
ISSUE 9	
Serial 33 11- 6-57	Incorporation of hard parts at wear points to increase service life.
Serial 34 1- 7-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.
Serial 35 2-21-58	Regulator (outer) diaphragm part number changed to identify minor manufacturing change.
<u>ISSUE 10</u> Serial 36 5-20-58	Incorporation of vinyl impregnated (red) regulator air diaphragm to provide greater resistance to ozone attack.
ISSUE 11	
Serial 37 12- 4-58	Incorporation of discharge nozzle adjustment limiter to provide a safe field adjustment for the off idle range.
Serial 38 7- 1-59	Parts List correction.
	Note: Flow bench test limits for Issues 4 through 11 are identical.

Figure 4-66. Carburetor History Sheet, Parts List 391318-11 (Sheet 2 of 2)

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THE INSTRUCTIONS CONTAINED IN PRECEDING SECTIONS OF THIS TECHNICAL MANUAL APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET.

INTRODUCTION. Same as for Section I of this technical manual.

SPECIAL TOOLS. The special tools used are the same as listed in Section II of this technical manual.

GENERAL INSTRUCTIONS. Same as outlined in Section II of this technical manual. Refer to 391318-11 Specification Sheet (figure 4-67) for information on metering variables for this issue.

### COMPONENT DIFFERENCES.

- a. General. Refer to figure 2-9.
- (1) Cover assembly (53), screw assembly (52) and locking cup (3) have been changed to provide a limited field adjustment for the discharge nozzle. The new cover assembly has a pin installed in the bushing that acts as a stop when making an adjustment.
- (2) Lever assembly (83) has a different contour and it has a hardened bushing (84) to reduce wear.
- (3) Strainer assembly (91) has a strainer support incorporated to prevent strainer from crushing.
- (4) Valve and seat assembly (95) uses harder parts to reduce wear.
- (5) Diaphragm assembly (103) has harder parts incorporated to decrease wear.
- (6) Link assembly (106) has harder parts incorporated to decrease wear.

- (7) Plug (107) has different inside diameter dimensions.
  - (8) Spring (108) is shorter.
  - (9) Valve (109) is made of material to reduce wear.
- (10) Spacer (113) has a harder bushing (114) incorporated to decrease wear.
- (11) Diaphragm (118) uses harder parts to decrease wear and the diaphragm is impregnated with vinyl for greater resistance to ozone attack.

### OVERHAUL PROCEDURES.

- a. Disassembly, Cleaning, Inspection, Testing, Repair or Replacement and Lubrication procedures are the same as outlined in Section II.
- b. Reassembly. The limit pin shall be installed in one of the seven drilled holes in the adjusting screw bushing in such a position that the adjusting screw assembly may be rotated one-half turn in either direction.

TEST PROCEDURE. Same as outlined in Section III of this technical manual except use Specification Sheet (figure 4-67), History Sheet (figure 4-70) and Flow Limit Sheets (figures 4-68 and 4-69).

PREPARATION FOR STORAGE, PACKAGING AND RECONDITIONING AFTER STORAGE. Same as outlined in Section III of this technical manual.

