

PACKARD STANDARD EIGHT

MODELS 2201-2211

1948-1949

MODEL 2301

1949-1950

Casting No. 561 on Face of Flange

WDO Dual Down-Draft Climatic Control Carbs.—**Models 644S-644SA**—List Price \$30.00

An \$8.00 exchange allowance is deducted from the list price if buyer turns in old carburetor.

CARBURETOR SPECIFICATIONS

For Packard (Std.) 8 Cyl. Eng.: $3\frac{1}{2}$ " Bore, $3\frac{3}{4}$ " Stroke.

Dimensions: Flange size, $1\frac{1}{4}$ inch dual, 4 bolt type.

Primary venturi, $1\frac{1}{32}$ inch.

Secondary venturi, $2\frac{1}{32}$ inch.

Main venturi, $1\frac{1}{8}$ inch.

Float Level: Distance from float bowl cover, when needle is seated to be $5/32$ inch. (Use gauge No. T109-154.)

Vents: Outside, No. 10 drill—four holes. Inside, none.

Gasoline Intake: Square vertical needle. Size No. 38 drill hole in needle seat.

Low Speed Jet Tube: Jet size, No. 70 drill (early production), No. 69 drill (late production).

By-pass, size No. 52 drill.

Economizer, size No. 50 drill.

Idle bleed, size No. 54 drill.

Idle Ports: Upper port, slot type, length .180 inch; width .030 inch.

Opening: .127 to .133 inch above upper edge of valve with valve closed tight.

Lower Port: (For Idle Adjustment Screw) Size, .0615 to .0655 inch diameter.

Set Idle Adjustment Screw: $5/8$ to $1\frac{1}{8}$ turns open. For richer mixture, turn screw out. Do not attempt to idle engine below 350 r.p.m.

Main Nozzle: In primary venturi, angle 45° . Closed tip.

Inside diameter No. 30 drill.

Upper hole: .028 inch diameter on 45° angle.

Lower hole: .0635 inch diameter on 60° angle.

Metering Rod: (Vacumeter Type) Economy step .064 inch diameter.

Middle step tapers to .060 inch diameter.

Power step .045 inch diameter.

Length of rod 2-59/64 inches.

Metering Rod Jet: .0846 inch diameter.

Metering Rod Setting: Use gauge, part No. T109-113 (2.280 inches).

Accelerating Pump: High pressure type (spring operated lever).

Pump discharge jets (twin), No. 70 drill.

Intake ball check, size No. 40 drill.

Discharge (needle seat), size No. 50 drill.

Outside relief to pump jet, none.

Pump Adjustment: $14/64$ " plunger travel (full throttle position). Use gauge T109-117S.

Choke: Carter Climatic Control, set at index. Butterfly type, offset valve. Choke heat suction hole, in body, size No. 37 (.104") drill.

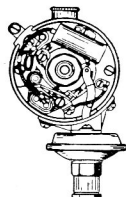
Vacuum Spark Port: .103 to .105 inch diameter. Top of port .060 inch above valve.

Motor Tune-Up—Be Accurate! Always Use Feeler Gauges!

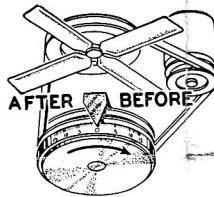
CAUTION: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carburetor.



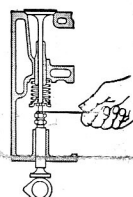
**Spark Plug
Gap
.028"
±.0025"**



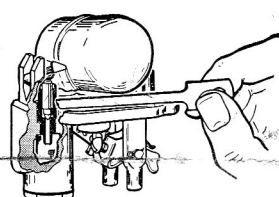
**Breaker Point
Setting
.0125" to .0175"**



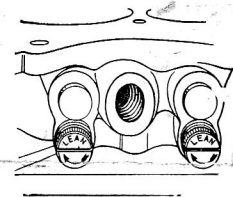
**Ignition Timing
Breaker Points to Open:
6° B. T. D. C.
Plus 0°, Minus $1\frac{1}{2}$ °**



**Valve Setting
Intake .007"
Exhaust .010"**



**Float Setting
(Use Gauge)
5/32"**



**Idle Adjustment
Screw Setting
 $5/8$ to $1\frac{1}{8}$
Turns Open**

CARBURETOR ADJUSTMENTS

PUMP ADJUSTMENT: With pump connector link in inner hole and throttle adjustment screw backed out, pump plunger should travel $14/64$ " from closed to wide open throttle position. Measure pump travel by placing gauge T109-117S on raised portion of bowl cover around the plunger shaft. Projecting portion of indicator should be placed on top surface of connector link where it extends through the plunger shaft. The difference between readings at wide open and closed throttle positions should be " 14 " ($14/64$ "). Adjust by bending throttle connector rod at lower angle.

