

PACKARD

Service Counselor

PARTS * ACCESSORIES * PRODUCT * PROFITS

INSTITUTIONAL



PROMOTIONAL

VOL. 22, NO. 5

APRIL 1, 1948

Cowl and Front End Shake

22nd Series Convertibles

At some time or other you may be called upon to correct an excessive cowl and front end shake in a 22nd Series convertible.

This condition rarely is found in a "hard-top" model because the arch-like roof panel binds the various body panels into a single unit and tends to stiffen the body in the same manner as a cover stiffens a box. Because a convertible body does not have the additional reinforcement provided by a solid top, it is subject to a twisting or weaving action which sometimes results in excessive cowl and front end shake if one or more non-standard conditions exist.

It is not always a simple matter to determine the cause for a front end disturbance of this kind since the source of the trouble may not always be confined to a single condition. Occasionally the source of this trouble may be spread out over a combination of non-standard conditions. The following paragraphs describe some of the more prominent factors to be considered when diagnosing reports of excessive cowl shake in a 22nd Series convertible.

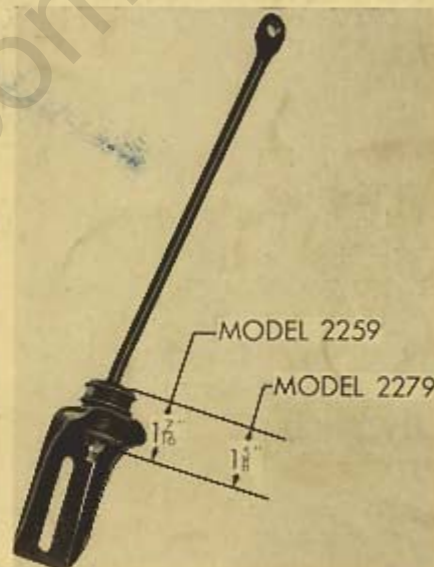
Wheel and tire balance plays an important part in holding cowl shake to a minimum. We would like to point out that, in convertibles particularly, it is just as necessary to have proper wheel and tire balance in the rear as in the front. The disturbance created

by rear wheels and tires which are out of balance may be transmitted through the frame and body to the front end and the disturbance may be severe enough to cause front end shake.

The shock absorbers, both front and rear, must be in good condition. If the shock absorbers bind, are worn, or if leaks have developed, the front or rear spring action is not properly controlled and cowl or front end shake may develop. The condition of the rear lateral stabilizer (fifth shock absorber) should not be overlooked. A stabilizer which is not operating properly may contribute toward cowl shake.

All bolts, nuts, and retaining screws used for attaching front end sheet metal parts such as shields, splashers, etc., should be properly tightened. The radiator cradle to grille braces also should be checked for proper tightness and security since these parts affect the rigidity of the front structure. It is important that the radiator core cradle to frame tie rod grommets be compressed to the dimensions shown in the accompanying illustration.

Loose or bent bonnet locking clamps sometimes may be the source of a front end shake. The bonnet tends to reinforce the front end structure in the same manner as the roof panel stiffens the body of a "hard-top." If the locking



clamps are loose, the bonnet may not be held securely enough to prevent a twisting or weaving of the front structure.

A propeller shaft disturbance sometimes might be interpreted as front end shake although it seems to emanate from the middle of the car more than from the front as in a typical cowl or front end shake.

The welding of the frame, particularly at the lower reinforcing plate at the center of the X-member, should be checked for breaks. A broken weld will reduce the rigidity of the frame and may easily cause a front end shake. Broken welds should be repaired by electric welding.

22nd Series Carburetor Specifications

The following specifications cover all carburetors used on 22nd Series Packards. They supplement and bring up to date the *Serviceman's Training Booklet* entitled *Carburetor*.

Refer to the booklet for carburetor specifications on the 1941 model and all 20th and 21st Series cars.

