WEBER DHSA TYPE 2-BARREL

Fiat 124 (1968-73)

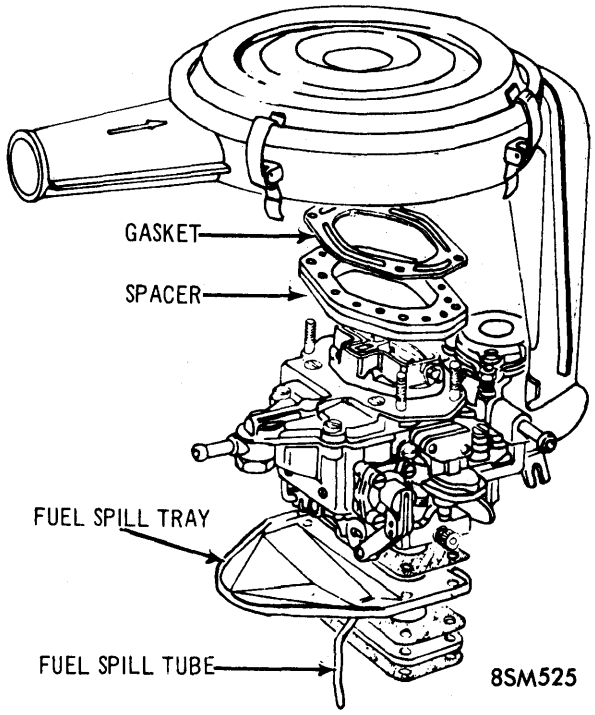
DESCRIPTION

Weber DHSA is a two venturi type carburetor, with a vacuum operated secondary throttle valve. Carburetor is equipped with a vacuum unit which prevents throttle from closing completely at fast idle. This vacuum device, in conjunction with fast idle unit, is used to match mixture supplied by operation of choke.

OPERATION

Fuel level in float chamber is regulated by a needle valve. Fuel from float bowl, flows through main jets into well, where it is emulsified with air from air correction jet and mixture passes out into venturi.

The differential throttle opening device is actuated by a lever, which has no action during the first stage of its stroke, after which it opens primary throttle mounted on primary spindle, while secondary throttle, mounted on secondary spindle, remains closed. After this the lever, keyed to secondary spindle, is released and thereafter secondary throttle is controlled by a diaphragm device actuated by engine suction. Carburetor is fitted with an extra fuel device on both barrels, which operates under full-power conditions with throttles wide open.



