

PACKARD
Service Manual



TOOL
CATALOG

SERVICE DEPARTMENT
PACKARD MOTOR CAR COMPANY
DETROIT MICHIGAN

PACKARD
SPECIAL TOOLS
AND
SHOP EQUIPMENT

**The best mechanic in the world
cannot do good work without the
right kind of Tools for the job
and Modern Shop Equipment —**

**The purpose of this department is to assist you in
rendering BETTER PACKARD SERVICE.**

**ISSUED BY SERVICE DEPARTMENT
PACKARD MOTOR CAR COMPANY**

January, 1935

RECOMMENDED LISTS

Shop Equipment

Many small or moderate sized service stations have erroneous ideas that they must have considerable heavy non-portable machinery, such as a lathe, drill press, etc.

Heavy machinery is not profitable unless it can be of service every day; also remember that this machinery is suitable for the **non-competitive infrequent operations** that represent the **small part of the customer's operating expense.**

For the occasional lathe job, such as checking alignment of axle shafts, crankshafts, clutch and transmission shafts, or turning up some special part, it is advisable to have the work done by some reliable local machine shop. Such a shop usually will allow a discount of 10 to 25%; if not, you are justified in adding a handling charge of 10 to 20% above the price of the machine shop.

It is far more economical to purchase individual motor-driven portable units. For instance, the cost of resharpening a $\frac{1}{8}$ " drill in a shop that has a lathe, drill press and emery stand driven off of one large motor, is more than the value of a new drill.

Special Tool List for Shop Mechanic's Personal Kit

S. T. 726 Conn. Rod and Piston Assb. Pin	\$ 1.00
S. T. 153 Feeler Gauge Holder	.60
S. T. 170 Cylinder Base Nut Wrench	1.00
S. T. 186 Brake Adjusting Wrench (2)	2.00
S. T. 761 Cylinder Head Nut Wrench	1.50
S. T. 216 Tappet Wrenches (set of 3)	3.00
S. T. 222 Cylinder Head Nut Wrench	1.10
S. T. 612 Mechanic's Tool Roll	3.10
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	\$13.30

Special Tool List for Dealer—No. 1.

S. T. 763 Piston Lubricator Valve and Exhaust Pipe Nut Wrench	\$ 1.15
S. T. 774 Piston Ring Compressor	1.20
S. T. 121 Cylinder Head Lifter	1.35
S. T. 746 Heavy Duty Wheel Puller	5.00
S. T. 782 Hub Cap Wrench All Models	2.75
S. T. 748 Rear Axle Shaft Nut Wrench	2.90
S. T. 153 Feeler Gauge Holder	.60
S. T. 154 Combination Shop Jack	Pair 6.50
S. T. 170 Cylinder Base Nut Wrench	1.00
S. T. 781 Exhaust and Inlet Manifold Nut Socket Wrench	2.00
S. T. 186 Brake Adjusting Wrench (set of 2)	2.00
S. T. 202 Cylinder Head Nut Speed Wrench	1.50
S. T. 216 Tappet Wrenches (set of 3)	3.00
S. T. 222 Cylinder Head Nut Wrench (8)	1.10
S. T. 600 Courtesy Coat (Specify S. T. No. for size)	3.00
S. T. 612 Mechanic's Tool Roll	3.10
S. T. 764 Clutch Shaft Flywheel Bearing Puller	3.50
S. T. 729 Radiator Core Nut Wrench	4.00
S. T. 780 Valve Lifter	3.00
S. T. 784 Shock Absorber Offset Screw Driver	1.00
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	\$49.65

Special Tool List for Dealer—No. 2

S. T. 758 Aligning Jig	\$ 40.00
S. T. 774 Piston Ring Compressor	1.20
S. T. 109 Test Tank	16.00
S. T. 781 Exhaust and Inlet Manifold Nut Socket Wrench	2.00
S. T. 113 Pulley and Sprocket Puller (Packard Six and Packard Eight)	9.75
S. T. 821 Radiator to Dash Tie Rod and Spring Shackle Nut Wrench	2.25
S. T. 121 Cylinder Head Lifter	1.35
S. T. 746 Heavy Duty Wheel Puller	5.00
S. T. 782 Hub Cap Wrench	2.75
S. T. 130 Fender Cover	Pair 5.95
S. T. 748 Rear Axle Shaft Nut Wrench	2.90
S. T. 133 Rear Axle Shaft Nut Wrench	2.90
S. T. 144 Front Seat Cover	2.45
S. T. 146 Double Door Cover	Pair 3.00
S. T. 148 Cowl Cover	1.40
S. T. 153 Feeler Gauge Holder	.60
S. T. 154 Car Jack for Shop Work	Pair 6.50
S. T. 155 Car Jack for Motor Work	Pair 6.50
S. T. 170 Cylinder Base Nut Wrench	1.00
S. T. 763 Piston Lubricator Valve and Exhaust Pipe Nut Wrench	1.15
S. T. 186 Brake Adjusting Wrench (set of 2)	2.00
S. T. 193 Compressometer	4.50
S. T. 761 Cylinder Head Nut Wrench	1.50
S. T. 202 Cylinder Head Nut Speed Wrench	1.50
S. T. 228 Cylinder Head Nut Speed Wrench	2.50
S. T. 204 Carbon Brush (Flared Type)	2.20
S. T. 205 Carbon Brush (Straight Type)	2.00
S. T. 830 Cylinder Head Stud Extractor	4.71
S. T. 826 Valve Lifter	9.50
S. T. 216 Tappet Wrenches (set of 3)	3.00
S. T. 222 Cylinder Head Nut Wrench (8)	1.10
S. T. 600 Courtesy Coat (Specify S. T. No. for size)	3.00
S. T. 612 Mechanic's Tool Roll	3.10
S. T. 832 Bushing Reamer $\frac{7}{8}$ "	7.75
S. T. 739 Distributor Breaker Point Wrench (set of 2)	.35
S. T. 838 Radiator Lifter	3.50
S. T. 729 Radiator Core Nut Wrench	4.00
S. T. 780 Valve Lifter	3.00
S. T. 784 Shock Absorber Offset Screw Driver	1.00
S. T. 740 Oil Pump Wrench	1.90
S. T. 764 Clutch Shaft Flywheel Bearing Puller	3.50
S. T. 737 Thermometer Nut Wrench	1.35
S. T. 731 Piston Pin Aligning Fixture	3.90
S. T. 726 Piston Assembling Pin	1.00
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	\$186.51

ORDER SPECIAL TOOLS
ON
D-19 PARTS ORDER FORMS

**Use separate form and do not
include Parts or Accessories on
same order. For information
on Tools or suggestions for
additional Tools, write "Special
Tool Department"**

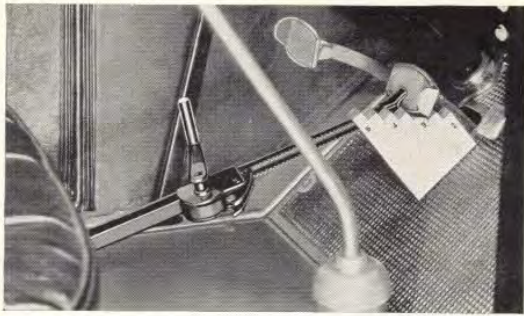
All Prices Listed are subject to change without notice.

The Following Pages List
PACKARD SPECIAL TOOLS

~
Designed and Supplied for the Purpose
of
Increasing Service Efficiency
and
Saving Time on Standard Operations

~
The Tools Are Arranged in Groups

~
A Miscellaneous Group Will be Found Under
"Shop Equipment"



Brake Pedal Depressor

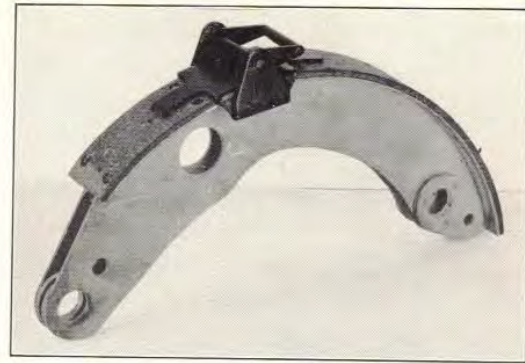
Tool No. S. T. 190—All Models

Brake Pedal Depressor Gauge

Tool No. S. T. 659—All Models

A block to locate the pedal position when adjusting the brakes. This tool is indispensable when using S. T. 658.

If a Pedal Depressor is used, it is unnecessary to have one man sit in the driver's seat while another mechanic is adjusting the brakes. The depressor has a double ratchet for close adjustment, and a scale on the side so you can accurately rest the depressor at the same point after each test.



"Sure-Tite" Lining Clamp

Tool No. S. T. 773—1 $\frac{3}{4}$ " Lining

Tool No. S. T. 766—2" Lining

A brake lining job done with Sure-Tite Clamp assures you of a perfect job. A slight pressure on the handle of the clamp, pressing it down to lock it, pulls the lining down tightly against the brake shoe and holds it in place which makes it a valuable tool for brake servicing.



Brake Adjusting Wrench

Tool No. S. T. 186—All Bendix Brakes

It is possible to make all service adjustments on Bendix brakes with a pair of these wrenches. Adjustment at the operating lever is made by using the large end of one wrench and the small opening of the other. When changing the eccentric adjustment on the brake support plate, hold the eccentric with the slot in the small end and loosen the lock nut with the large end of the other wrench.



Brake Adjusting Tools

S. T. 847 Brake Anchor Bolt Wrench—16 inch

S. T. 846 Feeler Gauge—.008 and .014 inch

S. T. 845 Brake Adjusting Screw Wrench

S. T. 852 Brake Anchor Pin Adjusting Tool

The S. T. 847 is a 16 inch wrench for tightening brake anchor bolts. You need a wrench of this length to properly tighten anchor bolts.

S. T. 846 is a feeler gauge .008 and .014 inch to measure the proper clearance between the lining and the drum.

S. T. 845 is a wrench used for turning the Adjusting Screw to get the proper clearance between the brake shoes and drum. You will find it much quicker than a screw driver.

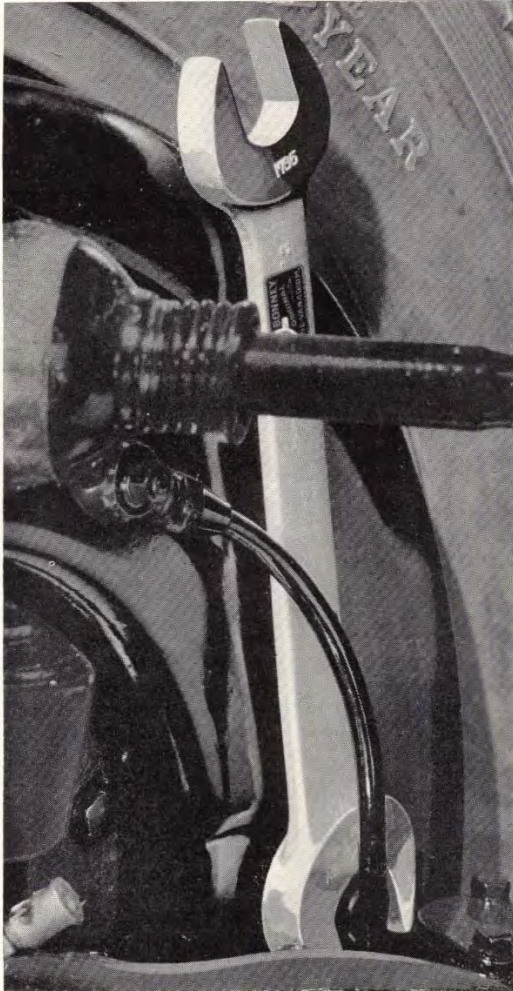
S. T. 852 is an offset screw driver for holding the anchor bolt while tightening the anchor bolt nut.



Brake Applying Wrench

Tool No. S. T. 762—All Bendix Brakes

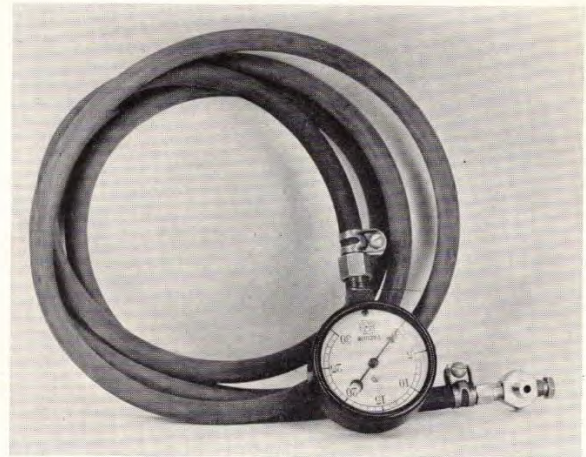
This tool is used when locating the two anchor pins on the Bendix Brake Assembly. The wrench has an opening designed to fit over the control lever and binding bolt at the shaft end of the lever.



Brake Anchor Bolt and Eccentric Nut Wrench—Large

Tool No. S. T. 738—Bendix Brakes

Chrome-vanadium end wrench. The large end can be used when adjusting brakes at anchor nut and the small end at eccentric nut. The wrench is 16" long which will allow sufficient leverage to tighten the anchor nut after the brake adjustment. Openings in wrench are $\frac{3}{4}$ " and $1\frac{1}{8}$ ".



Brake Selector Valve Gauge

Tool No. S. T. 929

Rotate pointer on instrument board brake selector dial to No. 1 position. Next, check the selector valve on the dash to be sure it is wide open or up against the stop in the No. 1 position. You can feel this stop by taking hold of the rear universal joints and turning to the left. If the pointer is not in its correct position with the valve wide open, loosen set screw in connecting shaft and adjust.

After pointer and valve have been properly synchronized, proceed to check the vacuum in each position.

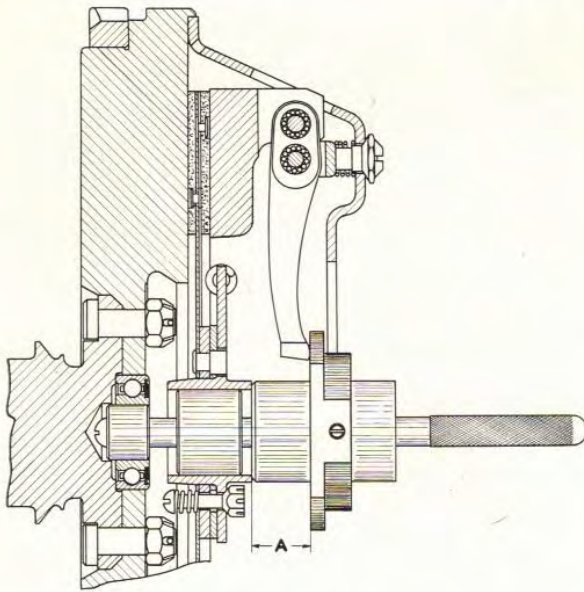
Remove $\frac{1}{8}$ " pipe plug from valve and screw in hexagon fitting furnished with gauge. This fitting has two $\frac{1}{8}$ " pipe openings to allow it to be pulled up tight with the assurance that one opening will be in such a position as to allow the hose with gauge to be attached. Back out one-quarter turn and screw $\frac{1}{8}$ " pipe plug in opposite hole.

With motor idling, the reading in No. 1 position should be approximately 20". The other positions of the valve will then provide the following ratios.

No. 1—20"	No. 3—10"
No. 2—15"	No. 4—5"

If maximum reading is not correct, remove cotter from end of stem projecting from center of valve body and adjust spring tension by turning knurled nut. The amount the valve raises off its seat is governed by this spring.

If the shaft has been sprung or the valve unit damaged in such a manner that it cannot be adjusted to approximately the above gauge reading, replace with new unit.



DIM. A
 $\frac{1}{4}$ FOR 443-640-45-740-45-640-45-903-4-5-6
 $\frac{21}{32}$ FOR 426-526-626-726-826
 $\frac{5}{8}$ FOR 900-1-2-1001-2
 $\frac{5}{8}$ FOR 1003-4-1100-1-2-3-4-5-6-7-8
 $\frac{11}{16}$ FOR 1200-1-2-3-4-5-6-7-8

Clutch Aligning and Release Lever Adjusting Fixture

Tool No. S. T. 901

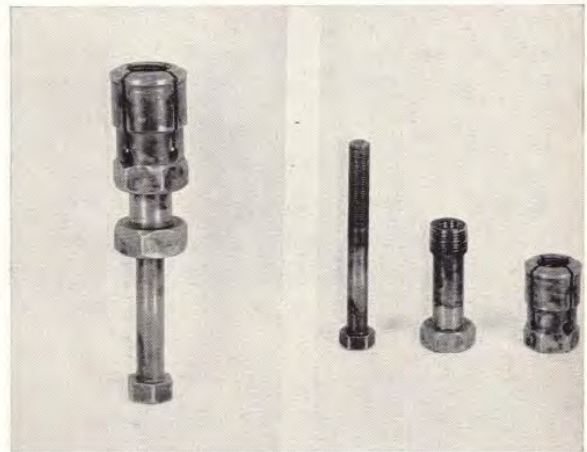
Mount the Clutch Plate and Cover Assembly to the Flywheel. Then use this aligning fixture. Place the small end into Flywheel Bearing, the second section inside the hub of the clutch driven member and adjustable collar against clutch spline hub. In checking the position of the clutch fingers the collar is set according to the dimension "A" illustrated.