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SETTING SPECIFICATIONS FOR INJECTION CARBURETOR PS-5C

391629-7

ENGINE MODEL: 0-470-15
ENGINE MFGR.: Continental

DRAWING NUMBER: 391629 DATE ISSUED: 1-29-59

		ENGINE MFGR.: Continental		DATE	ISSUED: 1-29-59
'	ITEM		PART	ITEM	
	NO.	DESCRIPTION	NUMBER	NO.	SIZE, SETTING OR REMARKS
	1.		366141	1.	g: 40
	2.	Jet, Main Metering	390188 383886	2.	Size: 43
	3.			3.	• .
	4.	Diaphragm Assembly, Idle & Power Enrichment	364969	4.	
	5.	Seat, Manual Mixture Control	384967	5.	
		Valve, Manual Mixture Control Needle	366298	6.	
		Needle & Seat Assy., Poppet Valve	366462	7.	<u>'</u>
		Seat, Poppet Valve	366381		
		Valve, Poppet	366138	·	
	· 8.	Seat Assembly, Discharge Nozzle	366476	8.	·
	- '	Seat, Discharge Nozzle	383924		
		Valve, Discharge Nozzle	383474		
٠.		Bleeder, Discharge Nozzle Air	383922	9.	L
		Reducer, Vacuum	384606	10.	Size: 44
1	11.	Vapor Vent	ł	11.	Size: No. 70 drilled in 383483
٠.	19	Venturi Throat Assembly	384599	12.	Reg. Dia. Body Throat Diameter: 1-5/8"
	13.	Washer, Regulator Spring Adjustment	384819	13.	Throat Diameter. 1-3/6
Ì		Valve Assembly, Pump Relief	364164	14.	
٠.		Automatic Mixture Control Assembly		15.	Not used.
		Strainer Assembly, Fuel	366362	16.	
٠.,	17.	Lever, Throttle	390248	17.	·
:	18.	Lever Assy., Manual Mixture Control	366487	18.	
			Ì		
			ļ		
		SPRING IDENTIFICATION		1 . 1	·
	1.	Spring, Idle Cut-Off Plunger	383512	1.	Free Length: .8125" ± .010" ID
٠.	:				.296" ± .003"
	2.	Spring, Discharge Needle	383514	2.	Free Length: .5625" ± .031" OD
	_		000515		.4375" ± .010"
	3.	Spring, Discharge Nozzle	383515	3.	Free Length: 1.875" ± .062" ID .516" -0 +.016"
	4.	Spring, Manual Mixture Control	366147	4.	Free Length: 2.344" ± .063" ID
	ч.	Spring, manuar mixture control	00011.		.193" ± .005"
	5.	Spring, Pump Diaphragm	383517	5.	Free Length: 2.500" ± .0625" ID
					. 516" ± .010"
	6.	Spring, Poppet Valve	383518	6.	Free Length: .875" ± .010" OD
				_	.188" ± .003"
	7.	Spring, Regulator	383519	7.	Free Length: 1.937" ± .062" ID
	à	Coming Idle Needle Velve	384629		. 938" -0 + .031" Ence Length: 275" ( 015" OD
	8.	Spring, Idle Needle Valve	364029	8.	Free Length: .375" ± .015" OD .301" ± .003"
	. 9	Spring, Idle & Enrichment Valve Diaphragm	383515	9.	Free Length: 1.875" ± .062" ID
	٥.	opring, rate & Din tenment 7 atte Diapin again	"		.516" -0 +.016"
	10.	Spring, Losse Lever to Throttle Stop	383853	10.	
		Spring, Idle Cut-Off Lever	384141	11.	i ·
			ì		
			ı	Į.	

Figure 4-67. Carburetor Specification Sheet, Parts List 391629-7

INJECTION CARBURETOR FLOW BENCH TEST	Fuel Inlet Pressure: 10 psi Nozzle Pressure: Limits Based on . 692 ± . 002 Specific Gravity at 75 ± 5	HEPTANE Flow Limits for Issues 1 through 7 are identical.	it No. 1 2 3 4 5 8 7 8 9 10	Suction Suction Water 0.7 2.2 6.3 12.2 12.2 26.4 28.6 34.3 26.4	r. 200 400 600 800 1150 1200 1300		WO WO 1/2 1/2 1/2 1/2 WO WO 1	e 150 200 250 300 300 500 500 500	33.0 30.0 27.4 20.6 31.6 27.2 25.4	MAX. 29.3	Obs.	Min. 27.9 No. 31.5 43.0 56.5 71.9 81.7 95.0 103.8	<u>.L</u>	Min. 11:55	Max. 12.45 39.4	Obs.	Multi-Point Automatic Mixture Control Calibration Limits:	Flow Method:	Date Issued:	CAUTION Low (Rich) Limit: High (Lean) Limit:	These limits are based on flow bench checking the points, vapor vent is closed,	It is installed on the engine in the alreraft.  2. At check point 7, position enrichment valve actuating screw to contact idle and enrichment valve stem with throttle valve set at 28° from the wide open position. Use T-25941.	
•	Engine Model: O-470-15 Engine Mgr.: Continental Engine Mgr. Setting:		Test Point No.	Metering Suction Inches of Water 0	.:	Mixture Control	E	e Volume	Min.	_	Ops.	+	Obs.	┞		Inches of Obs.					These limits are b	it is installed on the PS-5C carburetor checked with the d	

