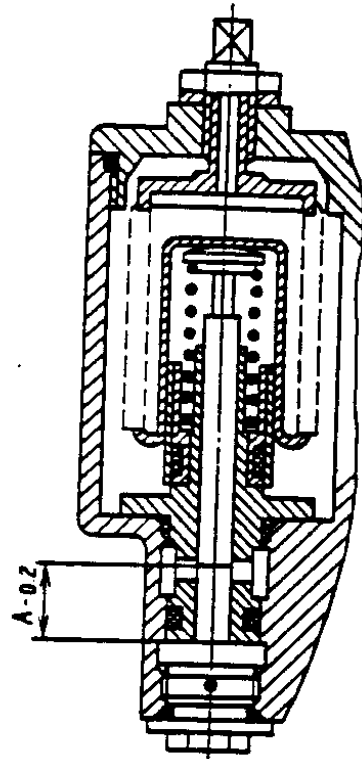
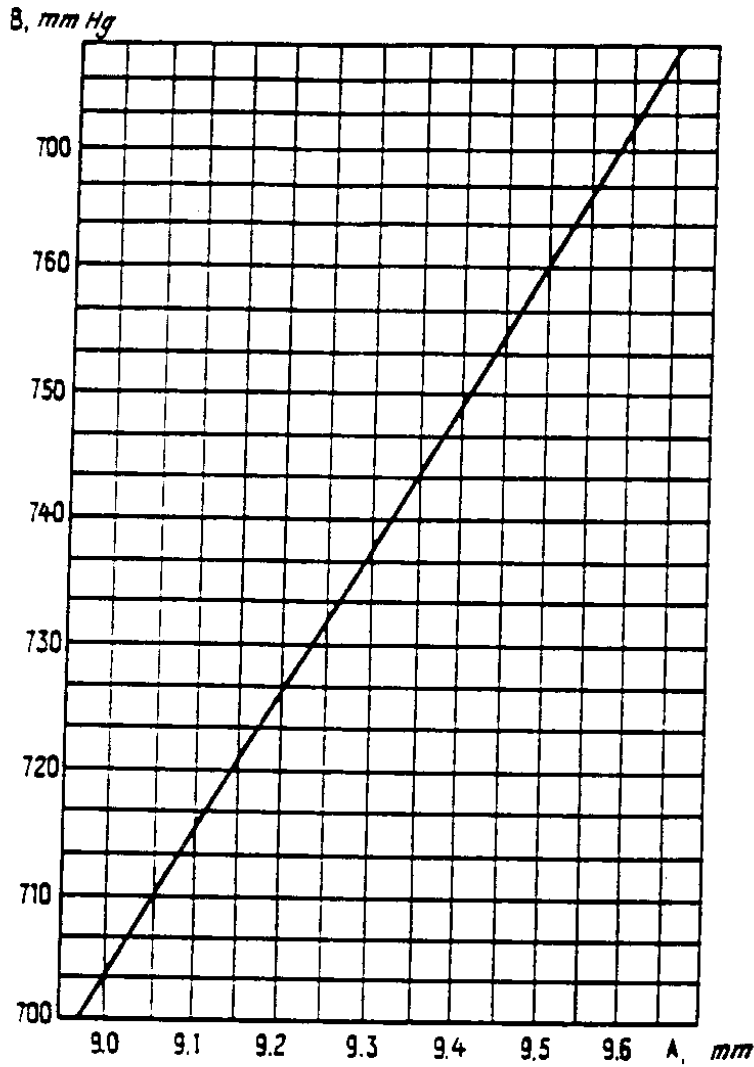


1. Altitude Control Needle Adjustment Screw
2. Suction Jet Plug
3. Plug for Measuring Initial Position of Altitude Control Needle
4. Breathing Plug
5. Lower Drain Plug
6. Plug for Measuring Air Pressure in Regulator Air Space
7. Throttle Control Lever
8. Throttle Idle Stop Screw
9. Air Filter
10. Acceleration Pump Jet Plug

Carburetor AK-14P (Left Side View)

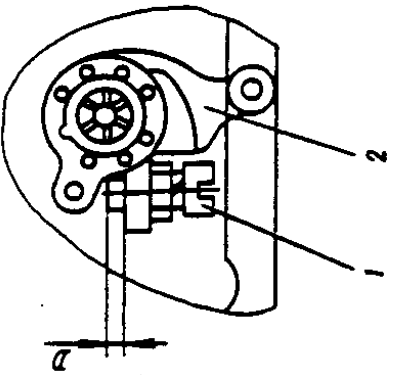
Figure 202



Carburetor Altitude Control Needle Position  
Versus Barometric Pressure (Barometric Graph)