Clutch Shaft Nut Spanner Wrench

Tool No. S. T. 836

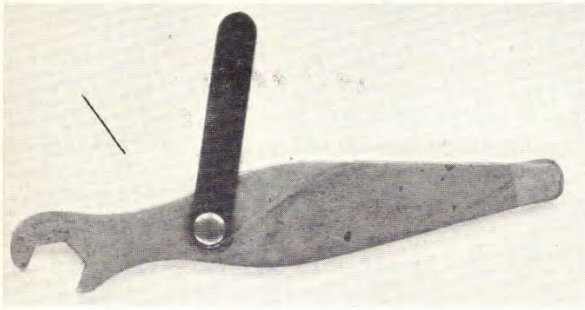
This wrench is necessary to loosen the clutch shaft bearing nut when adjusting the synchro-mesh transmission.



Clutch Shaft Flywheel Bearing Puller

Tool No. S. T. 764

To use, dismantle and place puller in bearing, then expand to size and screw in bolt against the end of crankshaft. This will remove the bearing very easily. With the use of this puller, the removal of the flywheel to change the bearing is eliminated.



Distributor Wrench

Tool No. S. T. 868—905-6-1005-6-1107-8

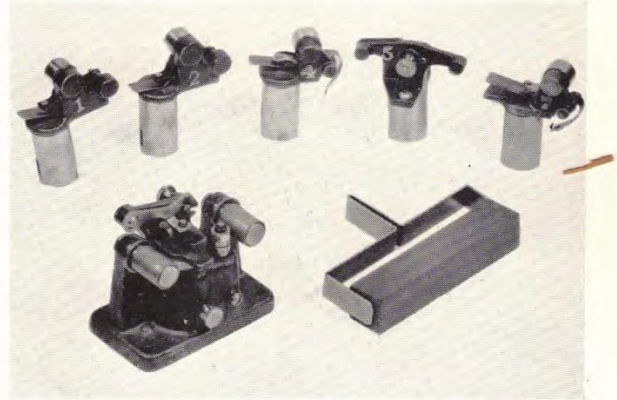
This is used to adjust the make and break point in the distributor. It is designed especially for Auto-Lite Distributor.



Distributor Breaker Point Wrench

Tool No. S. T. 739
(North-East only)

It is essential that the two points be set accurately. Tool No. S. T. 739 is a special drop forged wrench for adjusting North-East distributor points. The small end fits the contact points and lock nuts.



Distributor Point Dressing Tool

Tool No. S. T. 835—All Models

This tool is for re-servicing contact points. It gives a much better finish than can be secured with the ordinary file. It consists of a base, which supports the holders in which the contact arms are held, an oil stone and a set of holders for the various Delco and North-East contact arms.

Holder No. 1 Used on 136-236 Breaker Arm

Holder No. 2 Used on 126-226-326-426-336
Breaker Arm

Holder No. 4 Used on 526-443-1200-1203
Breaker Arm

Holder No. 5 Used on 526-443-1200-1203
Contact Point

Holder No. 7 Used on 626-726-826-901-900-1001-
4-1100-4 Breaker Arm

Holder No. 8 Used on 826-901-900-1001-4-1100-4
Contact Point

Holder No. 11 Used on 905-906-1005-6-1107-8-
1206-8 Breaker Arm

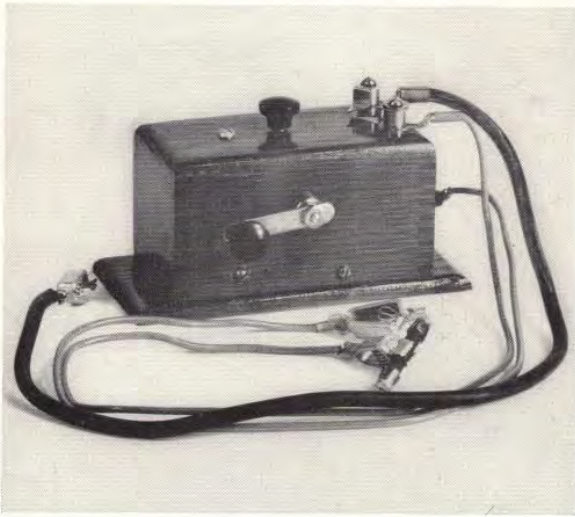
Holder No. 12 Used on 905-906-1005-6-1107-8-
1206-8 Breaker Arm

Ignition Timing Master

Tool No. S. T. 935

The only positive way to time an engine accurately is while it is running. This can be accomplished only by knowing the exact position of the marking on the vibration damper. One wire from the lamp is connected to the spark plug ignition wire. The other to the ground and the light shows a flash which illuminates the vibration damper marking every time the current is delivered to the spark plug wire.

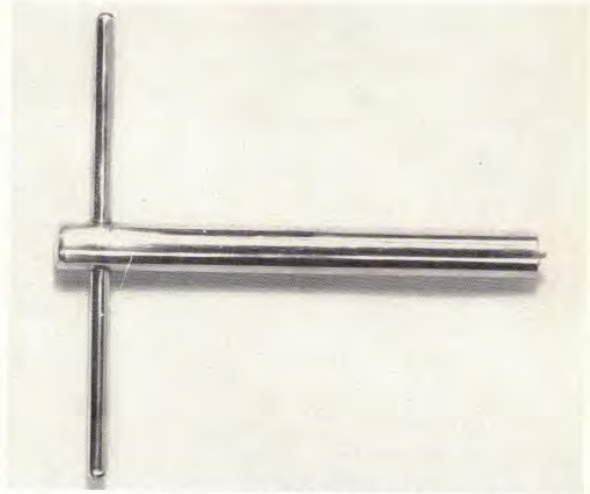




Ignition Coil and Condenser Tester

Tool No. S. T. 778

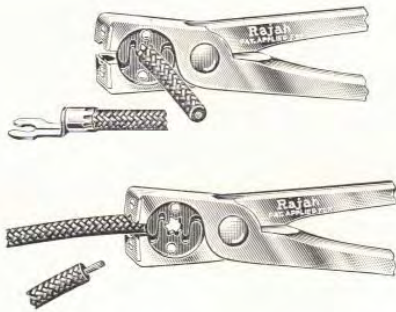
This coil and condenser tester is the most important tool in any shop. You can show the customer exactly what is wrong by attaching the coil tester wires to high tension system.



Distributor Cable Nut Wrench

Tool No. S. T. 918

This is used for removing the high tension cable from the distributor on the Auto-Lite distributor.



Ignition Cable Crimping Tool

Tool No. S. T. 946

This tool is designed for use with Twelfth Series ignition wirings and terminals. Its use does not require any solder and it, therefore, enables you to do a quicker and better job.

The tool has a cutting edge for removing just the right amount of insulation from the cable. The exposed wire strands are then bent back and the ignition cable is inserted into the terminal. Place the terminal in the tool with ferrule flush with the crimping jaws, compress the handle tightly and you crimp the terminal to the cable. You now have a positive and permanent connection.



Spark Plug Gap Adjusting Tool

Tool No. S. T. 927

This tool has two thickness gauges attached, one of twenty-five and one of thirty-three thousandths. The opening in the end of the tool is arranged so that in setting the gap to the correct thickness, the outer electrode can be properly set without touching the center electrode. If the old method of simply prying the electrodes apart in order to obtain the proper gap is used, very often the porcelain around the center electrode will be cracked and the efficiency of the plugs impaired. You will find this tool very handy and it will save its cost many times over.



Ignition Timing Light

Tool No. S. T. 724—All Models

It is important to time ignition accurately. S. T. 724 consists of two wires, one to be connected to the live terminal on the horn and the other to the primary lead on the distributor.

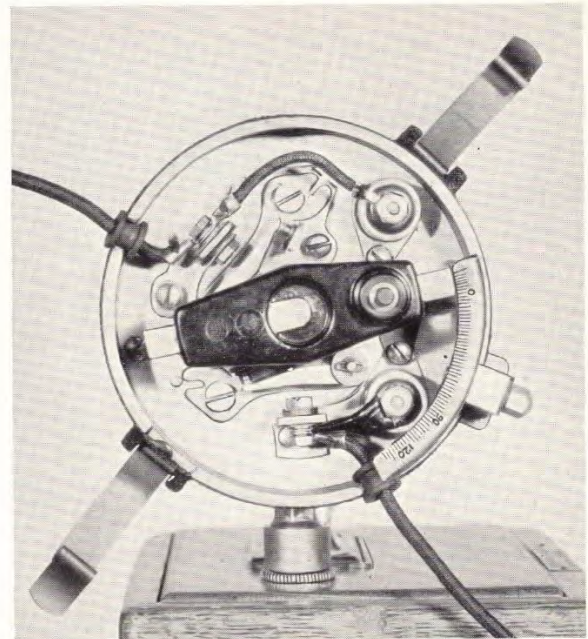
Clip timing device to crankcase at the edge of the starter hole and with spark advanced, turn motor by hand until flywheel mark (Spark No. 1) is directly in line with the pointer. The bulb connected with the terminal on the distributor should light indicating that the points have broken.



Motoscope

Tool No. S. T. 796

The motoscope is a scientific instrument that records engine troubles, reveals the true conditions of your engine and shows the mechanic exactly where the trouble lies without taking down any part of the engine.



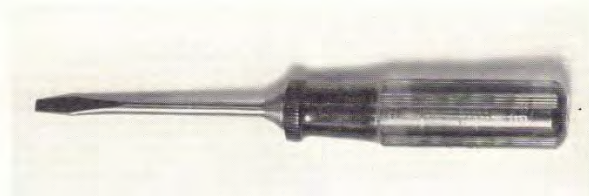
Distributor Synchronizer

Tool No. S. T. 907—Model 1001-3—1100-5

With this type of distributor a spark occurs every 45 degree rotation of the distributor shaft. Two separate ignition coils are used which are operated through two separate sets of contact points so arranged that first one set opens and fires one coil. This set then closes and the other set opens firing the other coil. As a result better engine performance is obtained especially at high speed than with the average single coil distributor.

To synchronize distributor type No. 5033450 synchronizing tool S. T. 907 can be used.

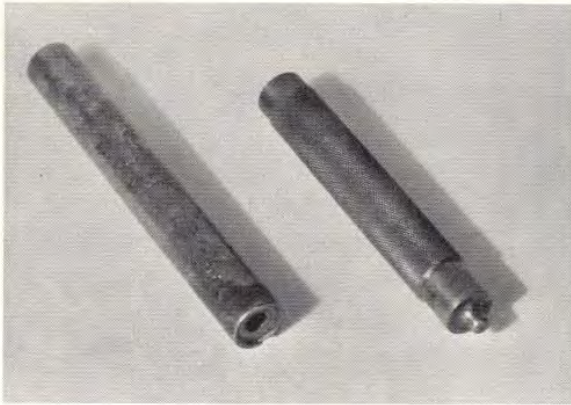
One set of contact points is stationary and the other set is mounted on a movable plate. The stationary contact set is adjusted first and the synchronizing is completed by adjustments to the movable set of points.



Neon Screw Driver

Tool No. S. T. 916

The Neon type screw driver has a transparent composition handle for testing spark plugs, and electrical wiring etc. The handle is guaranteed to stand as much abuse as a wooden handle and it is particularly useful for service salesman for locating electrical trouble.



Ignition Cable Terminal Crimping Tool

Tool No. S. T. 910

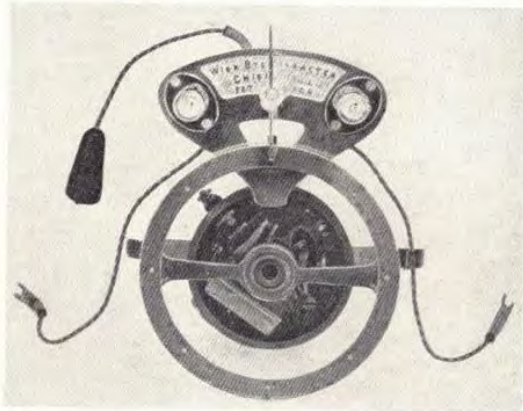
Place the female tool into vise to compress the male and female terminal, piece numbers 156625 and 156626 together. Remove just enough insulation from the cable. The exposed wire strands are then placed between both female and male terminals. Now crimp both terminals by tapping the male special tool with a hammer.



Distributor Breaker Point Thickness Gauge

Tool No. S. T. 657—All Models

A handy distributor and spark plug thickness gauge in a heavy case. Has two leaves .020" .025".



Distributor Synchronometer

Tool No. S. T. 913—All Models

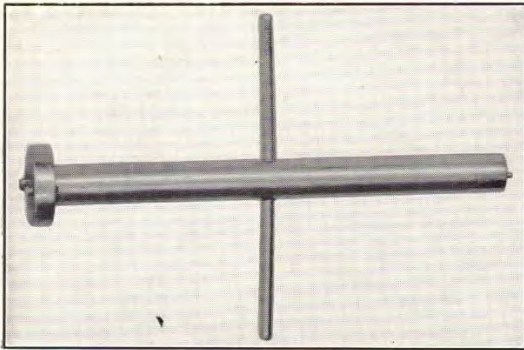
Correct synchronization of the contact breaker points is essential for a smooth running motor. The synchronometer will synchronize any Packard distributor with double breaker points. Perfect synchronization can only be made by checking all cam lobes for wear. If cam conditions were always perfect, dependable synchronizing would only require a pair of test lights. A satisfactory check up on cam lobe conditions is simply and easily made with the proper tool. The tool must be a 360 degree graduated circle in conjunction with some visible means for checking interruption of one set of points independent of the other as well as consecutive interruption.



Neon Tube Condenser Tester

Tool No. S. T. 945

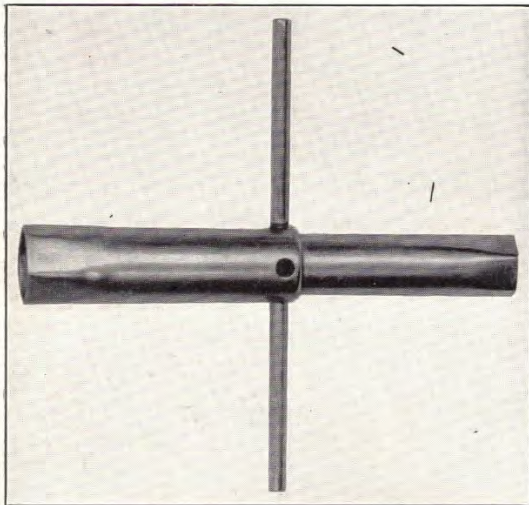
(Used only with 110 AC current.) A condenser tester is a necessity these days. The condenser should always be tested when work is done on the ignition system, or on a motor tune-up job. This tester will show leaks, shorts, and open circuits.



Carburetor Air Valve Wrench

Tool No. S. T. 751—726-826-740-840-901-902-903-904-1001-2

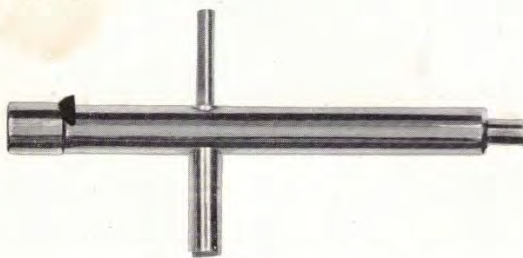
A tool for removing the piston air valve.



Carburetor Body Stud Socket Wrench

Tool No. S. T. 750—Models 726-740-826-840-901-903

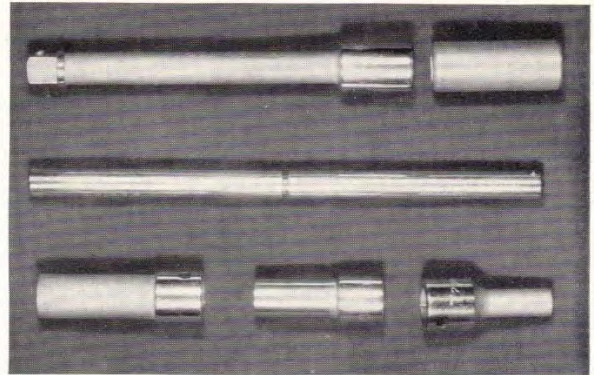
A wrench used to remove the gasoline strainer body stud on the 7th, 8th and 9th Series Carburetors.



Carburetor Wrench

Tool No. S. T. 741—Models 626-640

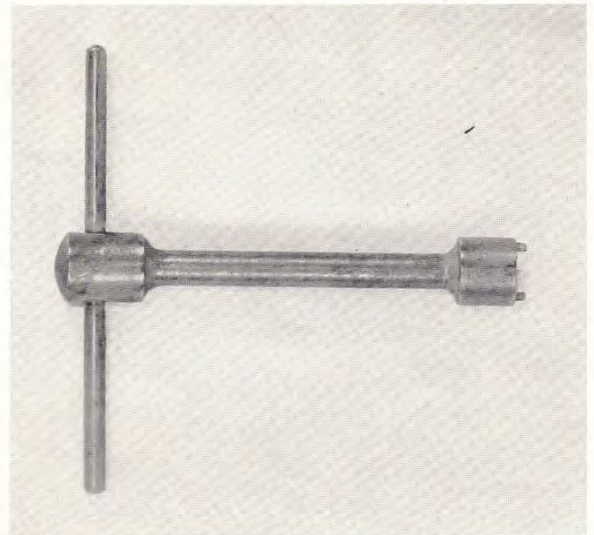
Everyone appreciates a practical wrench. In dismantling this type carburetor, this wrench will perform four different operations; removing top nozzle, spray needle seat, inlet needle seat bushing and strainer housing lug.