Figure 4-69. Carburetor Flow Bench Test Sheet (Heptane), Parts List 391629-7

# STROMBERG INJECTION CARBURETOR MODEL PS-5C

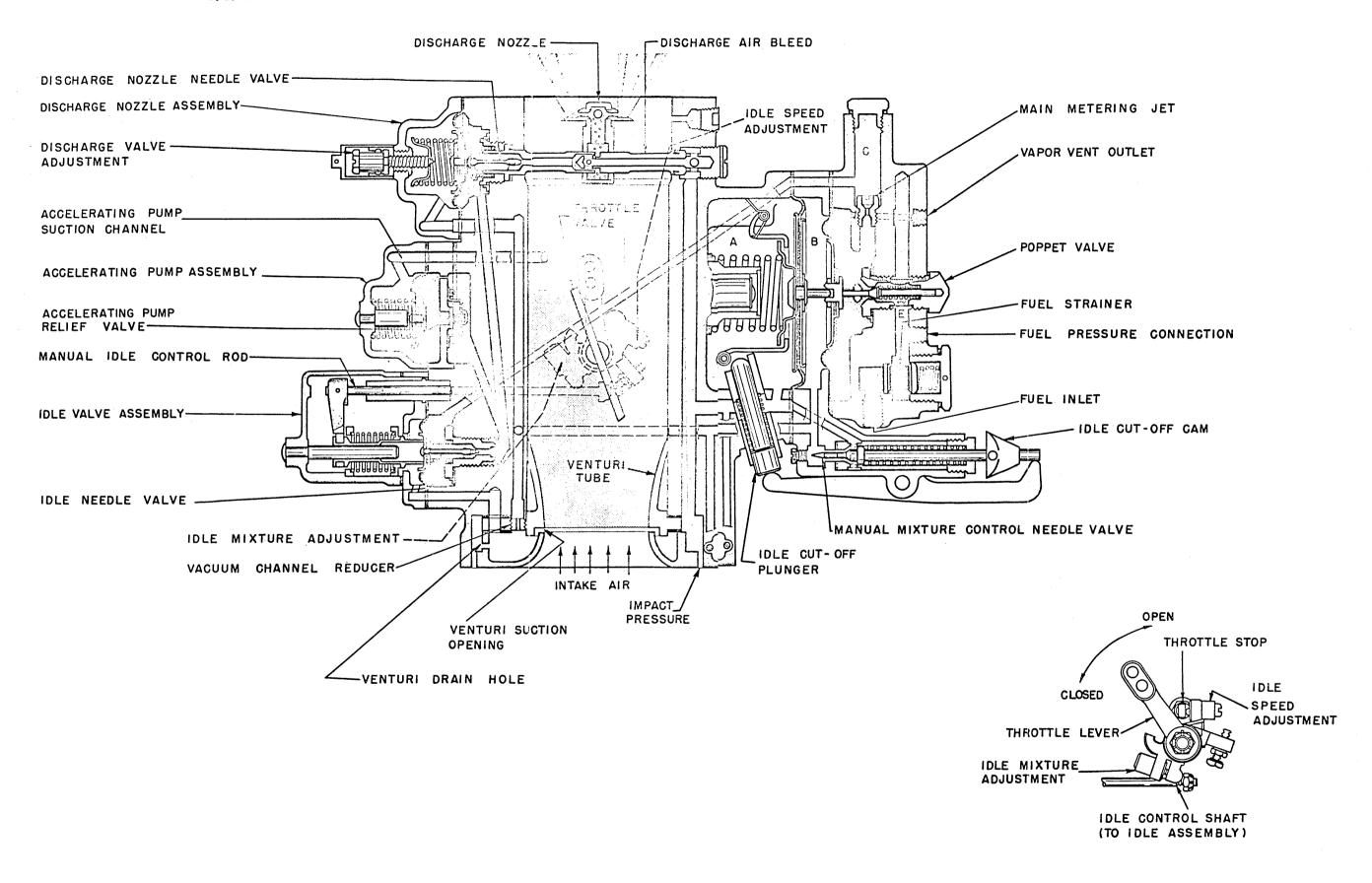
### HISTORY OF SPECIFICATIONS AND FLOW UNITS

### ENGINE MFGR .: Continental

ENGINE MODEL: 0-470-15

PS-5C carburetor, P/L 391629 is identical to P/L 391318 except that P/L 391629 incorporates a special Manual Mixture Control Lever to conform to airplane installation requirements.

ISSUE 1		en en en en en en en en en en en en en e
Serial 2	1-18-56	Released to production.
Serial 3	2-15-56	Installed 1/8" pipe plugs at vapor vent and fuel pressure connections in place of shipping plugs at request of the engine manufacturer.
Serial 4	2-27-56	To incorporate an improved design manual mixture control needle assembly.  The idle cut-off cam is attached to the new needle using a 366290 pin-dog point,
		instead of the 383504 screw and lead ball configuration.
Serial 5	4- 2-56	Parts list correction.
Serial 6	6- 5-56	Discontinued scribing the discharge diaphragm adjusting screw.
Serial 7	7-31-56	Poppet valve seat changed to provide a seat that will accommodate a poppet screen if required.
Serial 8	10- 1-56	Elimination of diffusion tube attaching rivets which are no longer required.
ISSUE 2		
Serial 9	10- 1-56	Incorporation of vinyl coated air diaphragm 366408 to increase resistance to ozone deterioration.
ISSUE 3		•
Serial 10	10- 1-56	Discharge diaphragm, idle speed, and idle control rod adjusting screws changed from 32 to 56 threads per inch to provide more precise adjustments.
Serial 11	11-27-56	Incorporation of matched discharge nozzle seat and discharge needle valve assembly to prevent fuel leakage.
Serial 12	12-26-56	Addition of shipping date decalcomania.
Serial 13	1- 7-57	Regulator needle valve seat and plug gaskets change from fiber to aluminum material.
Serial 14	2-20-57	Main metering jet plug gasket changed from fiber to aluminum material.
ISSUE 4		
Serial 15	6-24-57	Changed to steel throttle shaft and Oilite throttle shaft bushings. Changed to a 200 mesh inlet fuel strainer and added an 80 mesh poppet valve strainer.
Serial 16	7-11-57	Parts list correction.
Serial 17	1- 8-58	Fuel inlet strainer changed to include wire support to prevent strainer from crushing.
ISSUE 5		
Serial 18	3-27-58	Incorporation of hard parts at wear points to increase service life.
Serial 19	3-27-58	Regulator (outer) diaphragm assembly changed to part number 366876 to incorporate minor manufacturing change.
ISSUE 6		
Serial 20	5-23-58	Incorporation of vinyl impregnated (red) inner regulator diaphragm.
Serial 21	8-21-58	Main body assembly changed to standardize on part number.
ISSUE 7 Serial 22	1-29-59	Incorporation of discharge nozzle adjustment limiter to provide a safe field adjustment for the off idle range.
		NOTE: Flow bench test limits for Issues 1 through 7 are identical.