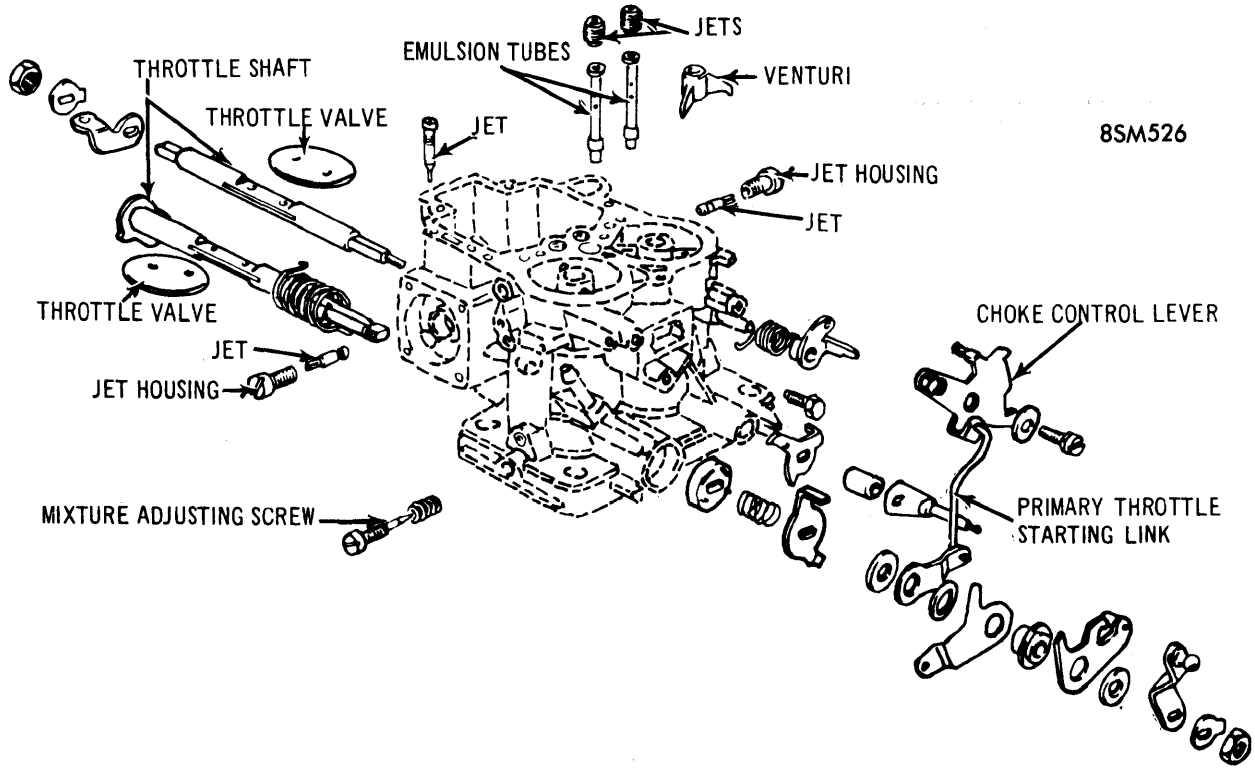
WEBER DOWNDRAFT CARBURETOR

CRANKCASE BY-PASS GAS SUCTION PIPE SYSTEM

System consists of a rotary valve operated by primary spindle, which opens a passage to the suction pipe, through which by-pass gas is drawn (from a condenser chamber on the crankcase)into zone below throttle valve. Some by-pass gas is drawn into system even when engine is at idle.

IDLING AND PROGRESSION SYSTEMS

Fuel from well of main jet passes through idling jet and is emulsified by air from air metering jet in main barrel. It then flows through a passage to idling orifice, adjustable by means



WEBER CARBURETOR COMPONENTS

WEBER DHSA TYPE 2-BARREL (Cont.)

of a screw, and then to intake below throttle. Idling mixture also enters primary barrel through progression holes opposite throttle valve. This gives a smooth increase in engine speed from idling.

Secondary throttle begins to open when suction in barrel is strong enough to overcome spring in diaphragm device, and through diaphragm rod turns lever on secondary throttle spindle. Fuel from secondary emulsifying jet passes to idling jet, is emulsified by air from metering jet of secondary barrel, and reaches barrel through progression holes opposite the throttle valve, giving smooth engine acceleration when secondary throttle opens.

ACCELERATOR PUMP

When throttles are opened, a cam on primary throttle spindle actuates the accelerator pump lever and fuel is injected into primary barrel. This enrichment process is necessary to compensate for lean mixture which is caused by sudden acceleration.

CHOKE SYSTEM

When choke control lever is pulled out, primary choke valves block carburetor air intake while, throttle rod opens primary throttle to a small extent. Emulsion block orifice of primary barrel then gives a richer mixture for easy starting. When engine is running, suction partly opens choke valves against action of choke return spring. Mixture, which is still rich, contains enough air to keep engine running. While it is warming up, choke valves should be gradually released. When normal operating temperature has been reached, the choke must be released completely. Choke valves are then held in fully open position by lobe of choke control lever, while primary throttle is brought to idling position.