Figure 203

TO M-14P MS	TASK CARD No. 204	PAGE(S) 213, 214
MS ITEM	PROCEDURE: Idle Adjustment	
OPERATIONS AND TECHNICAL REQUIREMENTS		
<ol style="list-style-type: none"> <li>1. Start and warm up the engine (Ref. 072.00.00, Task Card No. 201).</li> <li>2. Adjust carburetor inlet fuel pressure to be 0.2 to 0.5 kgf/cm<sup>2</sup> at main ratings and at least 0.15 kgf/cm<sup>2</sup> at the idle rating (Ref. 073.10.01, Task Card No. 204).</li> <li>3. Unlock and undo the cap of idle needle (3) (Ref. Fig. 201).</li> <li>4. Remove the cap and sealing gasket.</li> <li>5. Turn the idle needle to either side to set idle speed of up to 26 %. It is allowed to adjust idle speed by screw (8) (Ref. Fig. 202) of the throttle stop at the idle rating set by the Supplier to size D (Ref. Fig. 204) (the size is entered in the carburetor Certificate) within <math>\pm 1.5</math> turns; size D is changed within <math>\pm 1.5</math> mm.</li> <li>6. Reinstall the sealing gasket and idle needle cap.</li> <li>7. Screw on and lock the cap.</li> </ol> <p><b>CAUTION: ADJUST IDLE SPEED FINALLY AFTER ADJUSTING MAIN RATINGS.</b></p>		
	CORRECTIVE ACTIONS	CHECKED BY

OPERATIONS AND TECHNICAL REQUIREMENTS	CORRECTIVE ACTIONS	CHECKED BY
 <p data-bbox="781 1281 846 1717">                     1. Throttle Idle Stop Screw                      2. Carburetor Throttle Control lever                 </p> <p data-bbox="906 1265 987 1556">                     Determining size D                      Figure 204                 </p>		
TEST EQUIPMENT	TOOLS AND FIXTURES	MATERIALS
	Pliers, flat-nosed 150 Screwdriver 700345 A150x0.5	Wire, locking KO-0.8

10 M-14P MS	TASK CARD No. 205		PAGE(S) 215, 216
MS. ITEM	PROCEDURE: Adjustment at Main Ratings		
OPERATIONS AND TECHNICAL REQUIREMENTS			
<p>1. Check engine operation at all ratings on the initial adjustment starting from the take-off rating (Ref. 072.00.00, Task Card No. 202).</p> <p><u>NOTE:</u> If engine operates poorly at separate ratings, adjust the carburetor.</p> <p>2. Adjust fuel consumption at take-off and nominal ratings using the following procedure:</p> <p>(1) Unlock and undo suction jet plug (2) (Ref. Fig. 202).</p> <p>(2) Select and replace the suction jet.</p> <p><u>NOTE:</u> It is allowed to install jet, dia. 1.3 to 2.0 mm. Increasing the jet diameter leans out the mixture, decreasing it, enriches the mixture. The jet diameter change of 0.05 mm changes specific fuel consumption at take-off rating for 2 to 5 g/hp.h.</p> <p>(3) Install and lock suction jet plug (2).</p> <p>3. Adjust the engine in cruise rating II using the following procedure:</p> <p>(1) Unlock metering needle adjustment screw (4) (Ref. Fig. 201).</p> <p>(2) Turn adjustment screw (4) to the required side to obtain the desired fuel consumption.</p> <p><u>NOTES:</u> 1. Adjust the carburetor on the shutdown engine. Rotating the shaft clockwise enriches the mixture and vice versa.</p> <p>2. Turn the metering needle screw up to the limit stops in either direction from the initial adjustment setting.</p> <p>3. The adjustment range to stop is eight clicks. One click of the metering needle adjustment shaft changes fuel consumption</p>	CORRECTIVE ACTIONS	CHECKED BY	

OPERATIONS AND TECHNICAL REQUIREMENTS	CORRECTIVE ACTIONS	CHECKED BY
<p>(3) Lock adjustment screw (4).</p> <p>4. Start the engine and check engine operation at cruise rating I and nominal rating II (Ref. 072.00.00, Task Card No. 202) since the change in the metering needle position affects fuel consumption.</p> <p>5. Perform additional adjustment with the metering needle screw in case of deviations at cruise rating I and nominal rating II.</p> <p><u>CAUTION:</u> NEVER TURN THE METERING NEEDLE ADJUSTMENT SCREW BEYOND THE STOPS, OTHERWISE PREVIOUSLY ADJUSTED FUEL CONSUMPTIONS FOR TAKE-OFF, NOMINAL RATINGS I AND II WOULD BE ABRUPTLY CHANGED AND CARBURETOR INITIAL SETTING COULD NOT BE ADJUSTED.</p>		
TEST EQUIPMENT	TOOLS AND FIRTURES	MATERIALS
	<p>Wrench 19x22 700880-7</p> <p>Pliers, flat-nosed 150</p> <p>Screwdriver 700346 A200x1</p> <p>Wrench 14x17 14-232-03</p>	<p>Wire, locking KO-0.8</p>