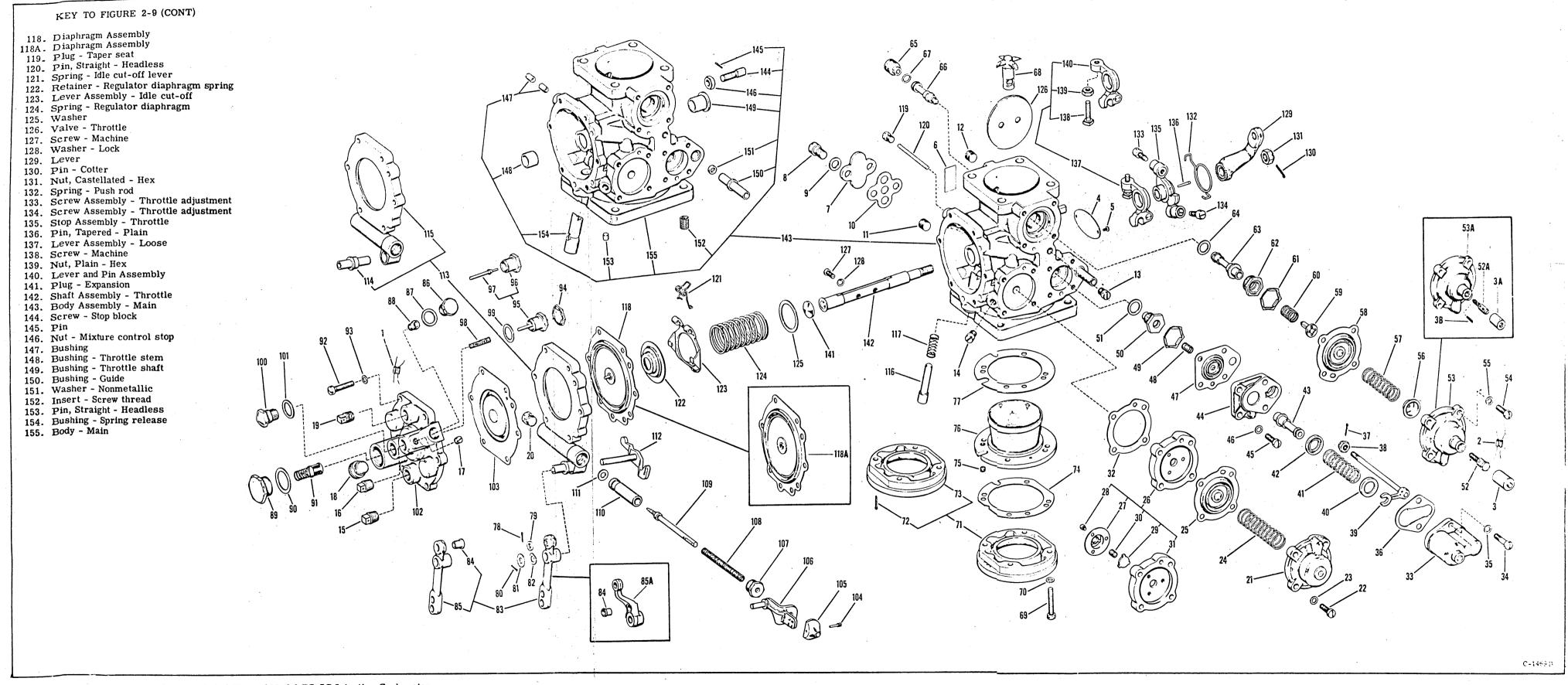


Figure 2-9. Exploded View of Model PS-5C Injection Carburetor

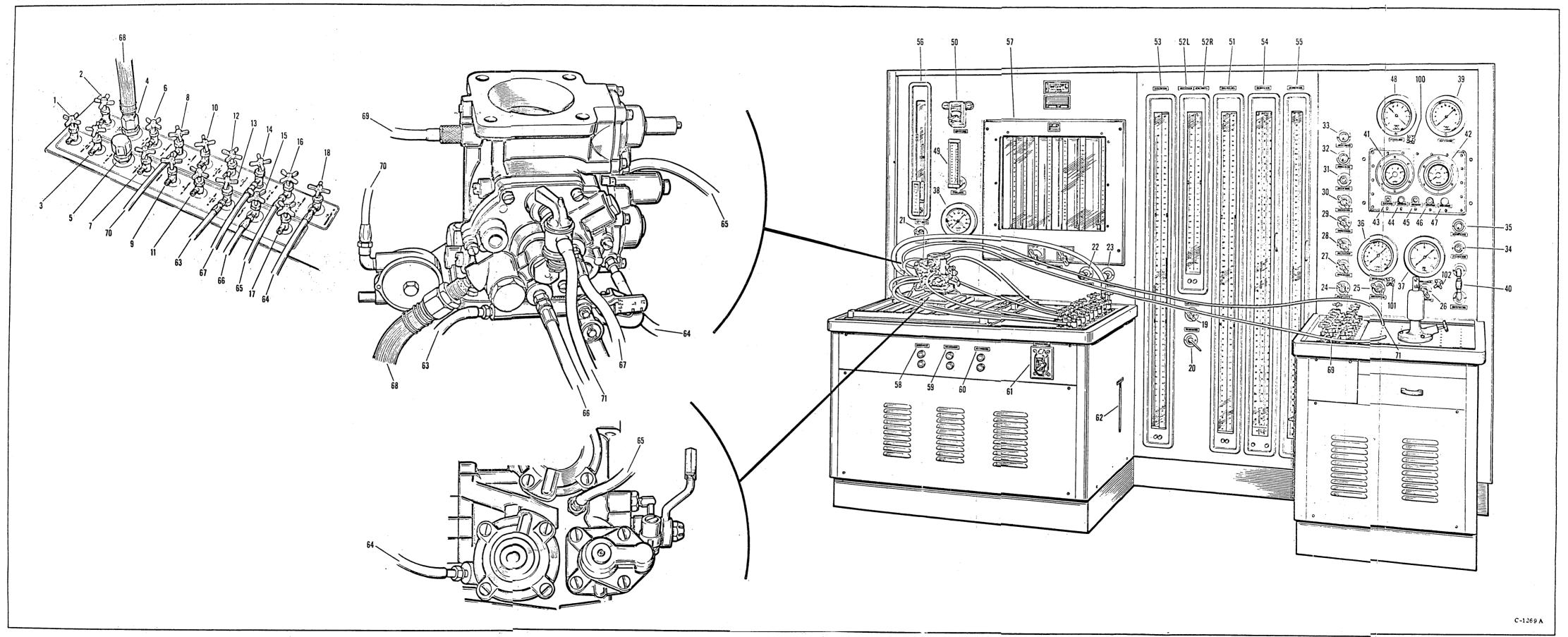


Figure 3-2. Flow Bench Hookup for Model PS-5C Injection Carburetor

# KEY TO FIGURE 4-1 (CONT) 106. Pin - Dog point 107. Cam - Fuel cut-off 108. Link Assembly - Mixture control 109. Plug - Mixture control needle valve 110. Spring - Altitude control needle 111. Valve - Mixture control 112. Seat - Mixture control 113. Washer - Nonmetallic

114. Lever Assembly - Fuel cut-off 115. Regulator Assembly - Spacer 116. Bushing - Regulator spacer 117. Spacer - Regulator
118. Plunger - Spring release
119. Spring, Plunger - Idle
cut-off 120. Diaphragm Assembly

121. Plug - Taper seat 122. Pin, Straight - Headless 123. Spring - Idle cut-off lever 124. Retainer - Regulator diaphragm spring 125. Lever Assembly - Idle cut-off