Carburetor Socket Wrenches

Tool No. S. T. 869—1001-2-1100-4-1200-5-905-6-1005-6-1107-8-1206-8

These wrenches are thin straight walled double broached hexagons—designed for the Stromberg carburetor and for removing main metering jets, pump valve, needle valve seat and screen located at bottom of float chamber. This is the standard tool used by the Stromberg Co.



Carburetor Air Valve Stem Wrench

Tool No. S. T. 820—903-904-1003-4

The size of the carburetor air valve stem has been changed on 903 model so it is necessary to have this wrench when removing it.



Cylinder Head Acorn Nut Wrench

Tool No. S. T. 222

This wrench designed for the cylinder head acorn nuts on the late models. Has a $\frac{3}{4}$ " opening.



Cylinder Compressometer

Tool No. S. T. 193—All Models

A compression gauge complete with connection and rubber tip. It is necessary to use a 200-pound gauge for accuracy. If a 100-pound gauge is used the actuating spring would soon take a set because of its being continually compressed too near its maximum limit.



Compressometer Adapter

Tool No. S. T. 926

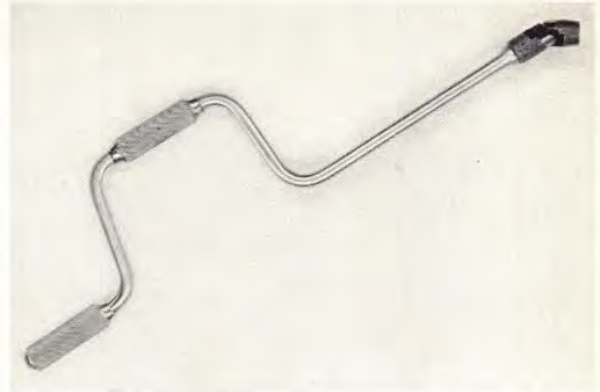
Used on the 905 to 1208 twelve cylinder cars. This short adapter is needed for checking the compression on these cars and is especially adapted to take a reading on No. 6 cylinder of the right bank. This is used with compressometer S. T. 193.



Cylinder Base Nut Wrench

Tool No. S. T. 170—All Later Models

It is possible to use this wrench on all of the cylinder base nuts on the right hand side of the motor. When working the center base nut back of the distributor shaft, it is necessary to work on both sides of the shaft alternately. Turn the wrench over every time a new hold is taken on the nut.



Special Universal Speed Wrench

Tool No. S. T. 875
(Twelve)

This wrench is used for removing exhaust and intake manifold, front cover, transmission, clutch and water pump.

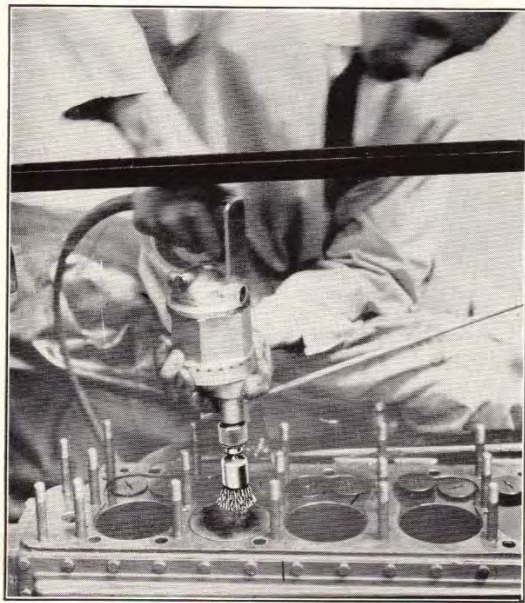
It was designed specially for length and outside diameter of the socket.



Carbon Brush—Flared Type

Tool No. S. T. 204—All Models (Iron Head)
Tool No. S. T. 954 (For Aluminum Head)

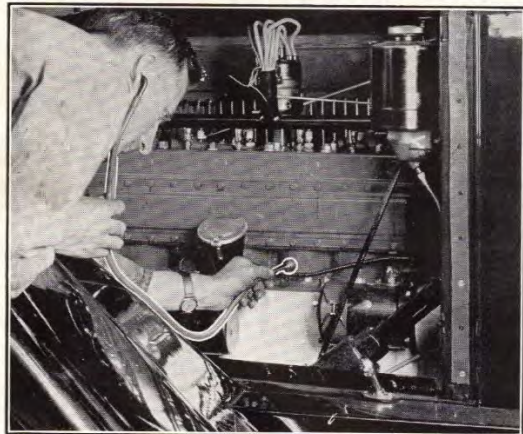
A special brush designed to clean carbon from the corners. It should not be used on flat work but in conjunction with Tool No. 205. A straight type brush is designed for that purpose.



Carbon Brush

Tool No. S. T. 205—All Models (Iron Head)
 Tool No. S. T. 953 (For Aluminum Head)

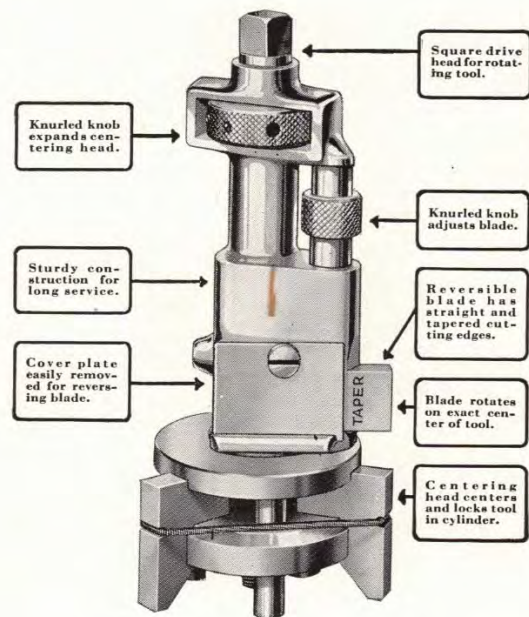
This brush is made specially for removing carbon from flat surfaces. It is a real time saver.



Locophone

Tool No. S. T. 165

A practical instrument to assist you in locating and diagnosing unusual motor noises.



Cylinder Chamfering Tool

Tool No. S. T. 885—All Models

This tool is set, centered and held in the cylinder itself, so that the exact shape and contour of the cylinder bore is accurately maintained. The expanding head is stationary, the blade rotating independently of the expanding head, providing a velvet finish and eliminating chatter.



Cylinder Head Nut Wrench

Tool No. S. T. 761—(5/8" Opening)

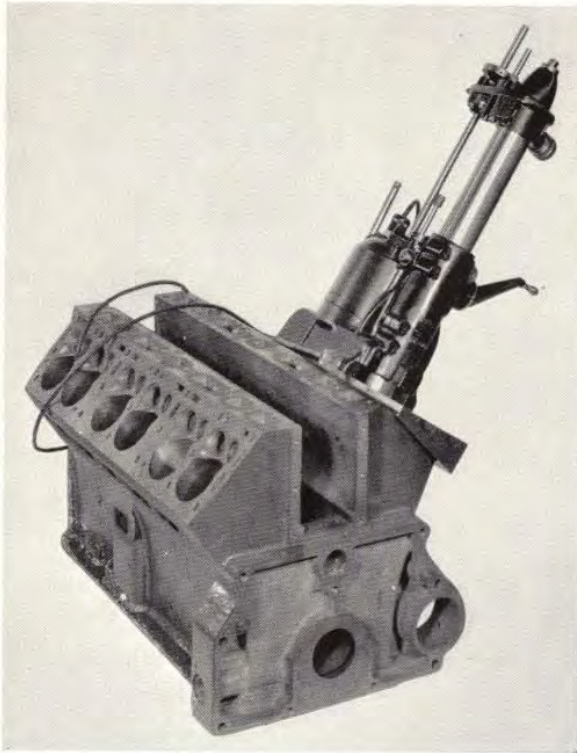
This cylinder head nut wrench has sufficient leverage and is designed for the final tightening of all nuts after the job has been assembled and the motor warmed up.



Gasoline Line Frame Junction Wrench

Tool No. S. T. 783—826-840

This wrench is used for removing the gasoline line on the 826-840 models at the rear right side of frame.

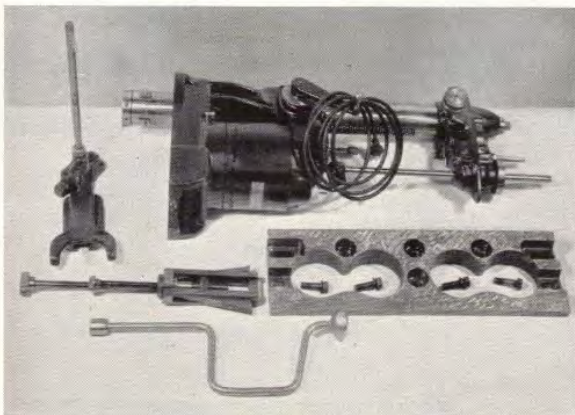


Boring Bar Adapter Plate

Tool No. S. T. 905 Boring Bar
Tool No. S. T. 1426 Adapter Plate

Boring Bars should be used on all cylinders. These will square the bore with the crankshaft and make it unnecessary to remove the motor from the frame for reconditioning the cylinder block.

We have also designed a container that will fit in the bottom of the bore which will stop the metal from going into the crankcase.



Piston Pin Bushing Reamer Wrench

Tool No. S. T. 716

The combination reamer wrench has a left and right hand thread also gripping effect on any reamer, thereby preventing the wrench from slipping off.



Piston Pin Bushing Reamer

Tool No. S. T. 832—All Models ($\frac{1}{8}$ " Pin)
Tool No. S. T. 833—All Models ($\frac{3}{4}$ " Pin)

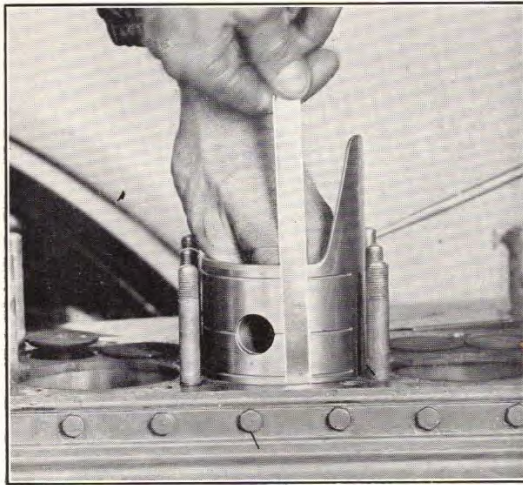
An expansion reamer for wrist pin bushings. An extremely accurate reamer having adjustment and expanding blades.



Feeler Gauge Holder

Tool No. S. T. 153

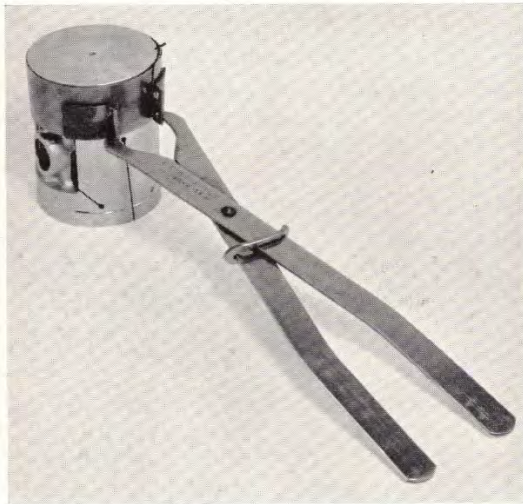
Quick replacement of the feeler gauge is the big feature of this holder. It is not necessary to punch a hole in replacement strips when using this holder.



Piston Feeler Strip

Tool No. S. T. 646 (.0015)
 Tool No. S. T. 647 (.002)
 Tool No. S. T. 166 (.003)
 Tool No. S. T. 167 (.004)
 Tool No. S. T. 648 (.005)
 Tool No. S. T. 697 (.006)

We are furnishing feeler strip by the running foot, as that is the most economical way that it can be supplied. You can then cut it to any desired length.

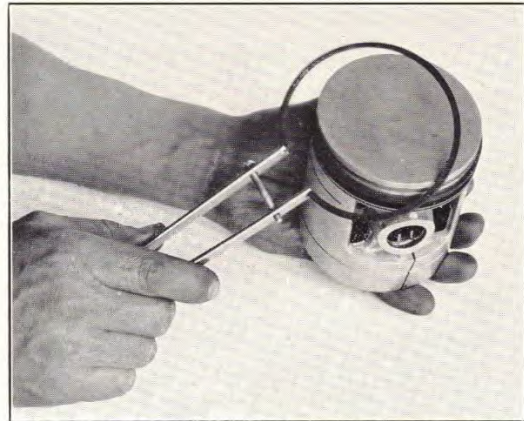


Piston Ring Compressor

Tool No. S. T. 774—All Models Except Twelve
 Detail Parts For S. T. 774

S. T. 1389—Compressor Tongs
 S. T. 1390—Compressor Band

The Piston Ring Compressor Band is made of tempered steel and can be used on any size piston. The long tongs should be placed into two lower holes in band which gives a powerful leverage. The handle has a locking device which holds compressor securely in position.



Piston Ring Expander

Tool No. S. T. 197—All Models

For removing and replacing piston rings. The expander holds the rings at slot opening. This type of expander does not injure the edges and can be used on any Packard piston ring. Increased expansion can be obtained by adjusting the set screw.



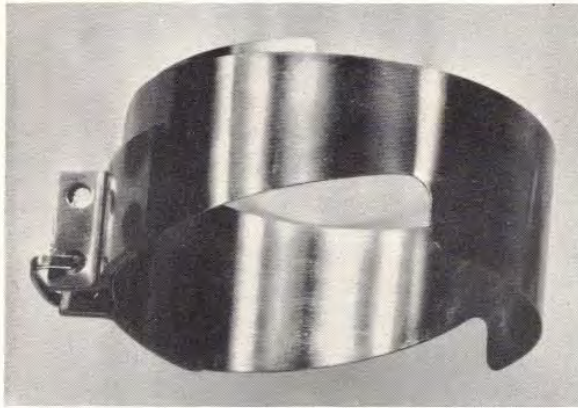
Cylinder Head Nut Wrench T Handle.

Tool No. S. T. 224— $\frac{3}{4}$ " Opening)
 Tool No. S. T. 225— $\frac{5}{8}$ " Opening)

A long T handle wrench long enough to supply the necessary leverage. It is a Bonney CV wrench which is a guarantee of strength. There is sufficient weight in the handles so that after the nut is loosened it may be spun off.

Universal Joint Cylinder Head Nut Wrench

Tool No. S. T. 202— $\frac{5}{8}$ " Opening)
 Tool No. S. T. 228— $\frac{3}{4}$ " Opening)



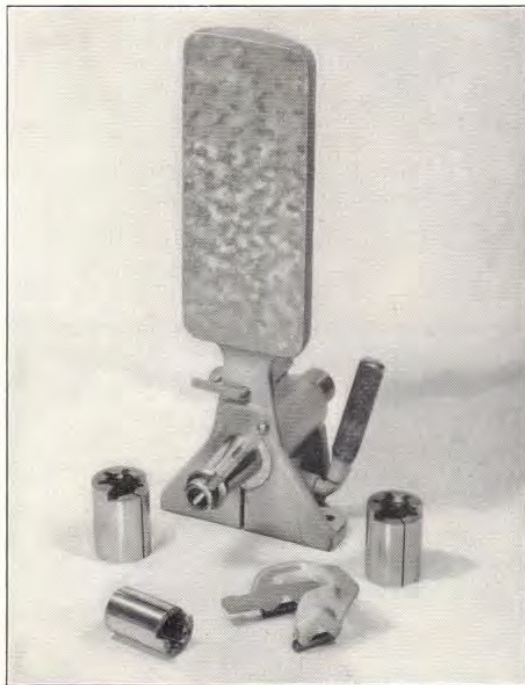
Piston Ring Compressor (Without Tongs)

Tool No. S. T. 872—Twelve

Piston Ring Compressor Tongs

Tool No. S. T. 1389—All Models

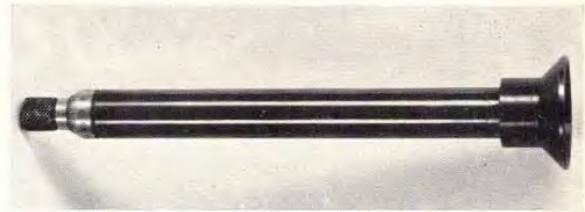
The bands are made of tempered steel with special locking device on handle which holds compressor securely in position.



Connecting Rod Aligning Jig

Tool No. S. T. 758—All Models

Connecting rod aligning fixture has adjustable arbor sleeves for Six, Eight and Twelve Models. The connecting rod piston or pin can be aligned against surface plate.



Valve Depth Gauge—Twelve

Tool No. S. T. 912

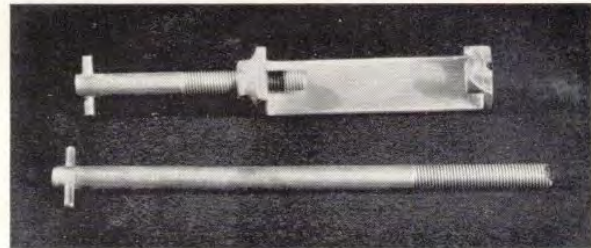
It is necessary in refacing the valves on the Packard Twelves to maintain the proper clearance between the valve locker lever and the valve stem, and in order to do this the equivalent of the stock removed from the valve seat must also be removed from the end of the valve stem. In order to determine this clearance, which should not be more than .060 nor less than .020, a depth gauge is required.