METERING ROD ADJUSTMENT: Must be made when re-assembling carburetor or when leaner than standard rods are installed. Do not disturb pump adjustment. Procedure is as follows: (a) Back out throttle lever adjustment screw until throttle valves seat. Insert one metering rod gauge T109-113 in place of metering rod. Be sure gauge seats in jet. (b) Install metering rod pin and pin spring in vacuum piston and link assembly. (c) Press lightly on top of vacuum piston link until lip contacts tongue on anti-percolator arm. There should now be less than .005" clearance between metering

rod pin and shoulder in notch of gauge with throttle valves seated.

Adjust by bending tongue on pump arm. Remove gauge and metering rod pin and install metering rods, discs, spring, and metering rod pin, and hook spring to metering rod. Vacuum piston and link must not bind or drag in any position.

ANTI-PERCOLATOR ADJUSTMENT: After adjusting pump and metering rods, and with throttle valves seated, insert .015" flat feeler gauge T109-72 between anti-percolator stems and lips on anti-percolator arm. Center of indicator lines must be flush with top of anti-percolator plug. Adjust by bending lips, be sure both valves are adjusted evenly.

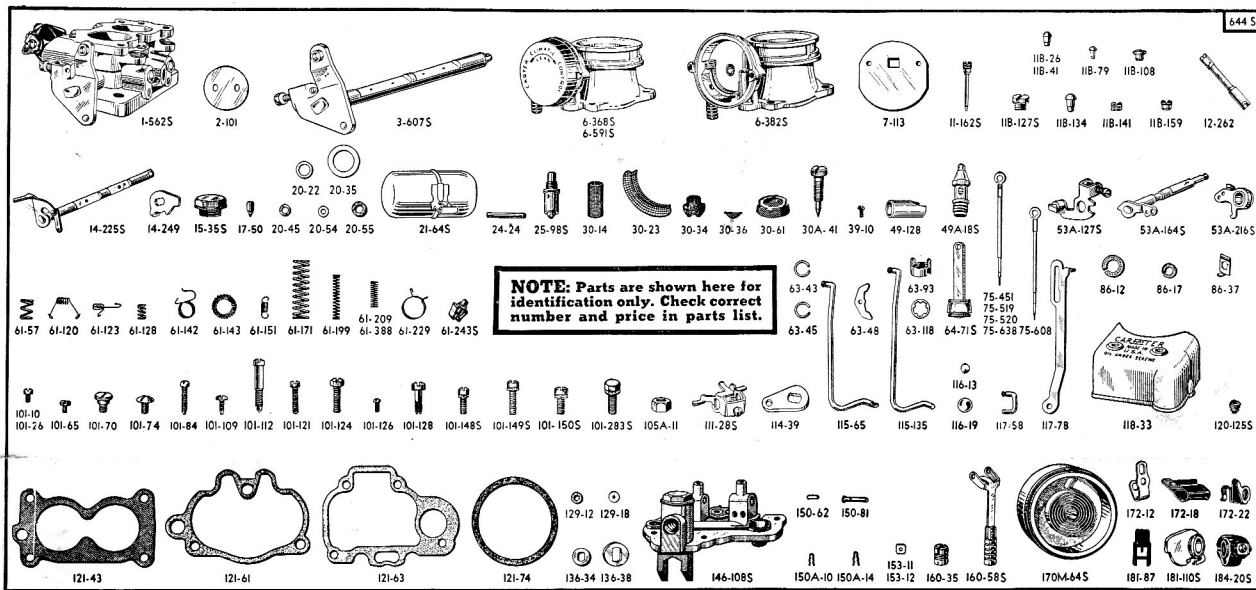
UNLOADER ADJUSTMENT: With throttle wide open, distance between upper edge of choke valve and inner wall of air horn should be $11/64$ " (gauge T109-166). Adjust by bending lip on fast idle connector link. When unloader is adjusted properly, with throttle valve wide open, move choke valve to wide open position and choke valve will lock in open position.