<p>TO M-14P MS</p>	<p>TASK CARD No. 206</p>		<p>PAGE(S) 217, 218</p>
<p>MS ITEM</p>	<p>PROCEDURE: Adjustment of Altitude Control</p>		
<p>OPERATIONS AND TECHNICAL REQUIREMENTS</p>	<p>CORRECTIVE ACTIONS</p>	<p>CHECKED BY</p>	
<p>1. Measure the altitude control needle position, using the following procedure.</p> <p>(1) Unlock and drive out plug (3) (Ref. Fig. 202) from the carburetor.</p> <p>(2) Using a special template or depth gauge, measure the actual initial position of the needle (Ref. Fig. 203).</p> <p>(3) Determine the required initial position of the altitude control needle against the barometric graph, size A.</p> <p>2. Adjust the altitude control if measured size A is other than size A required by the barometric graph using the following procedure:</p> <p>(1) Unlock and undo the lock nut of screw (1) (Ref. Fig. 202).</p> <p>(2) Turn screw (1) to the required side.</p> <p>NOTE: To decrease aneroid capsule size A, drive in the screw, to increase it, drive the screw out. One revolution of the screw corresponds to 1 mm.</p> <p>(3) Tighten the lock nut of screw (1).</p> <p>(4) Lock the lock nut with wire.</p> <p>3. Screw on plug (3) and lock it.</p> <p>4. Make an entry on the operations performed in the carburetor Certificate.</p> <p>NOTES: 1. Check the altitude control needle position for correspondence to the barometric graph when installing a new carburetor and after every 100 h of engine operation.</p> <p>2. Carry out the check on the shutdown engine.</p>			

TO M-14P MS	TASK CARD No. 207		PAGE(S) 219
MS. ITEM	PROCEDURE: Adjustment of Acceleration Pump		
OPERATIONS AND TECHNICAL REQUIREMENTS			
		CORRECTIVE ACTIONS	CHECKED BY
1. Unlock and drive out plug (10) (Ref. Fig. 202).  2. Drive out the acceleration pump fuel jet.  3. Select a fuel jet.  <u>NOTES:</u> 1. It is allowed to install jets, dia. 0.9 to 1.4 mm. 2. The jets required for adjustments are included in the individual SPTA set of each carburetor. 3. When increasing the fuel jet diameter, the acceleration pump delivery increases and vice versa.  4. Screw in the selected jet.  5. Drive in and lock plug (10).  <u>NOTE:</u> It is allowed to replace the fuel jet when installing a new carburetor.			
TEST EQUIPMENT	TOOLS AND FIXTURES		
	Wrench 7x9 700880-2 Wrench 11x14 14-24-861 Pliers, flat-nosed 150 Wrench 14x17 14-232-03  Wire, locking KO-0.8		

*wire to coil → Green retard (BY  
white inside*

## IGNITION SYSTEM - DESCRIPTION AND OPERATION

### 1. GENERAL

The ignition system ensures well-timed igniting of the working mixture in the cylinders.

The M-14P engine ignition system includes two M-9P magnetos, SD-49SMM spark plugs, shielded ignition harness (magneto selector switch and high-tension starting coil KP-4716).

### 2. DESCRIPTION

The mixture is ignited in the cylinders by a high-tension spark generated in two magnetos mounted on the rear cover of the engine crankcase.

High-tension current from the magneto is transmitted to the spark plugs via high-tension cables enclosed in a shielded ignition harness. Both magnetos are of the LH rotation type. The RH magneto serves the rear spark plugs and the LH one, the front spark plugs.

To ignite the working mixture in the cylinders at starting, starting coil KP-4716 is included in the system.

Current from the airplane electrical system passing through the primary winding of coil KP-4716 magnetizes its core and the starting coil breaker points, previously open, close the primary winding to ground. Magnetic field disappearing with current, induces high voltage in the coil secondary winding, which is needed to generate spark between the spark plug electrodes.

High voltage is fed to the starting electrode of the magneto rotor and through the distributor electrodes to the cylinder spark plugs.

When the engine accelerates to a speed of 12 to 14 % (300 to 400 r/min), the magneto is switched on and starting coil KP-4716 is cut out. In this case high voltage from the secondary winding of the magneto transformer is fed to the working electrode of the rotor and then through the distributor electrodes to the cylinder spark plugs.

The magnetos are cut in and out by means of a selector switch the knob of which can be set to either of the following four positions:

- "0" - both magnetos are off.
- "1" - the LH magneto is on and the RH magneto is off.
- "2" - the RH magneto is on and the LH magneto is off.
- "1+2" - both magnetos are on.