Carburetor Model	WA-1-530S	WDO-644S	WDO-643S-SA *	WDO-531S
Used on Packard Models	2220-40	2201-11	2202-22-32	2206-13-26-33.
MAKE TYPE	Carter Downdraft	Carter Dual Downdraft	Carter Dual Downdraft	Carter Dual Downdraft
DIMENSIONS				
Flange size	1 $\frac{1}{4}$ "	1 $\frac{1}{4}$ " dual 4-bolt	1 $\frac{1}{4}$ " dual 4-bolt	1 $\frac{1}{4}$ " dual 4-bolt
Primary venturi ID	1 $\frac{11}{32}$ "	1 $\frac{11}{32}$ "	1 $\frac{11}{32}$ "	1 $\frac{11}{32}$ "
Secondary venturi ID	1 $\frac{11}{16}$ "	1 $\frac{21}{32}$ "	1 $\frac{19}{32}$ "	1 $\frac{19}{32}$ "
Main venturi ID	1 $\frac{5}{16}$ "	1 $\frac{1}{8}$ "	1 $\frac{7}{32}$ "	1 $\frac{7}{32}$ "
FLOAT LEVEL (Needle seated)	$\frac{3}{8}$ "	$\frac{5}{32}$ "	$\frac{5}{32}$ "	$\frac{5}{32}$ "
Measured from	Free end float level seam	Float bowl cover	Float bowl cover	Float bowl cover
To	Tip lower edge float chamber cover	Each end of float	Each end of float	Each end of float
Use gauge	T109-80	T109-154	T109-154	T109-154
VENTS				
Outside ID	#10 drill	#10 drill	#10 drill	#10 drill
Inside	None	None	None	None
GASOLINE INTAKE (In needle seat)	Sq vert needle #38 drill	Sq vert needle #38 drill	Sq vert needle #38 drill	Sq vert needle #38 drill
GAS LINE CONNECTION (Weatherhead nipple)	$\frac{5}{16}$ "	$\frac{5}{16}$ "	$\frac{5}{16}$ "	$\frac{5}{16}$ "
LOW SPEED JET TUBE				
Jet size	#65 drill	#70 drill (early) #69 drill (late)	#70 drill	#70 drill
By-pass size	#53 drill	#52 drill	#52 drill	#52 drill
Economizer size	#49 drill	#50 drill	#50 drill	#50 drill
Idle bleed size	#50 drill	#54 drill	#52 drill	#52 drill
IDLE PORTS				
Upper (Slot type) Opening (Above upper edge of valve with valve closed tight.)	.200" x .030"	.180" x .030"	.180" x .030"	.190" x .030"
Lower (Idle screw seat)	.158"—.162" #46 drill	.127"—.133" #52 drill	.127"—.133" #52 drill	.152"—.158" #52 drill
IDLE ADJUSTMENT SCREW SETTING (Hold idle below 350 rpm) For richer mixture	$\frac{1}{2}$ to 1 $\frac{1}{2}$ turns open Turn out	$\frac{5}{8}$ to 1 $\frac{1}{8}$ turns open Turn out	$\frac{3}{4}$ to 1 $\frac{1}{4}$ turns open Turn out	$\frac{1}{2}$ to 1 $\frac{1}{2}$ turns open Turn out
MAIN NOZZLE (In primary venturi, angle 45°, closed tip)				
Upper hole (45° angle)	#30 drill	#30 drill	#30 drill	#30 drill
Lower hole (60° angle)	#68 drill	#70 drill	#69 drill	#63 drill
	#45 drill	#52 drill	#52 drill	#50 drill
METERING ROD (Vacuometer type)				
Length	3 $\frac{3}{4}$ "	2 $\frac{5}{8}$ "	2 $\frac{5}{8}$ "	2 $\frac{5}{8}$ "
Setting	2.468"	2.280"	2.280"	2.280"
Use gauge	T109—102	T109—113	T109—113	T109—113
Economy step diameter	.076"	.064"	.0655"	.0665"
Middle step tapers to	.065"	.060"	.0585"	.060"
Power step diameter	.040"	.050"	.051"	.056"
Jet diameter	.1015"	.0846"	.09055"	.09055"

22nd Series Carburetor Specifications—Continued

ACCELERATING PUMP

Type (Spring operated lever)	Low pressure	High pressure	High pressure	High pressure
Discharge jet size	#72 drill	(2) #70 drill	(2) #72 drill	(2) #72 drill
Intake ball check size	#40 drill	#40 drill	#40 drill	#40 drill
Discharge	Ball check	Needle seat	Needle seat	Needle seat
Size	#32 drill	#50 drill	#50 drill	#50 drill
Relief passage (to outside) ID	#42 drill	No passage	No passage	No passage
Plunger travel (Full throttle position)	$\frac{1}{4}$ "	$\frac{7}{32}$ "	$\frac{7}{16}$ "	$\frac{13}{32}$ "
Use gauge	T109—117S	T109—117S	T109—117S	T109—117S

VACUUM SPARK PORT

Diameter	.061"—.064"	.103"—.105"	.054"—.056"	.054"—.056"
Bottom of port to valve	.022"—.027"	.057"	.050"—.054"	.054"

CHOKE (Carter Climatic Control)	Set at index	Set at index	Set at index	Set at index
Heat suction hole (in body) ID	#37 drill	#37 drill	#37 drill	#37 drill
Valve (Butterfly type in air horn)	Offset	Offset	Offset	Offset

*Models identical excepting that a throttle centering screw is used on the WDO-643S and a throttle centering washer on the WDO-643SA.

Your Service Staff

This is the first in a series of stories published to acquaint members of the Packard Field Organization with individual members of the Factory Service Department.