FAST IDLE ADJUSTMENT: Hold choke valve tightly closed and adjust fast idle arm screw until there is .020" (T109-29) clearance between edge of throttle valve and bore of carburetor, side opposite idle port.

FLANGE ASSEMBLY: Assemble 1-562S in the following manner in order to center throttle valves properly and eliminate excessive endplay in the throttle shaft. Install throttle shaft and lever assembly and place throttle shaft retaining ring firmly on stub of shaft with prongs extended outward. Take out all endplay by pressing retaining ring on shaft as

far as possible. Then install throttle valves with "c" in circle toward the idle port when viewed from the manifold side. To center valves tap lightly holding in place with fingers while tightening screws.

STARTER SWITCH: The Carter starter switch must be qualified with Carter protractor gauge T109-155S. Switch must make contact between 30° and 45° throttle opening. When qualifying the starter switch, do not use more than three 153-11 (.018" shim) and two 153-12 (.006" shim) and not less than one 153-11 shim.



Packard—1948-1950—Carburetors Nos. 644S-644SA—List Price \$30.00

WHEN SERVICING, USE GASKET ASST. No. 156, PRICE \$0.65; REPAIR PACKAGE No. 1376C, PRICE \$4.95

PART NAMES IN BOLD TYPE, LISTED BELOW, INDICATE CONTENTS OF REPAIR PACKAGE

Part No.	PART NAME	List Price	Part No.	PART NAME	List Price
1-562S	Body flange and switch assembly.....	\$6.25	75-520	Metering rod—2 sizes lean—.066"—.066" to .0635"—.0535".....	(2) .30
2-101	Throttle valve.....	(2) .10	75-638	Metering rod—Standard—.064"—.064" to .060"—.045".....	(2) .30
3-607S	Throttle shaft and lever assembly.....	1.10	86-12	Flange stud lock washer.....	.01
6-368S	Air horn and climatic control assembly (Sup. by 6-591S).....	2.30	86-17	Body flange lock washer (Sup. by 101-283S).....	.01
6-382S	Air horn and pump jet assembly.....	6.00	86-37	Terminal lock washer.....	(2) .01
6-591S	Air horn and climatic control assembly.....	.20	101-10	Anti-percolator arm clamp screw.....	.05
7-113	Choke valve.....	(2) .30	101-26	Coil housing attaching screw.....	(2) 2 for .05
11-162S	Low speed jet assembly.....	(2) .02	101-65	Choke shaft attaching screw.....	.10
11B-26	Body flange passage plug.....	(2) .02	101-70	Fast idle arm attaching screw.....	.05
11B-41	Pump discharge passage plug.....	(4) .02	101-74	Throttle shaft arm attaching screw.....	.05
11B-79	Rivet passage plug.....	(2) .02	101-84	Fast idle adjustment screw.....	.05
11B-108	Idle port passage plug.....	(2) .10	101-74	Switch terminal screw.....	(2) .05
11B-127S	Nozzle passage plug and gasket assembly.....	(2) .02	101-109	Terminal cap attaching screw.....	.05
11B-134	Rivet passage plug.....	(2) .10	101-112	Throttle lever adjustment screw.....	.05
11B-141	Nozzle retainer plug.....	(2) .05	101-124	Body flange attaching screw (Sup. by 101-283S).....	(4) 2 for .05
11B-159	By-pass bleeder screw plug.....	(2) .20	101-126	Throttle valve attaching screw.....	.15
12-262	Nozzle.....	(2) .30	101-128	Air horn attaching screw—special.....	.05
14-225S	Choke piston lever, link and shaft assembly.....	.40	101-148S	Bowl cover attaching screw and washer assembly.....	(6) .05
14-249	Choke trip lever.....	.10	101-149S	Body flange attaching screw and washer assembly.....	(3) .05
15-35S	Strainer nut and gasket assembly.....	.30	101-150S	Air horn attaching screw and washer assembly.....	(2) .05
17-50	Pump check needle.....	.15	101-283S	Body flange attaching screw and washer assembly.....	.05
20-22	Needle seat gasket.....	(3) .05	105A-11	Flange stud nut.....	.05