Distributor Housing Anchor Bolt Wrench

Tool No. S. T. 909—All Models

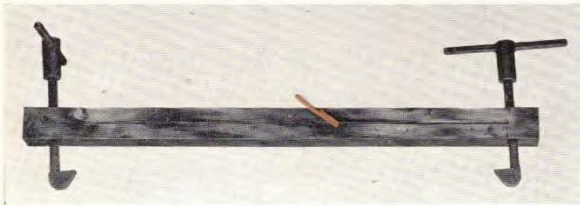
This is a special wrench and is required when retiming the distributor. You will find that the cap screws are so close to the distributor base that an ordinary wrench will not fit.



Motor Valve Rocker Lever Piston Release Lever Tool

Tool No. S. T. 911—Twelve

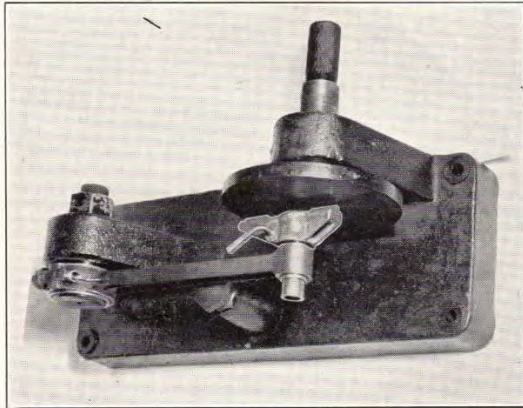
A special tool to release the rocker lever housing piston. This tool is placed under the rocker lever piston and places a strain on the piston; this releases the oil pressure. After the bleeder valve has been released from its seat this will allow you to obtain the proper clearance for grinding valves on the Twelve.



Motor Support

Tool No. S. T. 919

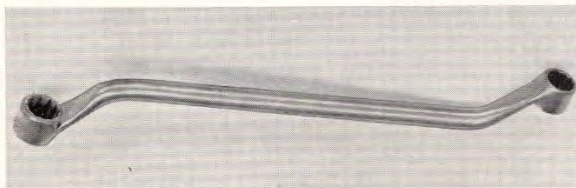
This tool is designed for use with Tenth and Eleventh Series cars. It is placed in position at the rear of the motor across the frame so that the motor rests on the support while the transmission assembly is being removed. It is essential with the present type of rear motor suspension to use a support at the rear of the motor whenever the motor and transmission are disconnected.



Connecting Rod Piston Pin Aligning Fixture

Tool No. S. T. 731 (Used with $\frac{7}{8}$ " Pin)

This fixture is accurately ground. It fits over the piston pin and provides adequate surface to line up against the surface plate on the aligner.



Cylinder Head Nut Wrench

Tool No. S. T. 908—All Models

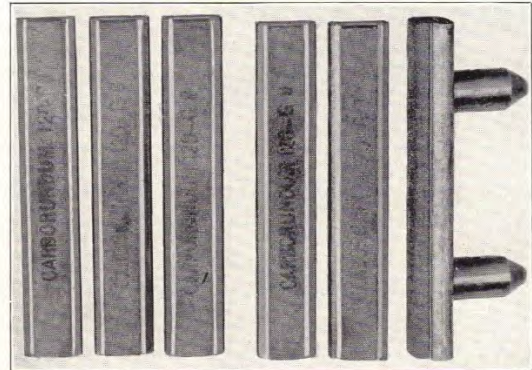
Cylinder head nut wrench is used for removing the nut located between the two coils. Without this wrench, this nut is very hard to get at. The wrench can also be used for tightening cylinder head nuts on the Eight and the Twelve motors.



Connecting Rod and Piston Assembling Pin

Tool No. S. T. 726—All Models

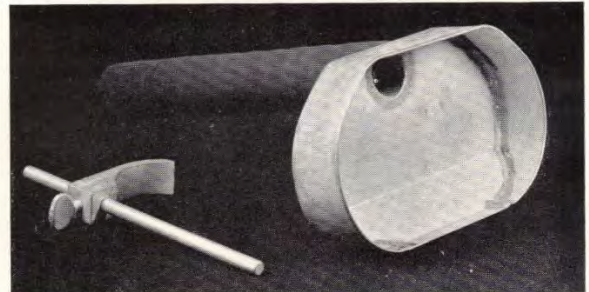
It is somewhat difficult to assemble or dis-assemble the piston and pin with the connecting rod. Good results will be obtained only by having piston pin parallel with connecting rod.



Cylinder Grinder Stones (Hutto)

Tool No.		Tool No.	
S. T. 629	$3\frac{3}{8}$ " 120 Grit	S. T. 643	$3\frac{1}{2}$ " 36 Grit
S. T. 630	$3\frac{1}{2}$ " 120 Grit	S. T. 644	$3\frac{3}{8}$ " 36 Grit
S. T. 641	$3\frac{1}{2}$ " 80 Grit	S. T. 711	$3\frac{3}{16}$ " 120 Grit
S. T. 642	$3\frac{3}{8}$ " 80 Grit	S. T. 712	$3\frac{3}{16}$ " 80 Grit
		S. T. 713	$3\frac{3}{16}$ " 36 Grit

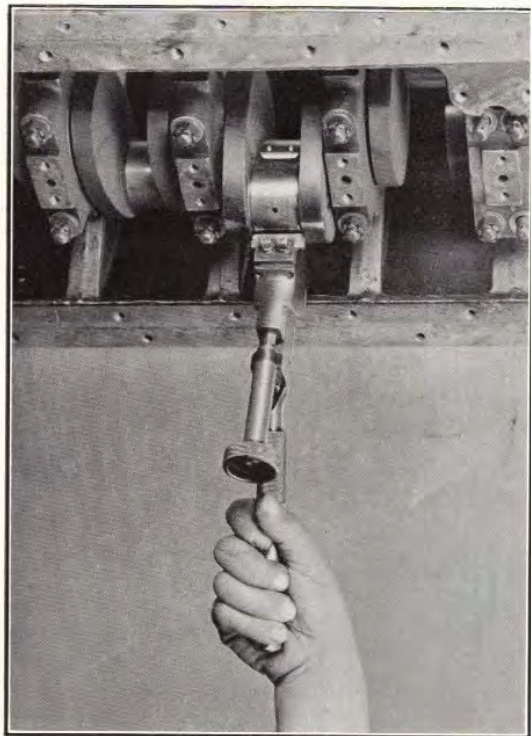
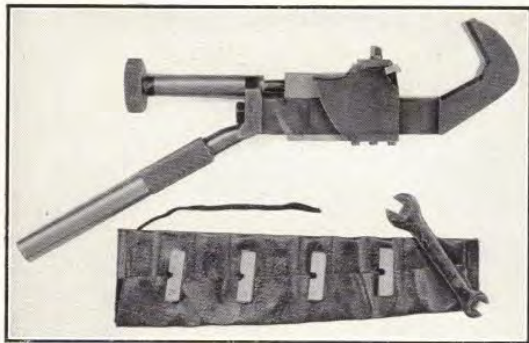
It is possible to cover the entire line of Packard Cars with the Cylinder Grinder by merely changing stones. When it is desired to take out more than .001" or .002" time can be saved by using the coarser 80 grit stones, leaving .001" to .002" to clean up with the finishing stone. For taking out .010" or more, the 36 grit roughing stones should be used leaving at least .002" to clean up with the finishing stone.



Cylinder Drain Cup

Tool No. S. T. 904—Model Twelve only

It is designed to catch and carry away all the kerosene, dirt, and grindings removed from the cylinder bore. It eliminates the danger of kerosene and these grindings getting into the bearings or around the motor crankcase. It is quickly and easily attached, and is less work than packing the crankcase with rags. This new tool assures a more satisfactory job.



Crank Pin Returning Tool

Tool No. S. T. 707
Tool No. S. T. 395—Twelve

Crank Pin Cutting Oil

Tool No. S. T. 706—Quart

Connecting rod crank pins that are badly worn out of round or scored, can be resized without removing crankshaft from motor. When this tool is used, first apply Packard special crank pin cutting oil and place the tool on crank pin. Turn up the knurled adjusting knob until the cutting blade barely touches the crank pin and have a helper slowly turn the crankshaft with the starting crank so the operator can locate the proper position to hold the tool so that it will clear the inside of the motor.



Crankcase Main Bearing Nut Wrench

Tool No. S. T. 192—($\frac{5}{8}$ " Opening)
Tool No. S. T. 721—($\frac{3}{4}$ " Opening)
Tool No. S. T. 950—Twelve ($\frac{11}{16}$ " Opening)

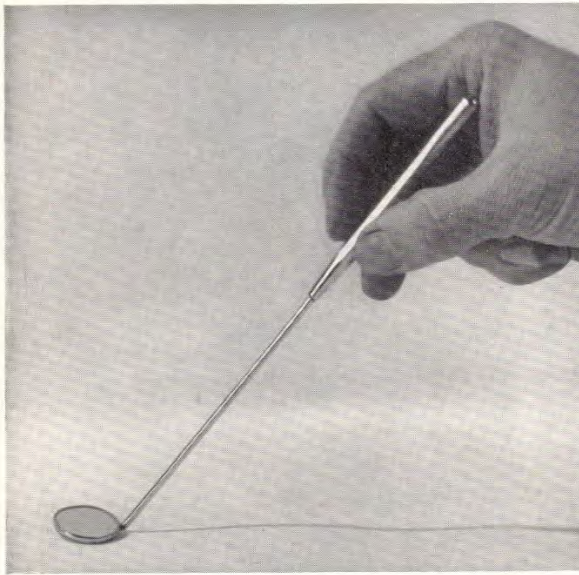
The outside of the socket is ground off to permit use on the rear main bearing cap. The handle is just the right length for working under the motor with the car jacked up on Packard motor jacks.



Connecting Rod Nut Wrench

Tool No. S. T. 191—All Models ($\frac{9}{16}$ " Opening)
Tool No. S. T. 192—All Models ($\frac{5}{8}$ " Opening)
Tool No. S. T. 950—Twelve ($\frac{11}{16}$ " Opening)

The wrench is made of chrome-vanadium and will stand up under heavy stress. The edge of the socket is ground off for clearance so as to provide the maximum hold on the nut.

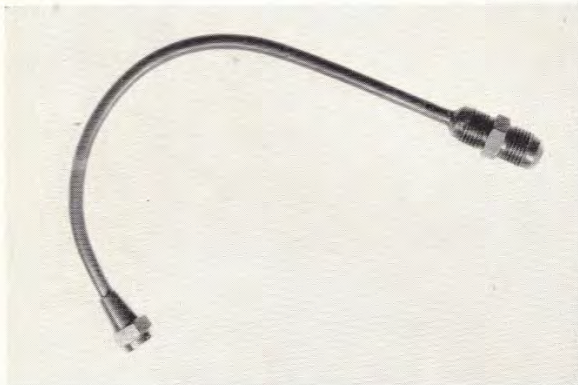


Camshaft and Oil Pump Gear Mirror

Tool No. S. T. 896—Twelve

The mirror is for timing the oil pump and camshaft gear assembly.

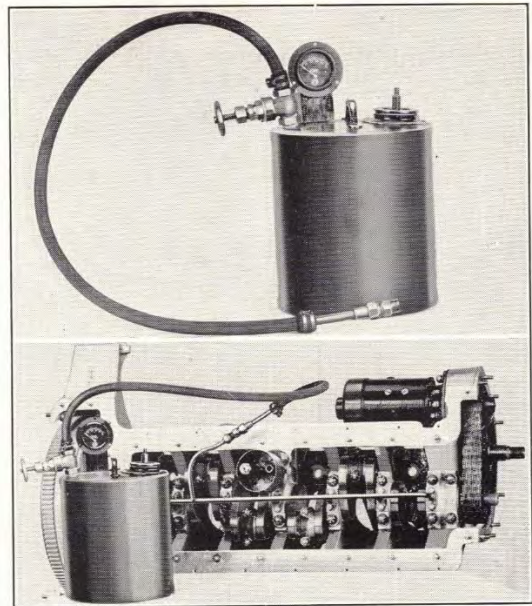
After the front camshaft bearing assembly is removed place the mirror inside the motor and locate the two teeth marked "oo;" these are at the back of the camshaft gear. Mark these with a red pencil on the opposite side of the gear, then locate the tooth marked "o" on the oil pump drive gear and line up the marks. If the gears are not properly placed, the distributor shaft will not drop into its proper spline.



Oil Test Connection

Tool No. S. T. 1429—Models 905-6-1001-3-6-1100-3-8-1200-3-8

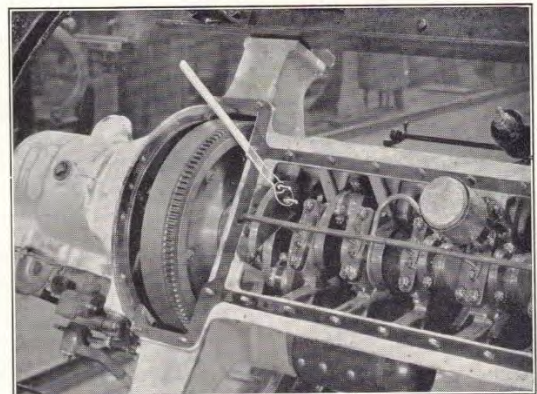
A special connection has been designed and is now carried under S. T. 1429. This will assist in making a main bearing oil test. By fastening the new connection to the instrument oil gauge tube at the rear end of the crankcase, the other end of the tube is fastened to the oil pressure test tank.



Lubricating System—Test Tank

Tool No. S. T. 109—All Models

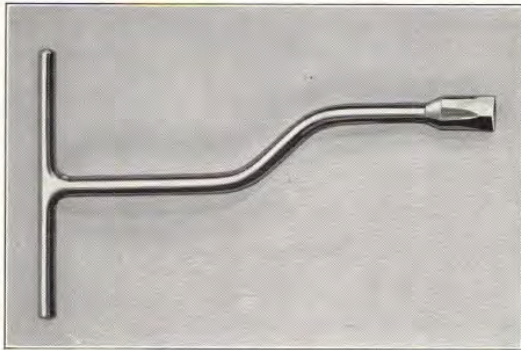
Every Packard Service Station should have this equipment to do motor bearing work correctly. Complete information on the use of this equipment is carried in Technical Letter No. 1746.



Camshaft Rear Bearing Cover Plate Wrench

Tool No. S. T. 639—All Models

A "C. V." chrome-vanadium wrench that will reach and tighten the screws that hold the rear camshaft bearing cover plate. It is so designed that it will always take a new bite. This will more than pay for itself on the first job.

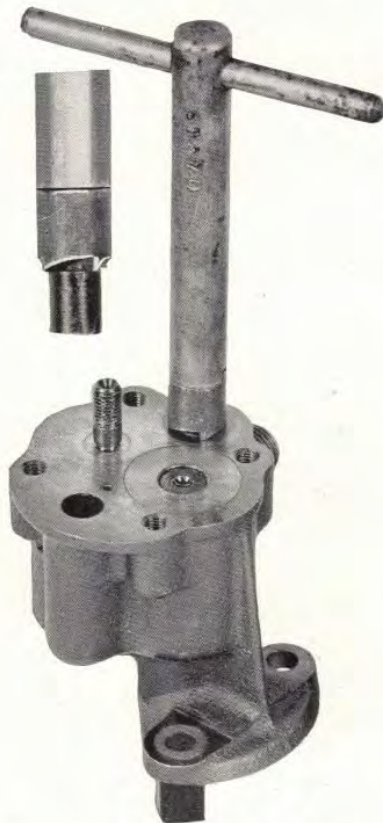


Oil Pump Wrench

Tool No. S. T. 740

(Used without removing lower half)

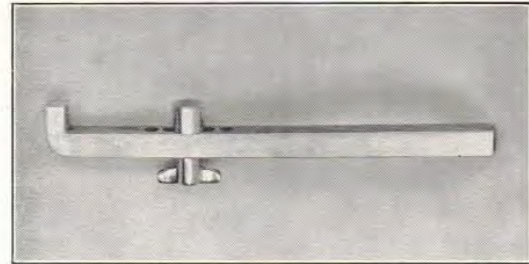
No distributor or dealer should be without this oil pump wrench. The oil pump can be removed without taking off the lower half of the crankcase.



Oil Pump Relief Valve Rescater

Tool No. S. T. 670—All Models

Noise in the oil pump is usually caused by a pounded out relief valve seat. The seats may be reconditioned with this tool and put into service again.

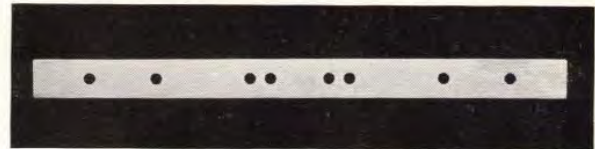


Flywheel Cranking Tool

Tool No. S. T. 801

(Not Used on 900-901-1001-1100-1108-1200-1208)

This is a special adjustable wrench for turning the flywheel when taking up the main and connecting rod bearings. It will save considerable time over the old method of using the screwdriver on the teeth of the flywheel and prevents the crankcase and teeth of the flywheel from becoming marred.