126. Spring - Regulator diaphragm 127. Washer 128. Valve - Throttle

129. Screw - Machine 130. Washer - Lock 131. Lever 132. Pin - Cotter

133. Nut, Castellated - Hex

134. Spring - Push rod 135. Screw Assembly - Throttle adjustment

136. Screw Assembly - Throttle adjustment

137. Stop Assembly - Throttle 138. Pin, Tapered - Plain 139. Lever Assembly - Loose

140. Screw - Machine 141. Nut, Plain - Hex 142. Lever and Pin Assembly 143. Plug - Expansion

144. Shaft Assembly - Throttle 145. Body Assembly - Main

146. Screw - Stop block 147. Pin 148. Nut - Mixture control stop

149. Bushing 150. Bushing - Throttle stem 151. Bushing - Throttle shaft

152. Bushing - Guide153. Washer - Nonmetallic

154. Bushing - Spring release 155. Pin, Straight - Headless

156. Rivet - Solid 157. Insert - Screw thread

158. Body - Main

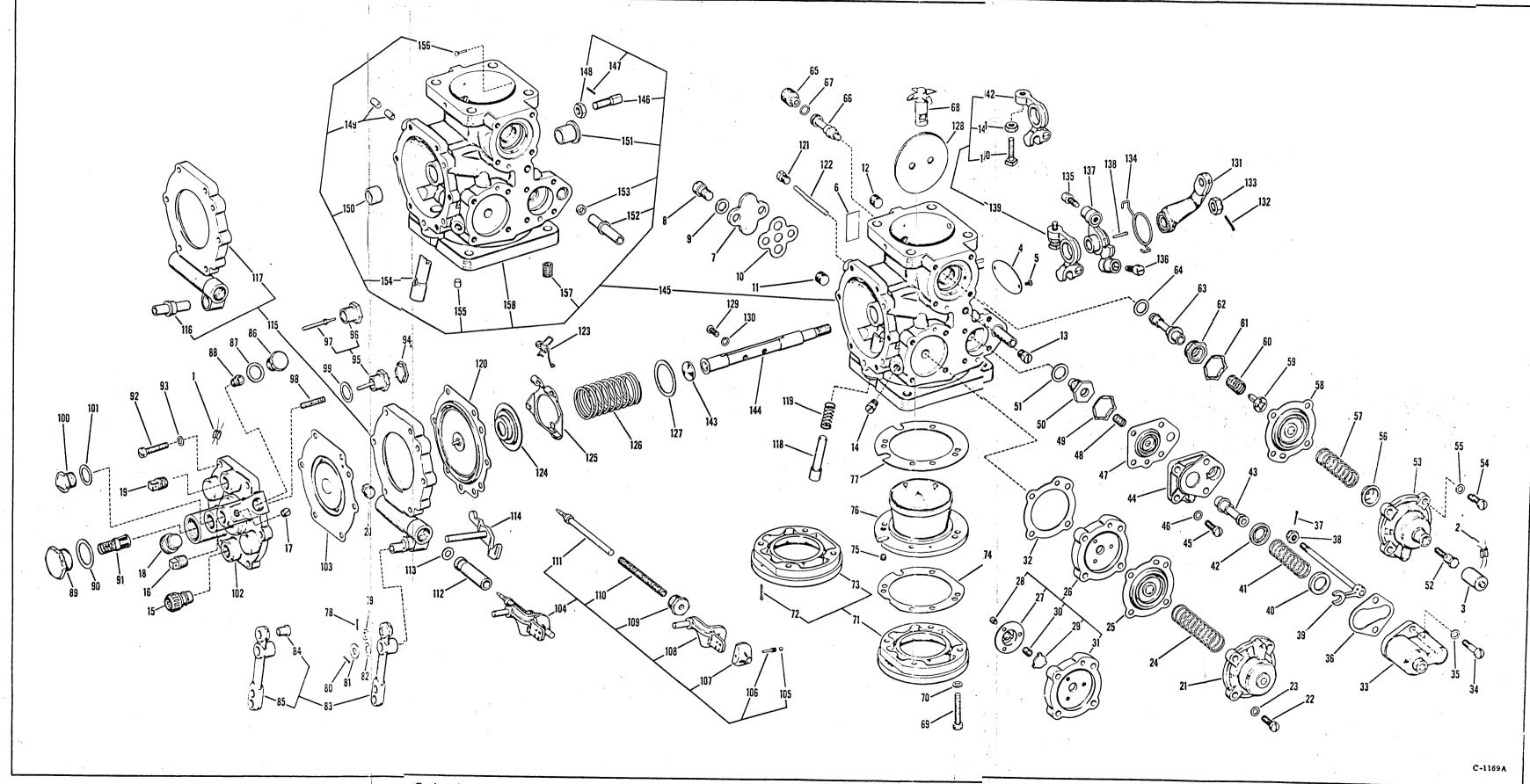


Figure 4-1. Exploded View of Model PS-5C Injection Carburetor

# KEY TO FIGURE 4-6 (CONT)

- 124. Retainer Regulator
- diaphragm spring 125. Lever Assembly Idle cut-off
- 126. Spring Regulator diaphragm
- 127. Washer 128. Valve Throttle 129. Screw Machine
- 130. Washer Lock
- 131. Lever

- 132. Pin Cotter 133. Nut, Castellated Hex 134. Spring Push rod 135. Screw Assembly Throttle Adjustment
- 136. Screw Assembly Throttle adjustment
  137. Stop Assembly - Throttle
  138. Pin, Tapered - Plain
  139. Lever Assembly - Loose

- 139. Lever Assembly Loose
  140. Screw Machine
  141. Nut, Plain Hex
  142. Lever and Pin Assembly
  143. Plug Expansion
  144. Shaft Assembly Throttle
  145. Body Assembly Main
  146. Screw Stop block