20-35	Bowl strainer gasket.....	(2) .05	111-285	Anti-percolator arm and screw assembly.....	.20
20-45	Nozzle gasket.....	(2) .05	114-39	Throttle shaft arm.....	.06
20-54	Metering rod jet gasket.....	(2) .05	115-65	Throttle connector rod (Sup. by 115-135).....	.25
20-55	Idle passage gasket.....	(3) .05	115-135	Throttle connector rod.....	.15
21-64S	Float and lever assembly.....	.80	116-13	Ball.....	.02
24-24	Float lever pin.....	.05	116-19	Ball (Switch).....	.15
25-98S	Needle and seat assembly.....	.80	117-58	Pump arm link.....	.05
30-14	Bowl cover strainer.....	.15	117-78	Fast idle connector link.....	.10
30-23	Piston housing strainer.....	.10	118-33	Dust cover.....	.50
30-34	Pump strainer.....	.10	120-125S	Metering rod jet and gasket assembly.....	(2) .30
30-36	Switch strainer (Sup. by 30-61).....	.10	121-43	Body flange gasket.....	.25
30-61	Switch strainer.....	(2) .30	121-61	Air horn gasket.....	.10
30A-41	Idle adjustment screw.....	(2) .05	121-63	Bowl cover gasket.....	.10
39-10	Choke valve attaching screw.....	(2) 2 for .50	121-74	Coil housing gasket.....	.05
49-128	Switch plunger.....	.50	129-12	Metering rod disk (Sup. by 129-18).....	(2) .02
49A-18S	Anti-percolator valve plug assembly.....	(2) .50	129-18	Metering rod disk.....	(2) .02
53A-127S	Fast idle arm, pin and screw assembly.....	.50	136-34	Choke shaft washer.....	.02
53A-164S	Pump operating lever and countershaft assembly.....	.25	136-38	Throttle shaft washer.....	.02
53A-216S	Pump arm and collar assembly.....	.05	146-108S	Bowl cover assembly.....	1.30
61-57	Idle adjustment screw spring.....	(2) .05	150-62	Piston pin.....	.02
61-120	Metering rod spring.....	.10	150-81	Metering rod pin.....	.05
61-123	Connector link spring.....	.10	150A-10	Pin spring.....	(4) .01
61-128	Connector rod spring (Use with 115-65).....	.05	150A-14	Pin spring (Countershaft).....	.01
61-142	Fast idle arm spring.....	.10	153-11	Contact spring shim (.018")—(Switch).....	(3) .01
61-143	Plunger spring.....	.10	153-12	Contact spring shim (.006")—(Switch).....	(2) .01
61-151	Pump arm spring.....	.10	160-35	Choke piston.....	.20
61-171	Pump spring.....	.10	160-58S	Vacuum piston and link assembly.....	.30
61-199	Vacuum piston spring.....	.05	170M-64S	Thermastatic coil and housing assembly.....	2.00
61-209	Switch return spring (Sup. by 61-388).....	.10	170M-64SU	Unitized package (Consists of 1—170M-64S, 3—63-48, 3—101-26, 1—121-74).....	2.27
61-229	Fast idle cam spring.....	.10	172-12	Hold down clip (Terminal cap).....	.10
61-243S	Switch contact spring and washer assembly.....	.15	172-18	Cable clip.....	.10
61-388	Switch return spring.....	.10	172-22	Throttle connector rod retainer.....	.06
63-43	Switch strainer retainer ring (Use with 30-36).....	.05	181-87	Guide block (Switch).....	.25
63-45	Check ball retainer ring.....	.05	181-110S	Fast idle cam assembly.....	.30
63-48	Thermostatic coil housing retainer.....	(2) .05	184-20S	Terminal cap assembly.....	.75
63-93	Spring retainer (Use with 115-65).....	.05	192-11U	Carter starter switch unit.....	1.75
63-118	Throttle shaft retaining ring.....	.05			
64-71S	Pump plunger and rod assembly (Identify by shaft No. 49-127).....	.70			
75-519	Metering rod—1 size lean—.065"—.065" to .062"—.052".....	(2) .30			

NOTE: Figures in parentheses preceding list price indicate number of pieces used in one carburetor. Where no figure is shown, only one is used.

EFFECTIVE JANUARY 1, 1952, ADD 15% TO LIST PRICE OF CARBURETORS AND PARTS WITH FRACTIONAL ADJUSTMENT TO NEAREST EVEN CENT.