Cylinder Port Hole Covers

Tool No. S. T. 871—Twelve

These covers should be used when the exhaust and intake manifold are removed. They will prevent parts being dropped into the cylinder exhaust and intake ports.

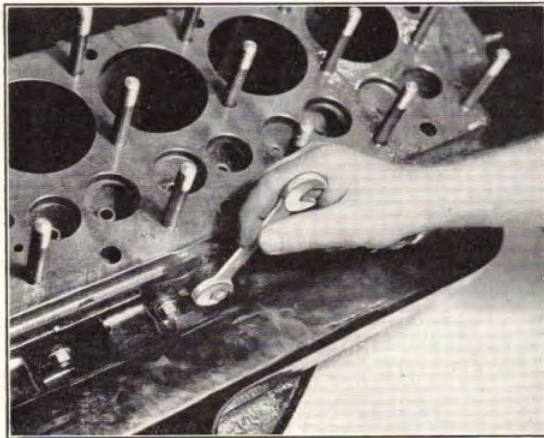


Cylinder Head and Shock Absorber Wrench

Tool No. S. T. 797—826-840-901-903-1001-4-1100-4-1200-4

Use S. T. 821—900 Model Shock Absorber

This box socket, offset wrench has sufficient leverage for removing and tightening Lovejoy shock absorber nuts on the inside of the frame. It will also remove and replace the cylinder head nuts. This wrench has tremendous leverage and works freely in tight places.



Exhaust Manifold Nut Wrench

Tool No. S. T. 176—All Models

This wrench will fit the exhaust manifold nuts on the Packard Six and Eight models.



Piston Lubricator Valve and Exhaust Pipe Nut Wrench

Tool No. S. T. 763—($\frac{1}{2}$ " and $\frac{3}{8}$ " Opening)

This double hex wrench will remove the two rear exhaust pipe bolts and nuts, also piston lubricator nuts which are usually hard to remove with ordinary standard wrenches. This special wrench permits quick and easy removal.



Oil Pump Pressure Relief Valve Body Nut Wrench

Tool No. S. T. 925—Models 905-1005-1100-1108

This is of a special design and will save considerable time in removing the nut for adjusting the oil pressure.



Vibration Damper Nut Wrench

Tool No. S. T. 947

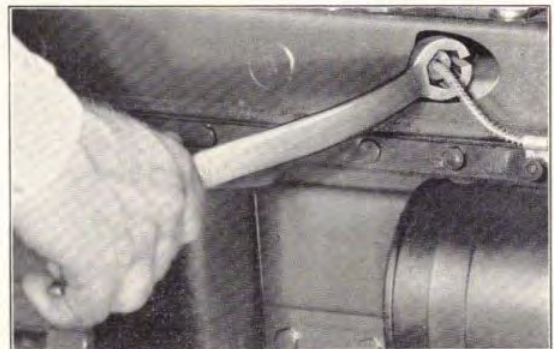
You will require this tool for removing the vibration damper nut on Twelfth Series cars. It is a heavy duty wrench and will enable you to do this job without removing the radiator.



Vibration Damper Nut Wrench

Tool No. S. T. 855—900

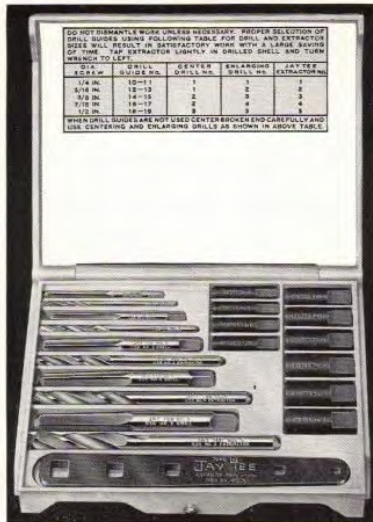
With this tool it is not necessary to remove the radiator to remove the vibration damper nut.



Combination Spark Plug, Anchor Bolt, and Thermometer Nut Wrench

Tool No. S. T. 734 $\frac{3}{4}$ " Hex.
Tool No. S. T. 737 $\frac{5}{8}$ " Hex.

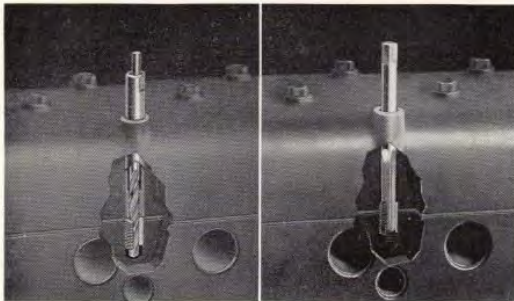
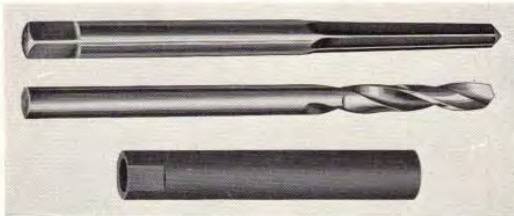
The small end of combination wrench was especially designed so that when removing cylinder head thermometer tube flange nut you can always take a new bite.



General Utility Extractor

Tool No. S. T. 831

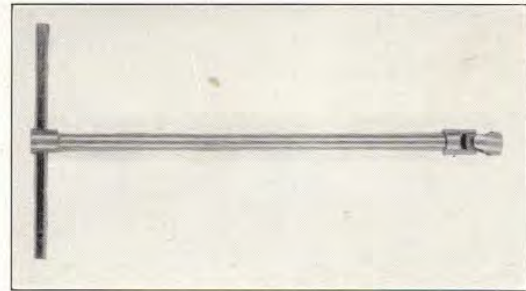
This set consists of drills, drill guides, extractors, and a wrench for removing all diameter screws, $\frac{1}{4}$ " to $\frac{1}{2}$ ". Can be used to 1" depth without dismantling. Box is die-cast aluminum.



Cylinder Head Stud Extractors

Tool No. S. T. 830—All Models

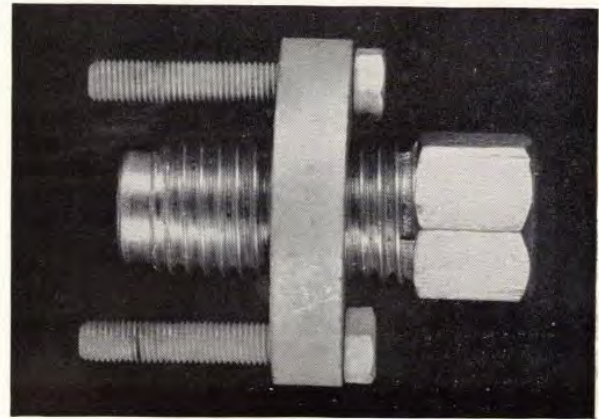
Do not remove cylinder head. Use drill guide for drilling broken end. Tap in extractor so flutes grip firmly and screw out.



Inlet and Exhaust Manifold Socket Wrench

Tool No. S. T. 781—826-840-1001-4-1100-5-1200-4

This universal joint wrench gives maximum speed with good leverage for removing intake and exhaust manifold nuts on 826-840 models.



Vibration Damper Puller

Tool No. S. T. 856—900-1200-1204

This puller will remove the vibration damper without removing radiator.



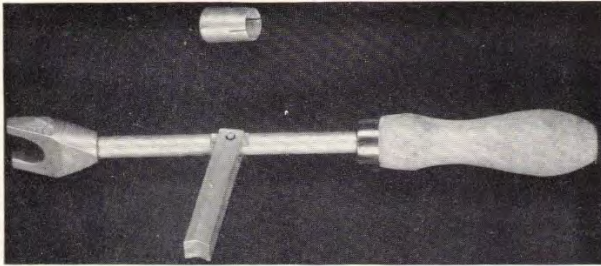
Water Pump Packing Nut Wrench

Tool No. S. T. 805— $1\frac{1}{2}$ "—All Models Except 726-826-901-900

Tool No. S. T. 802— $1\frac{5}{16}$ "—726-826-901-900-1001-4-1100-4-1200-4

Tool No. S. T. 878— $1\frac{7}{16}$ "—905-906-1005-6-1107-8-1206-1208

This water pump wrench is furnished in two sizes and is designed to swing clear of the water pump housing when tightening water pump gland nut.



Valve Guide Lock Ring Replacer

Tool No. S. T. 867—Twelve

This tool is used for replacing valve guide lock ring and is simple to operate:

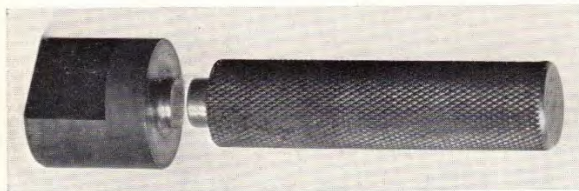
1. Place lock ring on the top of the small end of the bushing.
2. Place bushing and ring on the valve guide.
3. Place the tool with the saddle on the valve guide on the bushing and with the leverage against the eye force the lock ring into place.



Crankcase Front End Bolt Wrench

Tool No. S. T. 172—(1/2" Opening)

A chrome-vanadium wrench with a special offset head and extra long handle to simplify the otherwise tedious job of holding the crankcase front end cap screws for the Eight motor.



Valve Cover Punch and Anvil

Tool No. S. T. 744

In order to assist the service man in making a neat and efficient replacement of the cork gasket attached to the valve chamber cover, we have designed a special anvil and punch.



Valve Tappet Wrench

Tool No. S. T. 216

Long handle tappet wrenches for adjusting tappets.



Valve Puller Jaw

Tool No. S. T. 1398

This clamp is used with S. T. 863 crankcase rear bearing cap puller to remove frozen valves and is very handy when the valves are stuck tightly in the valve guides.



Cylinder Head Lifter

Tool No. S. T. 121—All Models

For use on all Packard cars. The need for cylinder head lifters is especially apparent for the Packard Eight and Twin Six because of its weight and over-all length. Can also be used as a stand for cylinder head when removing carbon from head.



Valve Rocker Lever Holder

Tool No. S. T. 879—Twelve

In grinding valves, it will be necessary to use S. T. 879 rocker lever wedges between the rocker lever and the crankcase. This will hold the rocker levers away from the valve so that clearance will be obtained. To install the wedge, it is necessary to bleed the automatic take-up piston in the rocker arm assembly. This is done by holding the bleeder valve away from its seat to allow oil to escape so that the lever can be pushed back. Use a round piece of $\frac{1}{8}$ " stock and insert it in the rocker lever bleeder cap hole. Do not attempt to force the valve.



Air Valve Grinder

Tool No. S. T. 752

An 18 ounce machine operated by air pressure with adjustable control regulating speed from zero to three thousandths, one quarter revolution per minute. This is a very smooth running machine for grinding and finishing valves and will complete the job in half the usual time. It is guaranteed for one year.



Valve Reseating Equipment

Tool No. S. T. 952

Precision tools for reseating valve seats accurately.

The valve seat cutters are made of a special alloy steel, heat treated for proper hardness to stand up on valve seat reaming. These cutters are nicked tooth feature enabling the sharp teeth to bite right into the hard glazed surface of the valve seat.

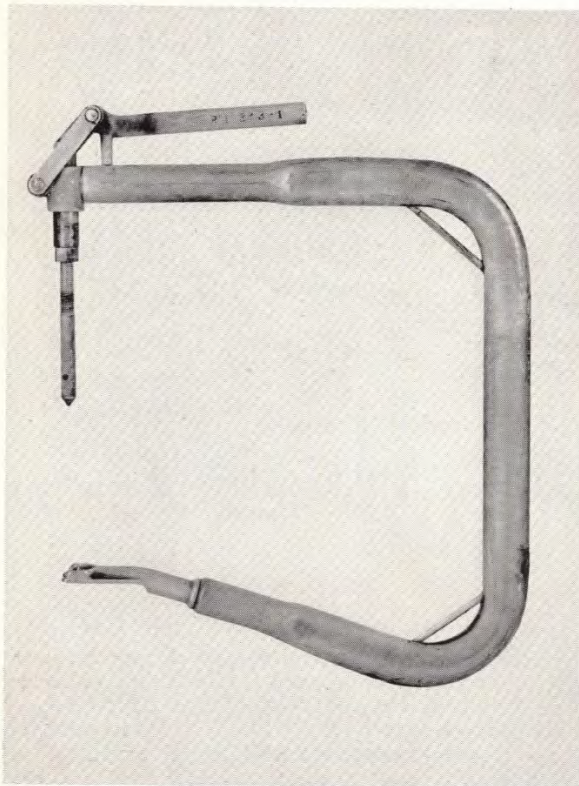
The pilots are placed in position with a slight pressure. They are anchored rigidly in worn part of the valve guide so they are sure to be properly centered and concentric with the valve seat.

The cutters to be used are placed on a sleeve and this sleeve slips over the tapered pilot. It rotates thereon. The wrench which has notches fits into the slots on the sleeve.

When the finishing cutting is done, slip the valve seat indicator on the pilot and check the valve seat.

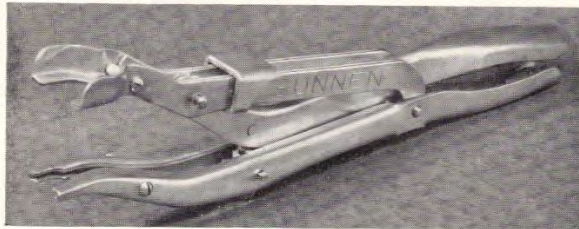
- S. T. 1444 Replacement Cutter— $1\frac{9}{16}$ "
- S. T. 1445 Replacement Cutter— $1\frac{3}{4}$ "
- S. T. 1446 Replacement Cutter— $1\frac{7}{8}$ "
- S. T. 1447 15° Nicked Tooth Cutter— $1\frac{7}{8}$ "
- S. T. 1448 45° Nicked Tooth Cutter— $1\frac{7}{8}$ "
- S. T. 1449 45° Finishing Cutter— $1\frac{7}{8}$ "
- S. T. 1450 75° Throat Cutter— $1\frac{11}{16}$ "
- S. T. 1451 75° Throat Cutter— $1\frac{1}{2}$ "
- S. T. 1452 75° Throat Cutter— $1\frac{3}{8}$ "
- S. T. 1409 Valve Seat Indicator
- S. T. 1425 Tapered Pilot— $\frac{11}{32}$ " +.000
- S. T. 1406 Tapered Pilot— $\frac{11}{32}$ " +.001
- S. T. 1407 Tapered Pilot— $\frac{11}{32}$ " +.002
- S. T. 1408 Tapered Pilot— $\frac{11}{32}$ " +.003
- S. T. 1410 Tapered Pilot— $\frac{11}{32}$ " +.004
- S. T. 1411 Tapered Pilot— $\frac{11}{32}$ " +.005

- Tapered Sleeves
- Wrench for Tapered Sleeves
- Ratchet Wrench
- Valve Seat Driver
- Ring Tool Fixture
- Knockout Pin for Removing Sleeves



Valve Lifter

Tool No. S. T. 826—826-840-900-901-903-1001-4-1100-5
 Lifter for the 8th and 9th series valves. It is considerably faster than the hand type which we have been recommending.



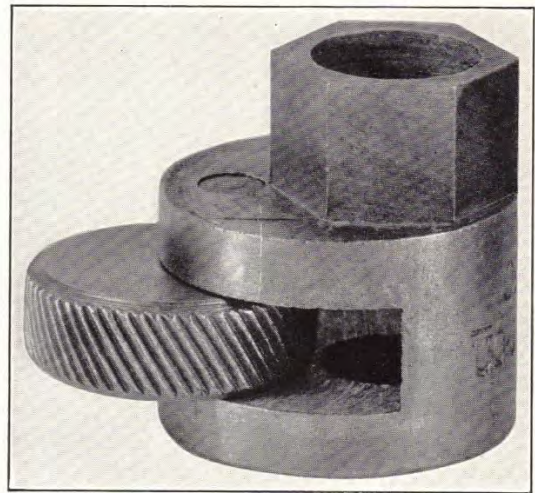
Heavy Duty Valve Lifter
 (New Style)

Tool No. S. T. 780—All Models

The Heavy Duty Valve Lifter was designed for late motors with increased valve spring tension and locks at any height.

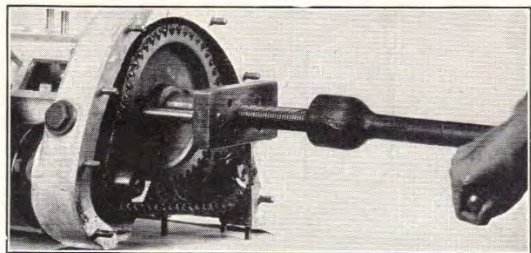
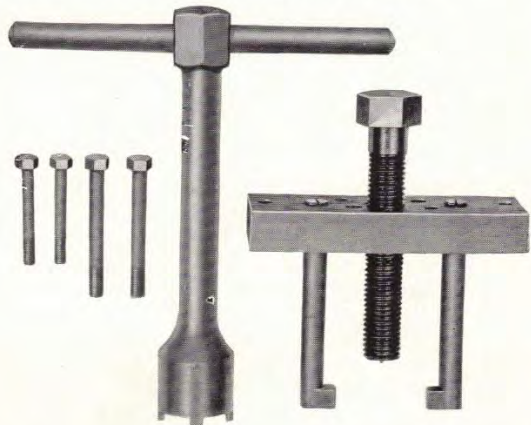
This lifter has many good features.