- 146. Screw Stop block 147. Pin 148. Nut Mixture control stop 149. Bushing 150. Bushing Throttle stem 151. Bushing Throttle shaft

- 151. Bushing Throttle shaft
  152. Bushing Guide
  153. Washer Nonmetallic
  154. Bushing Spring release
  155. Pin, Straight Headless
  156. Rivet Solid
  157. Insert Screw thread
  158. Body Main

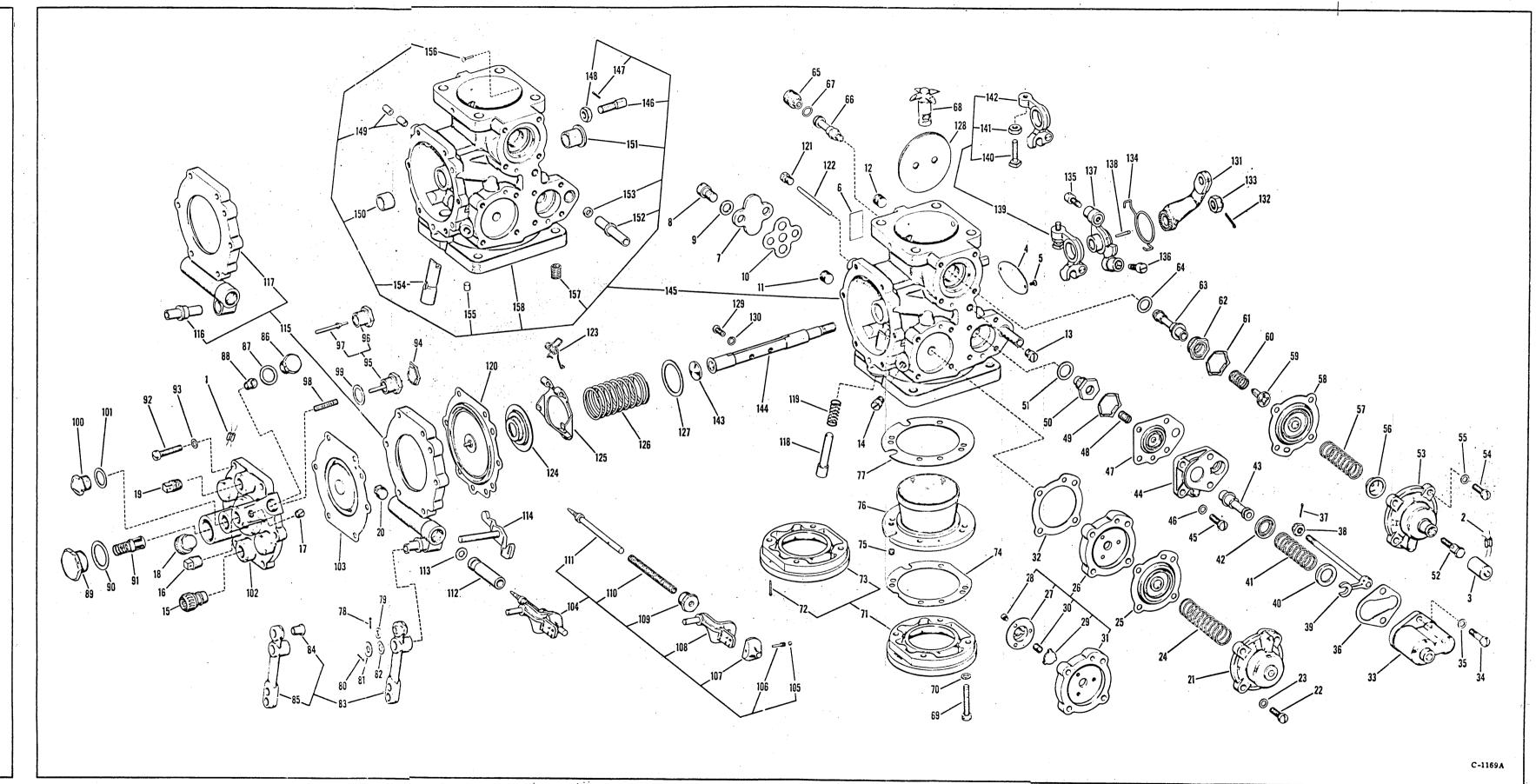


Figure 4-6. Exploded View of Model PS-5C Injection Carburetor

# KEY TO FIGURE 4-21 (CONT) 123. Spring - Idle cut-off lever 124. Retainer - Regulator

diaphragm spring
125. Lever Assembly - Idle cut-off
126. Spring - Regulator diaphragm
127. Washer

128. Valve - Throttle 129. Screw - Machine

130. Washer - Lock 131. Lever

132. Pin - Cotter 133. Nut, Castellated - Hex 134. Spring - Push rod

135. Screw Assembly -Throttle adjustment

136. Screw Assembly -

Throttle adjustment
137. Stop Assembly - Throttle
138. Pin, Tapered - Plain
139. Lever Assembly - Loose