Arthur Dau (pronounced Daw) is a key member of the Service Technical Section writing staff.

In recent months he has dug out the information for and written *Service Manual* sections on "The Hydraulic System of the 1948 Convertible" and the "1M-245 and 1M-356 Marine Engine Reverse Gear", the *Marine Engine Operator's Manual*, and other major jobs as well

as turning out many technical articles for *Service Counselor*.

An employe of Packard since 1935, "Art" knows the heavy, greasy end of the automobile repair business as well as theory. His father, a long-time Packard man, made a Packard mechanic out of "Art" before he finished high school.

Before the war "Art" worked at the Packard Proving Grounds near Utica, Mich., as a mechanic, test driver, inspector, and analyst.

During the war he spent 25 months as a Civilian Technical Advisor to the U. S. Army Air



Corps in England. After the blitz, he returned to factory as a technical writer on Army Manuals and when hostilities were over was transferred in the same capacity to the Technical Service Section.

"Art" aims his writing at twin targets:

- 1.—Technical perfection.
- 2.—Simplicity and clarity of expression—"If they already knew it, I wouldn't have to write at all."

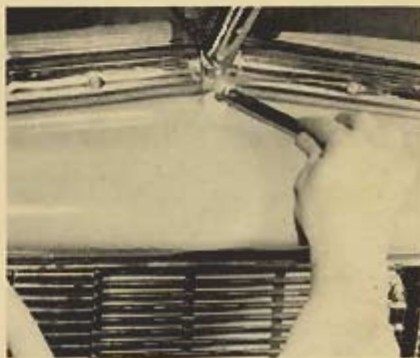
In his spare time he bowls in the high 170's, shoots a nice game of golf, and captures an occasional fish.

New Tool

Windshield Wiper Switch Nut Wrench



This wrench is designed for easy removal of the windshield wiper switch nut on top of the instrument panel with no danger of damage.



After removing the control knob, the slotted windshield wiper switch nut is quickly removed with this wrench.

Place your order for this wrench with the Kent-Moore Organization Inc., General Motors Building, Detroit 2, Mich. Tool #J-2602. Price \$.45.

What More New Cars Means to You

During the first two and one half months of 1948, total new car production exceeded 1,000,000 units despite a loss of more than two weeks production time caused by a natural gas shortage. Top trade sources predict this rate will increase and total production for 1948 will approximate 6,000,000 new cars.

What does this flood of new cars mean to a Service Department?

It means your average repair order will get smaller. New cars seldom require major overhauls, complete paint jobs, or other expensive repairs. Meanwhile, many older cars will pass on to people who will avoid making repairs as long as possible, place "must" jobs in "cut rate" shops.

It means you must build more business *now* if you are to have an adequate service volume in 1949. If the average order is smaller, the obvious way to maintain volume is to write more orders.

This can be done only by *holding* your present customers, *regaining* customers you have lost, *gaining* new customers.

New customers can be gained and old ones regained by newspaper and direct mail advertising and by using the Packard Owner Follow Up System. Every person who buys a new or used car in your Dealership should be *sold* on your Service Department before he leaves with his car.

Holding customers, new and old is the most important thing. And holding a customer is simply a matter of treating him right:

1-Be courteous. A customer may tolerate discourtesy, but he never enjoys it.

2-Be fair. Charge a fair price. Do a first class job. Handle adjustments promptly and fairly. If a customer walks out "mad", you have made a bad adjustment.

3-Be Clean. No customer wants dirty coveralls on his upholstery or "free grease" on his steering wheel. Nor does he want to sit in a dirty reception area or use a dirty rest room.

4-Be truthful. If you can't deliver a job when the customer wants it, tell him you can't and explain why. When you do promise a job, keep your promise.

neither ice . . . nor flood . . .

LIKE THE MAIL, PACKARD SERVICEMEN BRAVE ELEMENTS TO ATTEND TRAINING SCHOOLS IN MEMPHIS AND ST. LOUIS

U. S. Mailmen have a fine slogan—"Neither snow . . . nor rain . . . nor heat . . . nor gloom of night shall faze these swift couriers in the swift completion of their appointed rounds.

Packard Servicemen lack a slogan—but get there just the same!!



St. Louis, Missouri—Despite the worst ice storm in years, 100 per cent attendance was chalked up by Servicemen from 17 Dealerships who attended this Transmission and Overdrive School in the Forest Park Hotel.



Memphis, Tennessee—Although floods inundated highways and made long detours necessary, 29 Servicemen from 15 Dealerships splashed through the high water to the Peabody Hotel for this Transmission and Overdrive School.

(Editors Note: Packard Zone Parts and Service Representative Herman Sprenger would make a wonderful mailman. He instructed at *both* schools.)