It is twice as strong as the average lifter of this type; has more leverage. The handle extends out beyond the manifold. It is adjustable and will last indefinitely as it has no wearing parts, such as ratchets and pin.



Stud Remover and Driver
 Tool No. S. T. 755

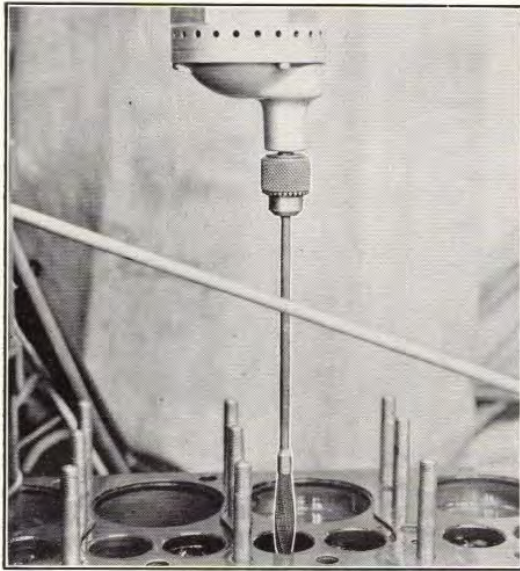
Will remove and replace studs ranging from 1/4" to 1/2" in size. The wheel is eccentric and will not slip when used with Snap On Socket Wrench.



Crankshaft Pulley and Sprocket Puller

Tool No. S. T. 113—All Models
 Extra Long Studs are Required for Twelve—S. T. 1422-1424

The T handle socket wrench fits the center screw of the puller, also the nuts on the ends of the camshaft and crankshaft. The equipment will pull the camshaft fan pulley, the crankshaft sprocket, the camshaft sprocket and vibration damper.



Valve Guide Cleaner

Tool No. S. T. 212—All Models

A valve guide cleaner that will not damage or enlarge the valve guide. When used in an S. T. 400 $\frac{1}{4}$ " Electric Drill a guide can be cleaned in the length of time it takes to say it.



Rocker Lever Assembly Aligning Bar

Tool No. S. T. 899—Twelve

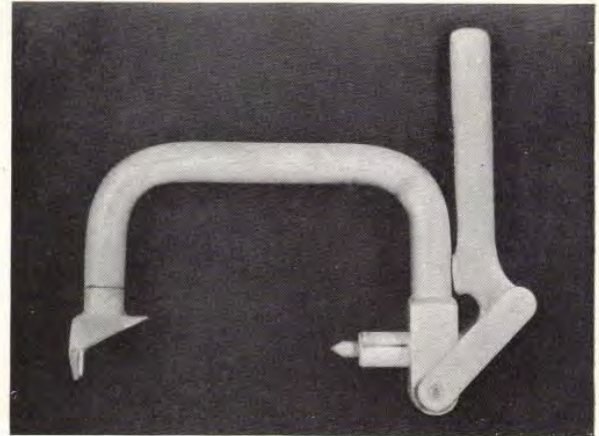
This aligning bar is used to line up the rocker lever assemblies when assembling them to the housing. It has a tapered end and can be placed temporarily in the housing before the regular pin is assembled.



Valve Rack

Tool No. S. T. 874—Twelve

This rack will hold twelve valves; it is drilled so that it can be placed within easy reach on one of the center or two end motor studs and provides convenient means for removing valves to work bench for cleaning and refacing. Two racks are required—one for each cylinder.



Valve Lifter

Tool No. S. T. 860—Twelve

A fast operating lifter that is especially designed with offset base for Twin Six; easily operated with one hand—allowing the other to remove and replace valve keys.



Valve Split Key Inserter

Tool No. S. T. 864—905-906

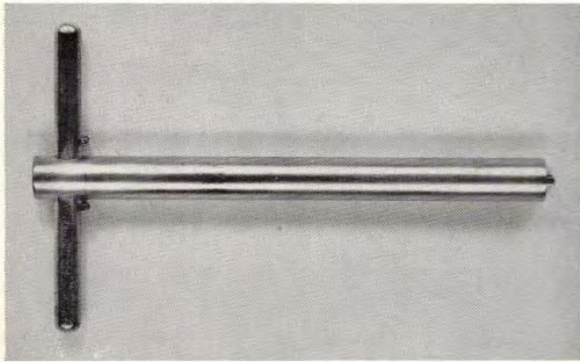
The split keys are easily mounted in the tool. Place the valve keys into the jaw leaving the keys clamped securely by the spring action of the inserter. When placed in position on the valve stem the spring action of the inserter holds them securely; this allows the hands free to operate the Valve Lifter in lowering the valve spring. The inserter is forced off the valve stem when the valve spring is lowered.



Valve Guide and Main Bearing Puller

Tool No. S. T. 863—All Models

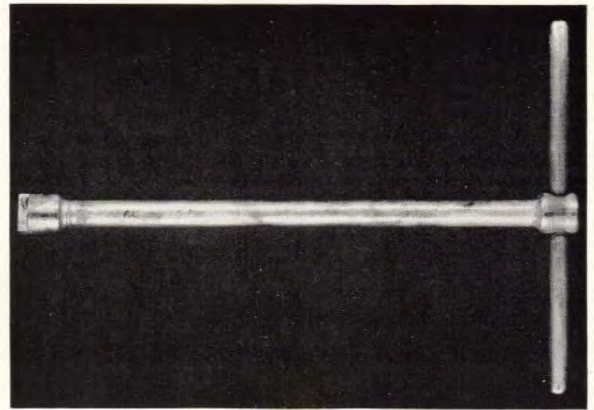
Insert the puller pilot into the valve guides on 905-906 model and tighten with brass nut; the sliding handle is then allowed to drop against stop, jarring the valve guide loose in cylinder. This tool is also used for replacing valve guides and removing main bearing cap.



Rocker Lever Shaft Wrench

Tool No. S. T. 900—Twelve

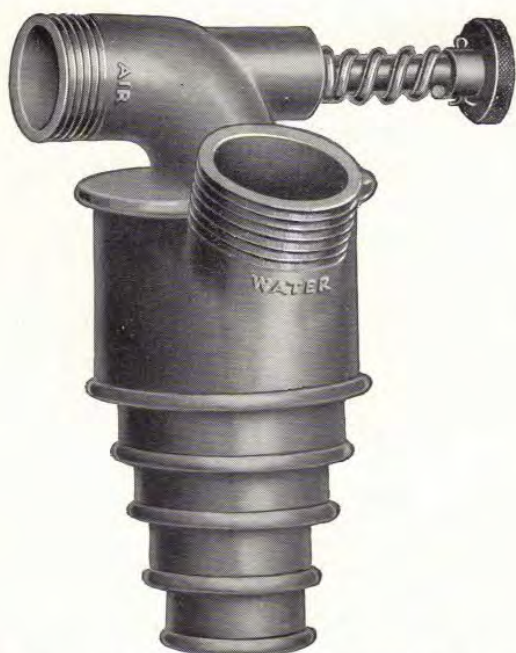
This tool is for the purpose of turning the rocker lever shaft so that the set screw hole in the shaft can be lined up with the hole in the housing.



Rocker Lever Housing Plug Wrench

Tool No. S. T. 866—905-906

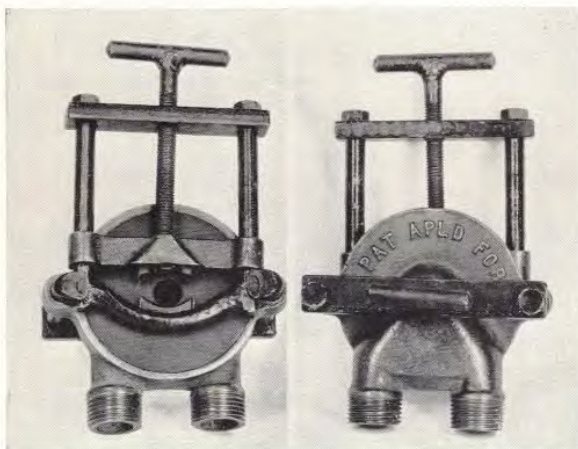
The "T" handle wrench is long enough to supply the necessary leverage to remove rocker lever plug when changing pistons and valves in the rocker lever block assembly.



Radiator and Cylinder Flushing Tool

Tool No. S. T. 890—All Models

An efficient tool for cleaning and flushing the cooling system of rust and scale deposits that are constantly forming and building up in the cooling system, clogging the water passages and causing overheating. A combination of air and water is used to remove the deposits in the cylinder block and radiator.



Fitall Radiator and Cylinder Flushing Tool

Tool No. S. T. 765—All Models

Designed so that it can be attached to either the cylinder or radiator and has an air and water connection. This is very simple and will do a satisfactory job. It can be easily installed on any wash rack.



Radiator Lifter

Tool No. S. T. 838—626-903, Inc.

Tool No. S. T. 851—900

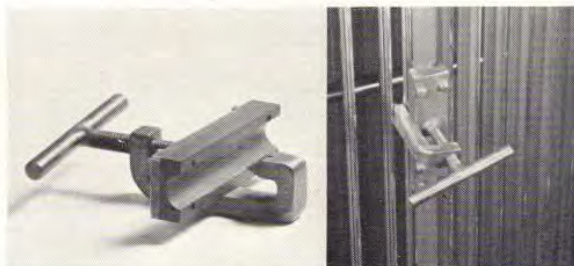
An inexpensive tool for lifting radiator off chassis. Place one end of lifter into bonnet hinge hole and the other end into radiator core. Then tighten lifter thumb nut.



Radiator to Dash Tie Rod and Spring Bolt Nut Wrench

Tool No. S. T. 821—901-903-1101-6-1100-8

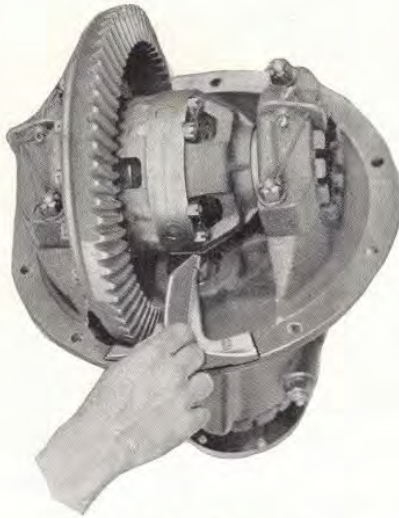
The nut which tightens this rod is located in the glove compartment and it is necessary to have a socket wrench 15 inches long so that you can clear the instrument board when tightening. The rear car springs are now located on the outside of the frame and the other end of this wrench will clear the frame and will tighten or remove this nut.



Radiator Shell Center Bar Clip Expanding Tool

Tool No. S. T. 937—Models 1100-1108-1200-1208

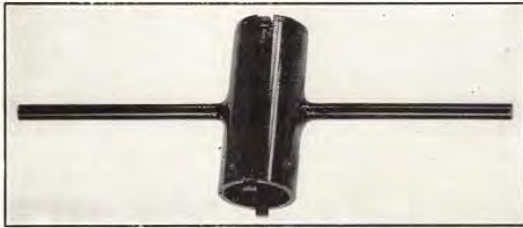
In order to dismantle the radiator shell from the radiator, it is necessary to pry the center radiator shell bar loose from the radiator shutter. To assemble it is necessary to bend the three hold-down clips together, and then spread them after the shutter and shell are together. This special tool is used to spread the clips when assembling the radiator shell and shutter. It is placed between the shutter opening and holds the center bar and shutter while the clips are being spread. This prevents any rattle between the shell and shutter.



Differential Pinion Gauge

Tool No. S. T. 672—426-526-626-726-826-901
 Tool No. S. T. 671—343-443-640-740-840-903-905-906

The hypoid gear tooth ends do not run flush and it is necessary to set the depth of the pinion by measurement. The gauge shown here is an accurately ground gauge for this purpose.



Rear Axle Shaft Bearing Adjusting Nut and Radiator Packing Nut Wrench

Tool No. S. T. 749—726-733-826-833-900-901-902
 For 740-745-840-845-903-904 Use Wrench No. 55763

One end of this wrench is designed for taking up on the axle shaft bearings and the other end for removing radiator packing nut.



Rear and Front Axle Spring Clip Nut Wrench

Tool No. S. T. 786—All Models

Heavy duty double end box socket wrench 21" long with $\frac{1}{16}$ " and $\frac{3}{4}$ " openings with tremendous leverage. The handle is long enough to tighten rusty spring clip nuts. The long handle makes it possible to do the job without getting under the car.



Rear Axle Shaft Bearing Lubricator Sleeve

Tool No. S. T. 933—1001-3-1100-3-1200-3
 Tool No. S. T. 940—640-645-740-745-840-845-903-4-5-6
 Tool No. S. T. 941—900
 Tool No. S. T. 942—726-826-901-902
 Tool No. S. T. 943—626
 Tool No. S. T. 944—1005-6-1107-8-1206-8

This tool is used for greasing rear axle shaft bearings, without removing the axle shaft, by removing both rear brake drums, then placing the sleeve on axle shaft, and use high pressure grease gun.



Rear Axle Shaft Bearing Cup Puller

Tool No. S. T. 928—Models 1001-6-1100-8-1200-8

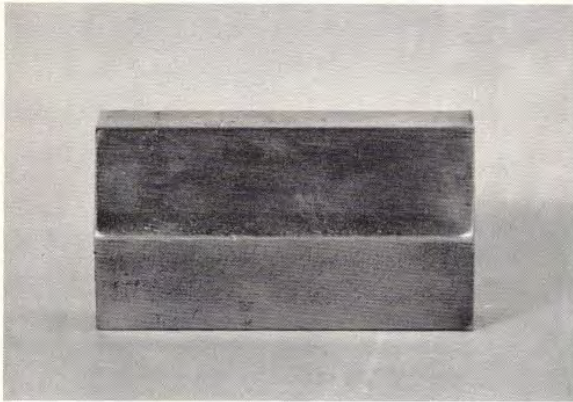
Anyone who has removed the rear axle shaft bearing cup realizes it is a very difficult operation. We have designed a special puller with three expansion jaws made of tool steel which makes them light, tough, and hard. These three jaws have a 45° angle and are set on the outside of a 45° angular block, and when this block is adjusted, it expands the jaws in back of the bearing cup. The sliding bar handle, which is part of the tool, is used as a ram to remove the cups.



Differential Side Bearing Adjusting Wrench

Tool No. S. T. 848—Models 900-1001-3-1100-3-1200-8

This wrench is used to turn the differential carrier bearing adjusting nut in order to get the proper bearing adjustment. It is made to fit into the slots in the adjusting nut to prevent slipping.



Rear Axle Shaft Puller Adapter

Tool No. S. T. 1442—900-1001-1004-1100-1105-1200-1205
Tool No. S. T. 1443—626-640-726-740-826-840-901-903-
906-1005-1006-1107-1108-1206-1208

These adapters are to be used with tool S. T. 928 rear axle shaft bearing cup puller. You first remove the shaft and the ram from the puller S. T. 928, and then screw in the adapter. Place the tool on the axle shaft, and a sharp rap with the ram will remove the shaft.



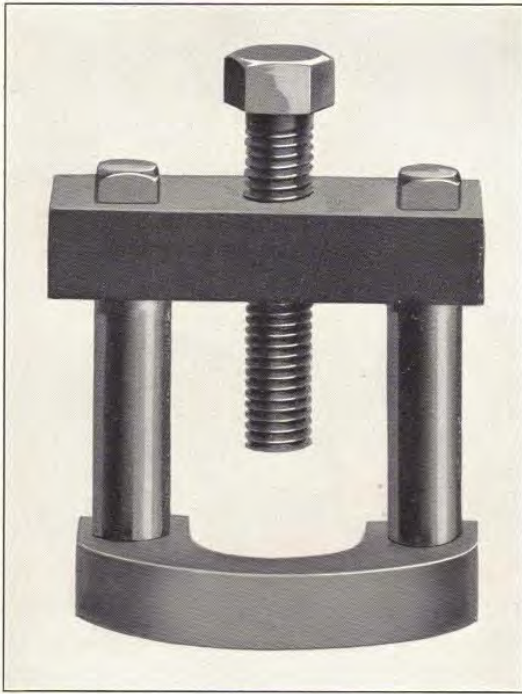
Rear Axle Shaft Nut Wrench

Tool No. S. T. 133—740-840-903-5-1005-1107-1206-8

Tool No. S. T. 748—726-826-901

Tool No. S. T. 849—900-1001-4-1100-4-1200-4

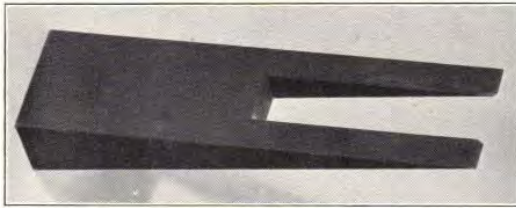
A heavy duty wrench, designed to give extra long life. It is made with an offset, so that the axle shaft nuts may be removed without removing the wire wheel.



Shock Absorber Connecting Link Puller

Tool No. S. T. 790—826-840-901-903-1001-6-1100-8

This tool will remove the upper and lower ball joint connecting link on shock absorbers.



Shock Absorber Ball Joint Wedge

After Frame No. 326143 to No. 331126—826

After Frame No. 189597 to No. 191126—840

Tool No. S. T. 811—826-840

This wedge will remove the upper and lower ball joint connecting link on 826-840 shock absorbers.