139. Lever Assembly - Loose
140. Screw - Machine
141. Nut, Plain - Hex
142. Lever and Pin Assembly
143. Plug - Expansion
144. Shaft Assembly - Throttle
145. Body Assembly - Main
146. Screw - Stop block
147. Pin
148. Nut - Mixture control stop
149. Bushing
150. Bushing - Throttle stem
151. Bushing - Throttle shaft
152. Bushing - Guide
153. Washer - Nonmetallic
154. Bushing - Spring release
155. Pin, Straight - Headless
156. Rivet - Solid
157. Insert - Screw thread

157. Insert - Screw thread 158. Body - Main

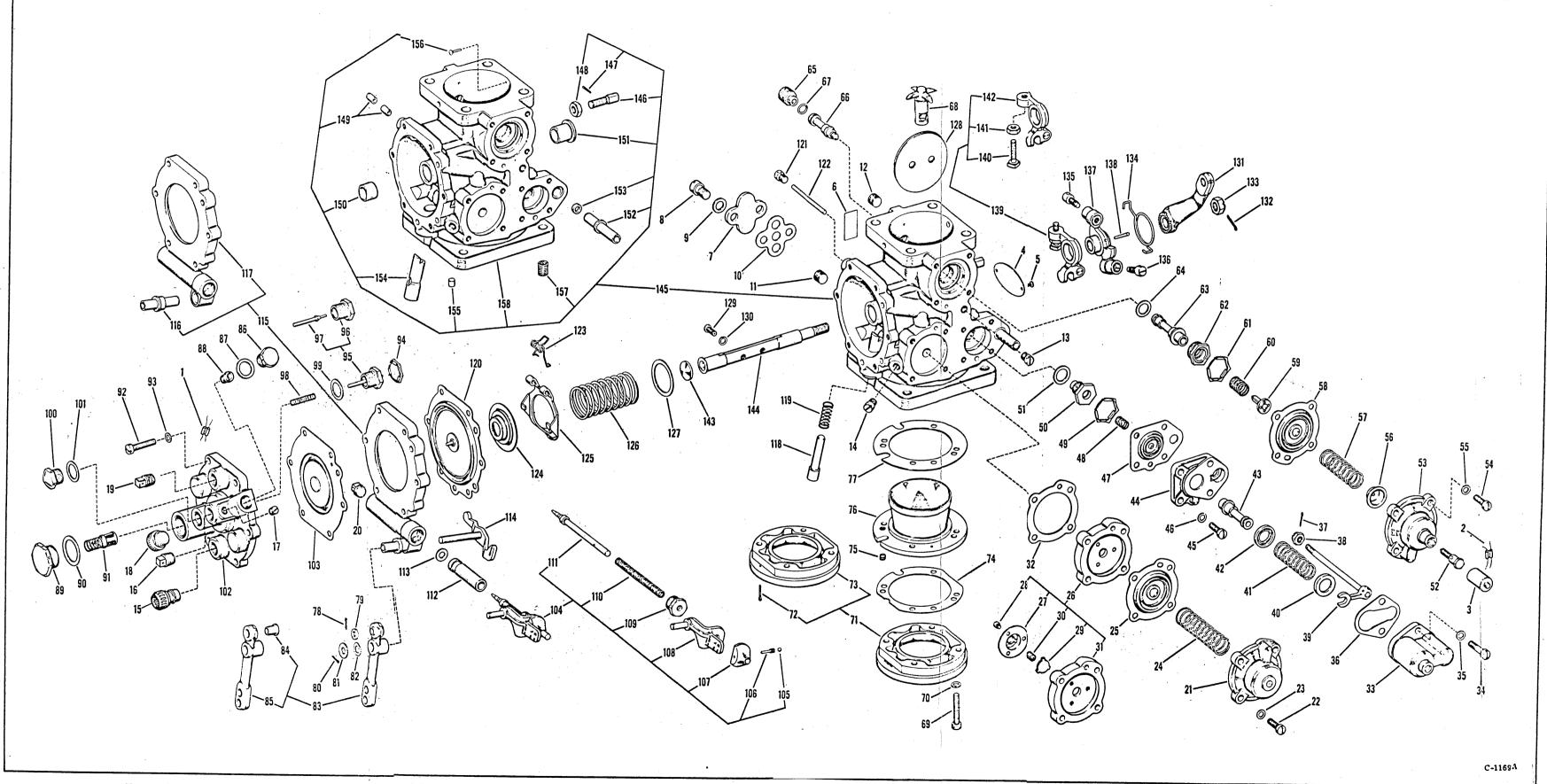


Figure 4-21. Exploded View of Model PS-5C Injection Carburetor