ADJUSTMENT

IDLE ADJUSTMENT

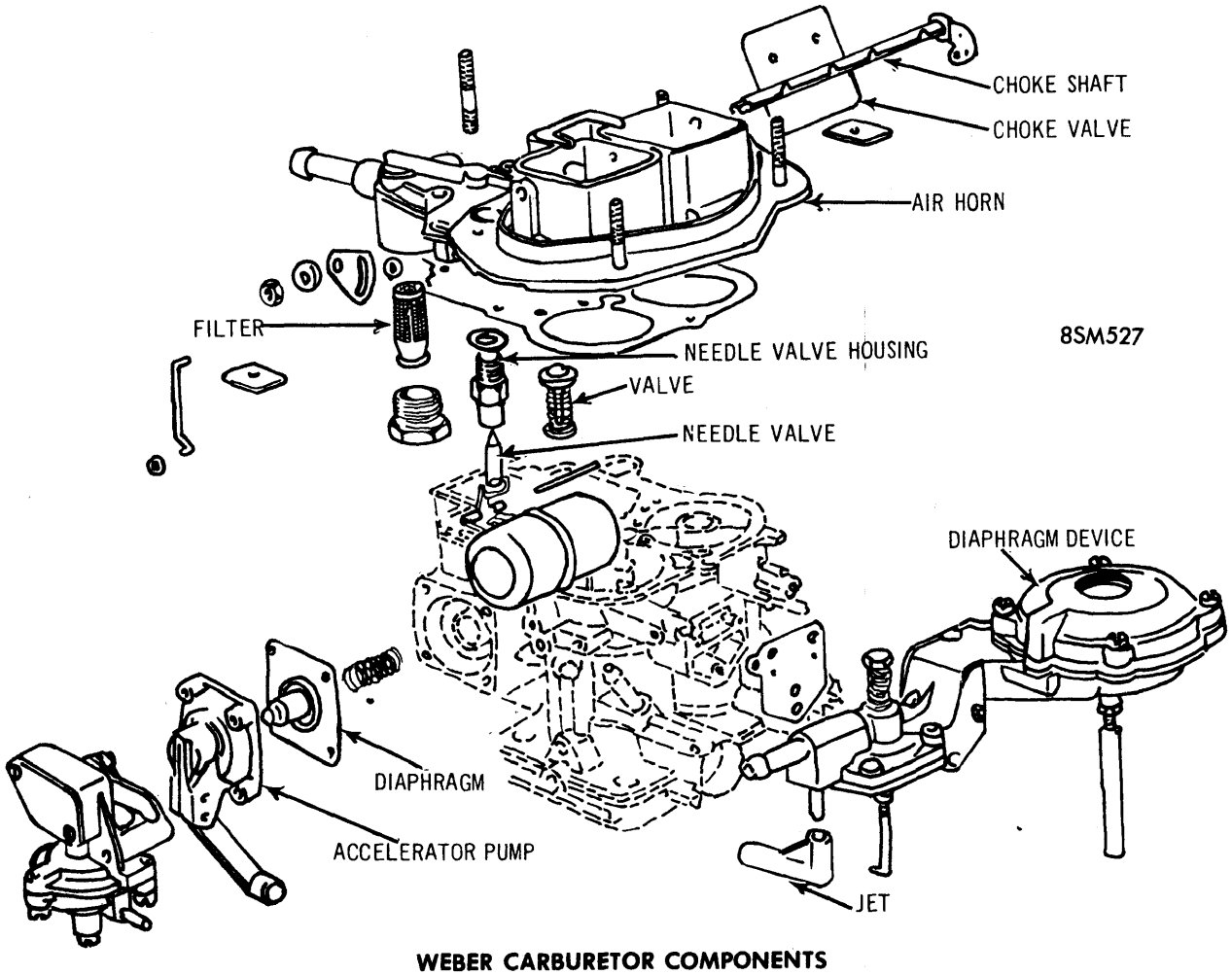
1) With engine at normal operating temperature, adjust throttle opening adjusting screw and idle mixture metering screw until engine RPM and exhaust CO level are within specification.

2) To adjust fast idle speed, depress button on firewall in engine compartment which energizes control electrovalve, and turn fast idle adjusting screw until engine RPM is within specifications.

Idle Adjustment Specifications

Application	①Hot Idle RPM	Fast Idle RPM
1968-69		
Coupe, Spider	850	1350-1450
Sedan, Wagon	800	1450-1550
1970 (All)	850	1550-1650
1971 & 1973 (All)	800-900	1550-1650

① – CO%: 2±.5 (Coupe & Spider), 3±.5 (Sedan & Wagon).



WEBER CARBURETOR COMPONENTS

WEBER DHS & DHSA TYPE 2-BARREL (Cont.)

CARBURETOR SPECIFICATIONS

A – Primary Main Jet
B – Secondary Main Jet
C – Primary Idle Jet
D – Secondary Idle Jet
E – Primary Discharge Tube
F – Secondary Discharge Tube
G – Primary Main Air Jet
H – Secondary Main Air Jet
I – Primary Idle Air Jet
J – Secondary Idle Air Jet
K – Accelerator Pump Jet
L – Fuel Level

Weber Carb. No.	A	B	C	D	E	F	G	H	I	J	K	①L
32 DHS 10	.051″	.051″	.018″	.031″	.....	.....	.067″	.063″	.049″	.027″	.016″	.236″
32 DHS 11	.051″	.053″	.018″	.031″	.....	.....	.067″	.063″	.049″	.027″	.016″	.236″
32 DHSA	.051″	.051″	.018″	.030″	.176″	.176″	.070″	.063″	.067″	.027″	.016″	.2362″±.0098″
26/34 DHSA	.047″	.054″	.018″	.027″	.137″	.137″	.070″	.059″	.063″	.027″	.020″	.2362″±.0098″
28/36 DHSA	.049″	.061″	.019″	.027″	.....	.....	.076″	.059″	.063″	.027″	.019″	.236″
28/36 DHSA 2	.049″	.061″	.020″	.028″	.....	.....	.077″	.059″	.063″	.028″	.020″	.236″

① – Distance from Cover with gasket in place.