Shock Absorber to Frame Nut Wrench

Tool No. S. T. 876—900

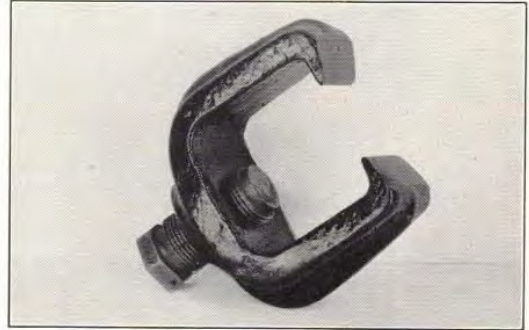
The wrench is used for holding front shock absorber nuts on inside of frame on 900 model where 90° open end wrench is required for working in close quarters.



Shock Absorber Offset Screwdriver

Tool No. S. T. 784

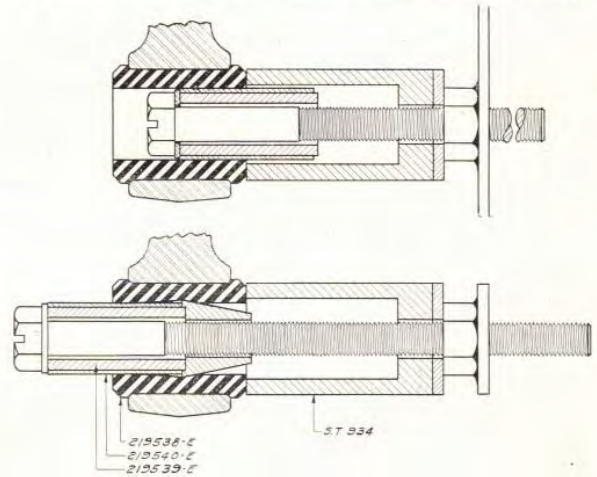
The shock absorber plugs are so tight that it requires a special screwdriver to remove plugs.



Shock Absorber Lever Puller

Tool No. S. T. 732—626-640-726-740

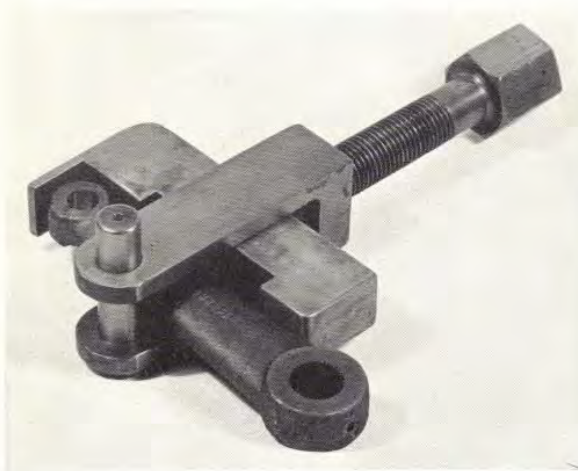
When necessary this puller will remove shock absorber lever front or rear. The pulling ends are tapered so that it is easy to put puller into pulling position between shock absorber housing and lever.



Shock Absorber Arm Bushing Puller and Replacer

Tool No. S. T. 934

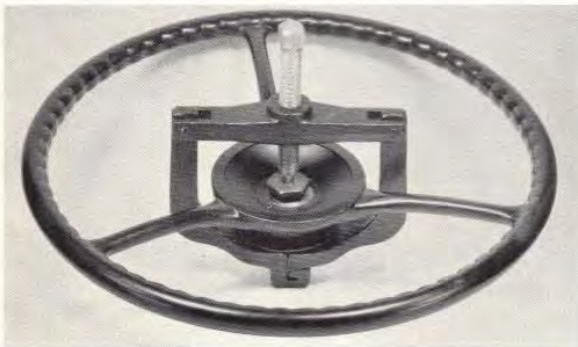
A special tool has been developed to assist in replacing these parts. The upper illustration shows the method of removing the old bushing, and the lower illustration shows how the new bushing may be drawn into the rubber grommet. Unless this, or a similar tool is used, the grommet may be damaged in driving in the new bushing.



Steering Lever Aligner

Tool No. S. T. 915

This aligner is used to bend the steering lever to line up the steering wheel. By removing the floating pin and placing the anvil against the steering lever, the floating pin is put in place. Then the cylinder screw is taken up until the end of the screw is against the steering and the back of the lever against the tool anvil. The screw is tightened until the lever is bent to the proper angle. It is not necessary to disconnect the steering lever or any parts of the steering.



Steering Wheel Puller

Tool No. S. T. 938

This has a direct pull all around the steering wheel housing and protects it from being damaged, and has a leather washer which fits between the puller and the wheel. It is used in connection with S. T. 1437, which is designed to fit on top of the post and prevent the threads from being damaged. With this equipment, the most stubborn wheel can be removed easily. It is universal and fits all of the bell housing steering wheels.



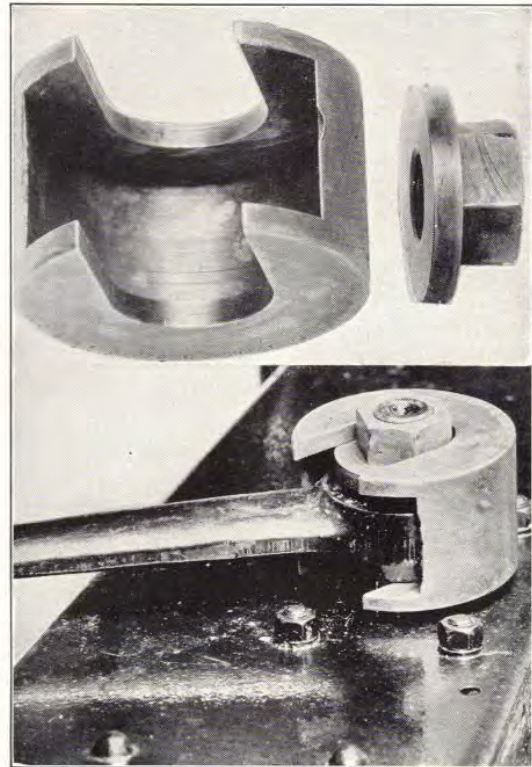
Steering Post Nut

Tool No. S. T. 1437

To be Used with Wheel Puller S. T. 938

This special nut is screwed on tight to the upper end of the steering post and bottoms against the top of the post. Then our wheel puller is placed in position and tightened.

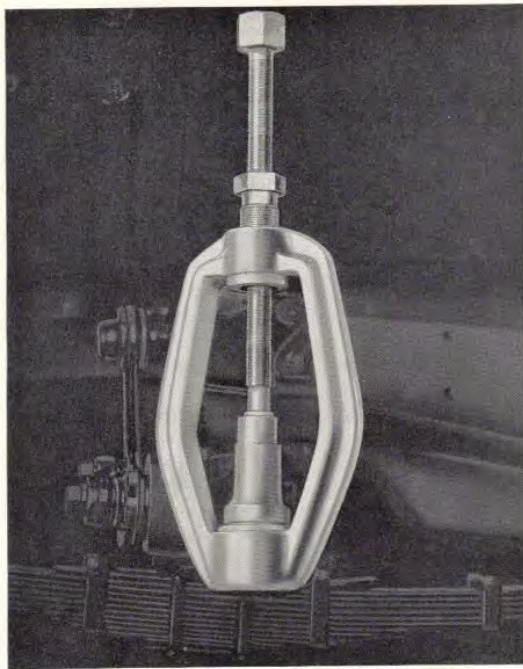
By giving the puller adjusting screw a sharp rap with a hammer, the same as you would in removing an axle shaft, you will find that the wheel can be removed without difficulty. This special adapter will allow a straight pull on the steering wheel and, in addition, will not expand the steering post, as is the case without this adapter.



Steering Lever Puller

Tool No. S. T. 135—All Models

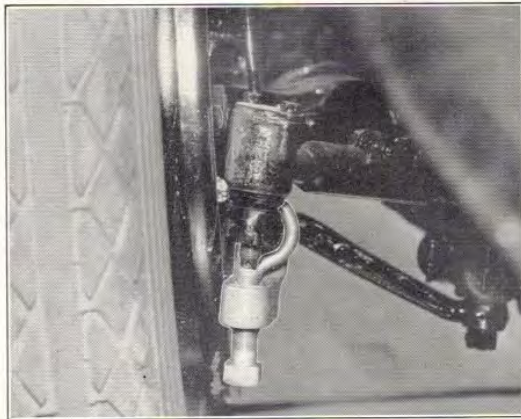
This steering lever puller also includes a 12" chrome-vanadium wrench.



Steering Knuckle Pin Puller

Tool No. S. T. 704—All Models
(Four-Wheel Brakes)

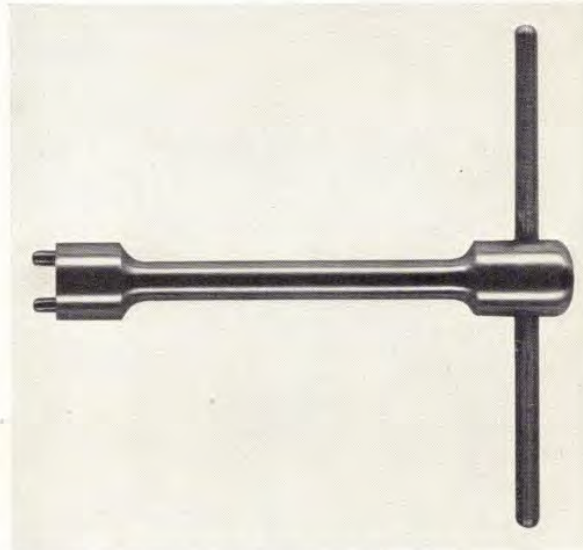
This tool has sufficient leverage to push out the old pin and push in a new one without removing the axle.



Steering Cross Tube Ball Joint Puller

Tool No. S. T. 653—All Models

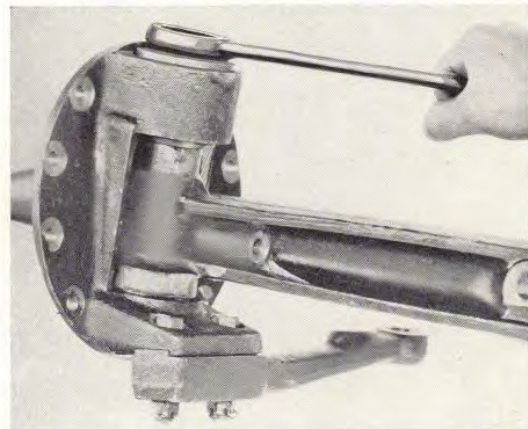
This puller will remove the steering cross tube ball joint, when necessary to tram the front wheels. The screw has a hardened steel tip so that it cannot get out of place and spoil the threads or upset the end.



Horn Button Contact Screw Wrench

Tool No. S. T. 853—900

In order to remove horn button contact screw on the 900 model it is necessary to remove the lower gears on steering post and slide tube assembly upward. Remove the horn button retainer and then use this special wrench to remove contact screw.



Steering Knuckle Plug Wrench

Tool No. S. T. 195

It is impossible to remove the steering knuckle plug without first removing the brake support plate. This gives the opportunity to use a special box head single end type of wrench for removal or tightening this vital part. When rusted-in plugs are encountered, a piece of pipe may be used over the end of the handle without danger of damage to the wrench. This wrench is a tight fit and it may be necessary to drive it on with a hammer. It is made of chrome-vanadium steel so that hammering will not harm it.



Steering Lever and Radiator Anchor Bolt Nut Wrench

Tool No. S. T. 823—900-901-903-905-906

The radiator anchor bolt nuts on the new car are located above the frame cross channel and it is necessary to have a socket wrench to remove them. The steering lever nut is very close to the mud splashers. S. T. 823 is a combination of these two wrenches.



Wheel Gauge—Ideal

Tool No. S. T. 128—All Models

The best tramming device we have discovered. It positively eliminates guesswork in lining up front wheels, irrespective of condition of wheels, rims or tires.



Horn Button Wrench

Tool No. S. T. 757—726-740-826-840-901-903

A tool designed to remove horn button on steering wheel by sliding the wrench under the horn button and holding stud which horn button is screwed on to. This makes it unnecessary to remove the light controls from the steering post.

Camber and Caster Gauge

Tool No. S. T. No. 373

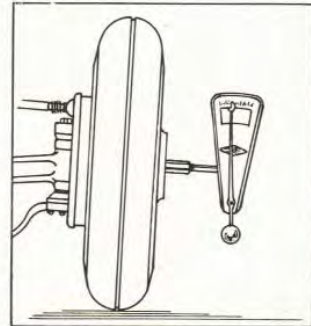
Includes two adapters, one wheel angle gauge and a camber and caster gauge.

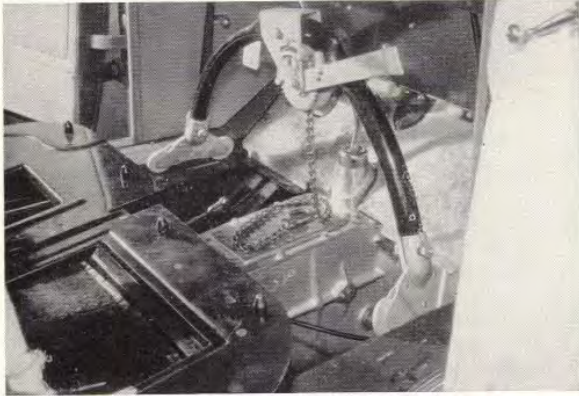
This Camber and Caster Gauge is simple, quick and easy to use. This new method of checking camber and caster meets the requirements of every dealer. Many service stations have found it economical for checking poor steering geometry and tire wear.

Remove Hub Caps and screw the adapter on steering knuckle spindle—then insert gauge in adapter in a vertical position, permitting pointer to swing freely.

The caster is read.

Use gauge supplied to determine angle of wheel when reading caster.

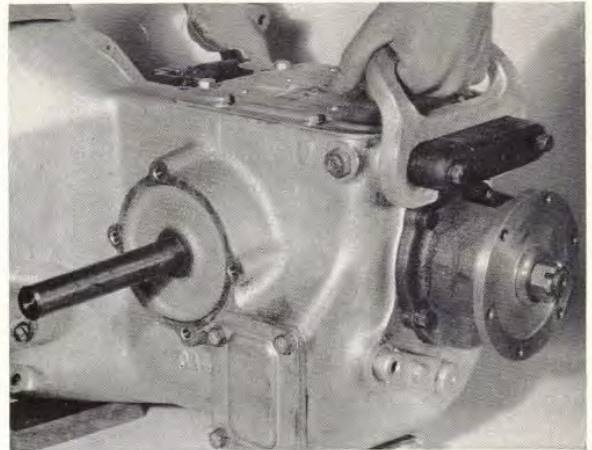




Transmission Hoist

Tool No. S. T. 844

This hoist will be found particularly valuable for handling the transmission assembly. This device will save considerable time where you are installing automatic clutch control and three-speed transmissions in cars not designed with this equipment. It enables one man to remove or install a transmission. You will find it a real time saver.



Transmission Lifter

Tool No. S. T. 817

A transmission lifter S. T. 817 has been designed to facilitate the handling of transmissions on the Ninth Series car. This assembly projects under the front seat and it is difficult to handle without this device.



Synchro-Mesh Indicator

Tool No. S. T. 837

Used on Three- and Four-Speed Transmissions

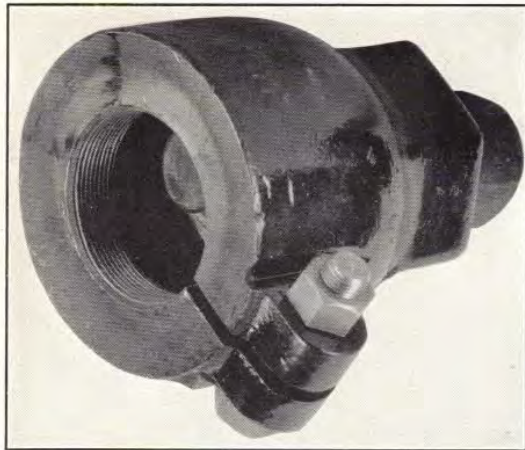
A tool for checking the brake shoe travel on synchro-mesh transmissions. For complete directions see Service Letter, Volume 7, No. 12.



Trans. Synchronizer Yoke Centralizing Spring Wrench

Tool No. S. T. 861—900-901-903-5-1001-4-1100-8

A special wrench is required for changing the yoke centralizing spring. The wrench is used to press against the spring so that the cotter pin may be easily removed. The wrench is also used for reinserting the cotter pin. This wrench is also shown in use.

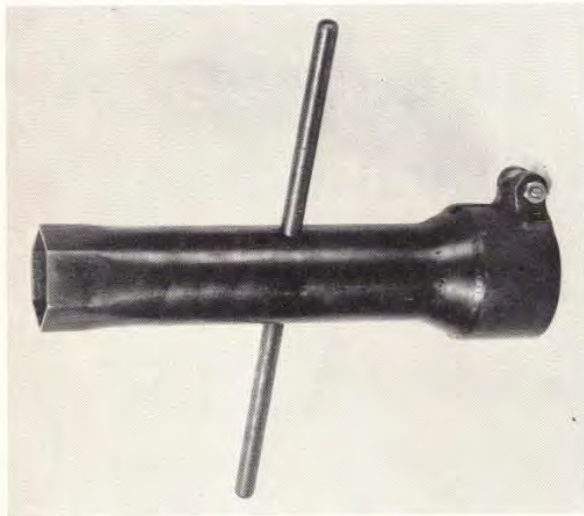


Wheel Puller—Heavy Duty

Tool No. S. T. 123— $2\frac{1}{8}$ "—740-840-903

Tool No. S. T. 746— $2\frac{1}{8}$ "—726-826-901-900-1001-4-1100-5-1200-4

A heavy duty puller designed so that it is possible to drive the center screw without damaging the threads.

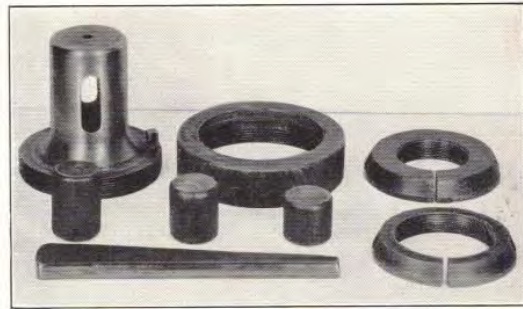


Front Wheel Hub Cap and Nut Wrench

Tool No. S. T. 951

This wrench is designed for removing the Front Wheel Hub Cap without removing the wheel from the car.

The inside diameter of the wrench is Diamond Knurled, and will hold onto the cap, making it easy to remove.

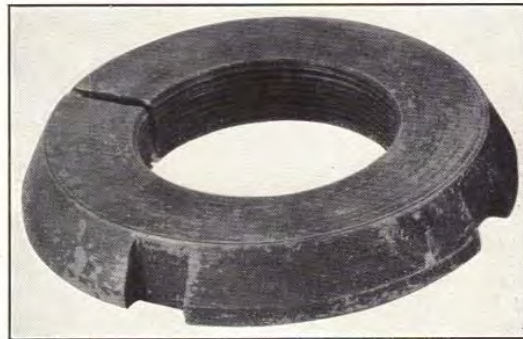


Wheel Puller—Heavy Duty

(K & G Type)

Tool No. S. T. 955—All Models (Puller only)

A real heavy duty wheel puller that will pull the toughest wheel. All parts are forgings and extremely rugged. Pulling is done by the wedge principle which does not transmit shock to the wheel bearing when struck with a hammer.



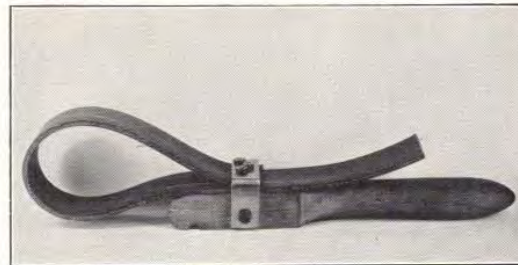
Wheel Puller Adapter (K. & G.)

Tool No. S. T. 1371— $2\frac{1}{8}$ "—726-826-901-900-1001-4-1100-5-1200-5

Tool No. S. T. 1253— $2\frac{1}{8}$ "—740-840-903

Tool No. S. T. 1430— $2\frac{1}{8}$ "—905-6

Tool No. S. T. 1431— $2\frac{1}{2}$ "—1005-6-1107-8-1206-8



Wheel Hub Cap Wrench

Tool No. S. T. 782—All Models

This wrench is made of rubberized canvas belting and works on the friction principle. It is positive and will not mar the hub cap.

Wheel Hub Cap Wrench Strap

Tool No. S. T. 1412— $2\frac{1}{2}$ " Wide—For S. T. 782

The Following Pages List

GENERAL SHOP EQUIPMENT



Courtesy Coats

Shop Overalls

Shop Caps

Car Covers

Number Stamping Sets

Key Cutting Machine

Shop Jacks

Shop Tools

Misc.





Mechanic's Suit

Tool No. S. T. 660—Tan—Size 36	Tool No. S. T. 450—White—Size 36
Tool No. S. T. 661—Tan—Size 38	Tool No. S. T. 451—White—Size 38
Tool No. S. T. 662—Tan—Size 40	Tool No. S. T. 452—White—Size 40
Tool No. S. T. 663—Tan—Size 42	Tool No. S. T. 453—White—Size 42
Tool No. S. T. 664—Tan—Size 44	Tool No. S. T. 454—White—Size 44
Tool No. S. T. 665—Tan—Size 46	Tool No. S. T. 455—White—Size 46
Tool No. S. T. 666—Tan—Size 48	Tool No. S. T. 456—White—Size 48

These garments are made of preshrunk cotton covert. They are full cut and neatly tailored so that they fit neatly without binding. Order to size as the garments are cut oversize from preshrunk material and will not shrink appreciably when washed.



Shop Cap

Tool No. S. T. 819

These service caps are white and have the word "Packard" in red script on the front. They are made of light canvas type material and are adaptable for shop use.



Courtesy Coat

Tool No. S. T. 600—Tan—Size 36	Tool No. S. T. 350—White—Size 36
Tool No. S. T. 601—Tan—Size 38	Tool No. S. T. 351—White—Size 38
Tool No. S. T. 602—Tan—Size 40	Tool No. S. T. 352—White—Size 40
Tool No. S. T. 603—Tan—Size 42	Tool No. S. T. 353—White—Size 42
Tool No. S. T. 604—Tan—Size 44	Tool No. S. T. 354—White—Size 44
Tool No. S. T. 605—Tan—Size 46	Tool No. S. T. 355—White—Size 46
Tool No. S. T. 606—Tan—Size 48	Tool No. S. T. 356—White—Size 48

A neatly tailored courtesy coat made of cotton covert. The material is preshrunk before cutting and is unexcelled for laundering. Be sure to order the size coat that you actually wear.

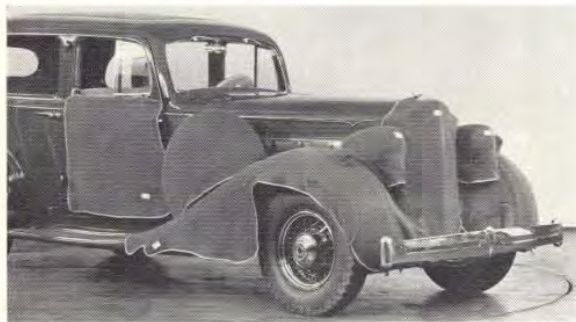


Bumper Bar End Bolt Cover Wrench

Tool No. S. T. 936

This is a special tool, designed to remove the bumper bar lower cover on the 1100 to 1105 model cars.

It has been heat treated and is tough enough to stand the strain of removing the cap after it has been in service for some time.



Shop Covers

Tool No. S. T. 130—Fender Covers

Tool No. S. T. 148—Cowl Cover

Tool No. S. T. 146—Door Cover

Tool No. S. T. 144—Front Seat Cover

Tool No. S. T. 357—Radiator Cover

Tool No. S. T. 149—Steering Wheel Cover

Tool No. S. T. 150—Change Speed Lever Cover

Tool No. S. T. 358—Side Wheel Cover

Tool No. S. T. 834—Headlight Cover

Sets of inside and outside covers are a necessity in the modern service shop. Their use results in better satisfied owners. They enable the mechanic to do better work, as he does not have to worry about scratching the car, or getting grease on the upholstery. The inside covers are especially tailored to fit and are of a closely woven material. The outside covers are heavy and are underlined in fleece to prevent scratching. Both inside and outside covers can be easily laundered.



Vehicle Plate Stamping Set

Tool No. S. T. 710

This set consists of a name stamp, with the name and address of the distributor or dealer, and 10 hand letter stamps for making the date of delivery. The name stamp will also be found of value in marking the various tools and equipment belonging to your service department.

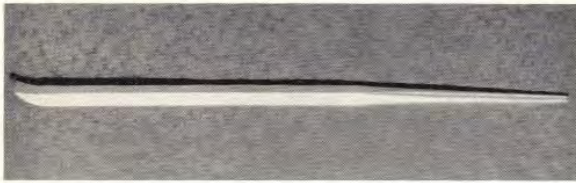
Each set is made to order which requires one week. When ordering please include on the order, firm name, city and state.



Spring Bolt Replacing Drift

Tool No. S. T. 825

It is difficult to line up the spring bolt when replacing front or rear springs. This drift is tapered and machined to fit the spring bolt thereby making the installation easy by inserting the spring bolt into drift. Then drive the bolt into place.

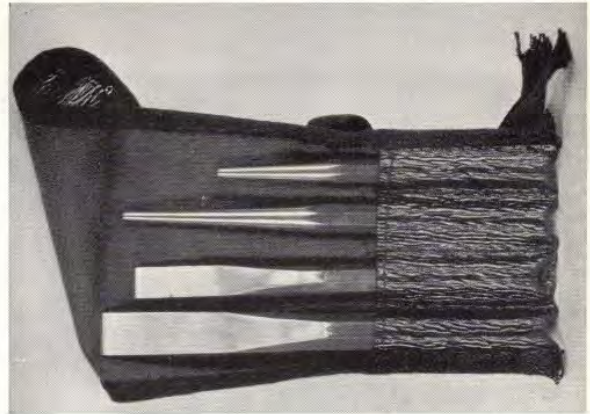


Mechanic's Pry Bar

Tool No. S. T. 903

A combination pry bar 18" long made of tool steel carefully tempered and hardened to give toughness.

This tool is useful when doing mechanical work and with it a powerful leverage can be applied. One end is used for aligning motor bolts, steering, springs, running boards, bodies and fenders. The other is used for prying off tight cylinder heads or freeing up frozen bolts, brakes, etc.



Chisel and Punch Set

Tool No. S. T. 894

A handy size two (2) chisels, one (1) long Taper Punch, one (1) Center Punch. The chisel and punches are forged from toughest steel, heat treated, hardened and tempered and have passed a laboratory test for quality. The cutting edge is bevelled at correct angle to remain sharp under extreme abuse. The tools are useful for electrical and mechanical work.



Chassis Lubricator Service Kit

Tool No. S. T. 930

The Packard Chassis Lubricator Service Kit will save as much as 70% in labor and assure a more efficient and accurate repair job. It is priced so low that it will pay for itself on the first few cars.

It is advisable that each chassis lubrication system be checked at least once a year. This check-up with the Service Kit requires less than half an hour and enables the dealer to make a good profit on the job.

The Service Kit consists of a pressure pump with a long flexible rubber hose, pressure gauge with fittings for connecting to the various types of lubricators, and special wrenches for reaching drip plugs and fittings in difficult locations. It will service chassis lubricators on other makes of cars as well as Packard. It will service ALL Packard lubricators and is made universal in application by the adapters and coupling tubes.

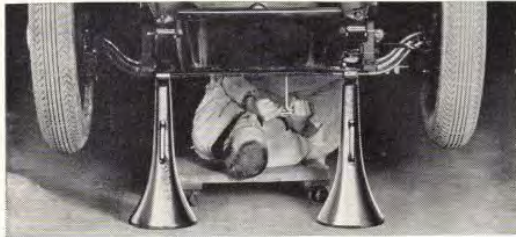
The mechanic connects the service pump to the chassis.



Mechanic's Tool Roll

Tool No. S. T. 612—All Models

The end openings are milled to give the greatest possible range of application without duplication. They come packed in the leatherette kit as shown.



Jack for Motor Work

Tool No. S. T. 155—All Models

When in place this jack holds the front wheels ten inches from the floor. It is safe and out of the way. Gives the mechanic sufficient working space and convenient for sliding in and out on creeper.

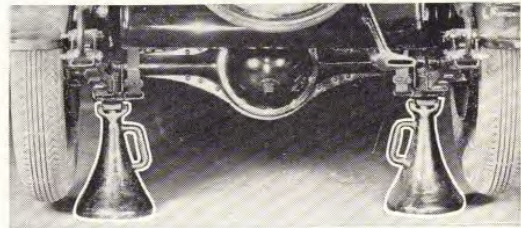
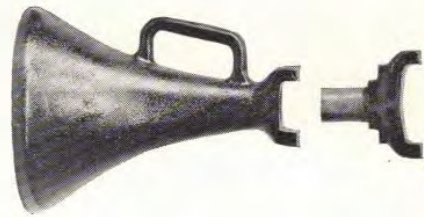


Hydraulic Jack

Tool No. S. T. 733

A direct lift jack—Fast—Positive and Safe. Will not leak or settle under load. One valve only under direct cylinder pressure.

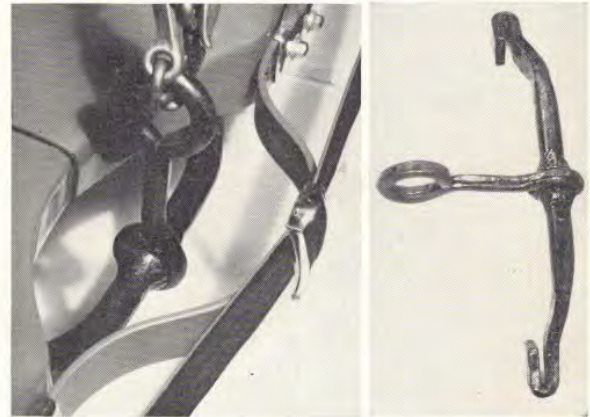
One, three and five ton capacity with release in the handle.



Jack—Combination

Tool No. S. T. 154—All Models

A combination front and rear axle jack. When in place gives two inches clearance at either front or rear. Ideal for your paint shop, new car delivery department, for changing wheels and tires, for your shop when doing brake work, rear axle work, etc.



Hoisting Bar

Tool No. S. T. 362—900

Due to the construction at the front of the frame on the Light Eight, a special bar is required for using a chain hoist to lift the front end of the car, otherwise the chain must be hooked onto the bumper bar and this is not a safe practice. Insure the safety of your men by the use of this special hoisting bar. We show it both separately and in use.



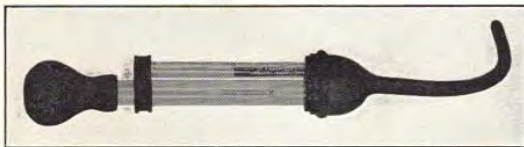
Walker Jack

Tool No. S. T. 858

Walker Jack Adapter

Tool No. S. T. 1427

An adapter has been designed for use on the standard Walker jack for holding the motor while the transmission is being removed. This applies to Tenth Series cars, where the rear motor supports are on the transmission case. It is, therefore, necessary to use a jack to hold the motor when the transmission is removed for any reason.



Radiator Hydrometer

Tool No. S. T. 753

Every dealer should have a Zero Tester in stock. The hydrometer instrument readings are the same for all three solutions; alcohol, Prestone, and glycerine.



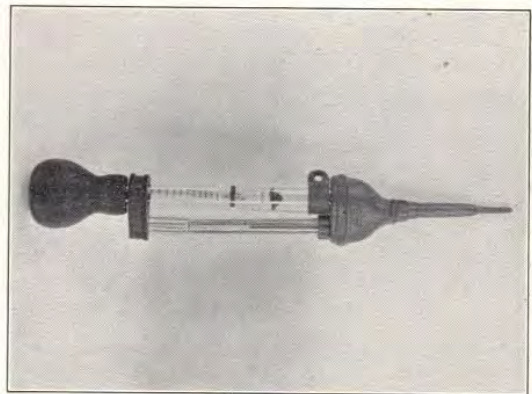
Gasoline Pump Pressure Gauge Assembly

Tool No. S. T. 917

This is for the purpose of testing the pressure produced by the vacuum pump. It connects between the carburetor and the pump and has a hose long enough so that the instrument may be attached to the windshield. It is held by a vacuum cup on the back of the gauge.

Additional adapters for the Detroit Lubricator carburetors are available.

Models 726-740-826-840— $\frac{5}{8}$ x 18 Thread S. T. 923
901-904 $\frac{1}{2}$ x 20 Thread S. T. 924



Batrometer

Tool No. S. T. 791

With the "Batrometer," no matter what the temperature of the electrolyte is you can get the actual and true specific gravity by reading the hydrometer, noting the thermometer and adding or subtracting the points shown on the thermometer scale, from the hydrometer reading.



Gasoline Mileage Tester

Tool No. S. T. 323

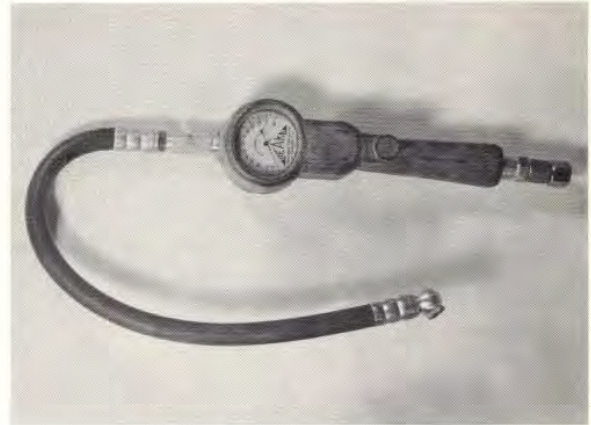
The gasoline mileage tester is simple to attach and is accurate and will give you your gasoline mileage under any conditions. It is used with the vacuum system as well as the pump and is guaranteed against breakage and should last indefinitely. This is particularly useful to show the car owner the mileage he is getting as it is in plain view and can be seen from the seat and tests can be made on the pick-up or over a given course.



Battery Lifter

Tool No. S. T. 341

This is an especially designed clamp to facilitate handling of batteries, on the Light Eight, which are located under the front seat. The clamps are made of spring steel and the handles are made of wood to insure insulation. The extended handle makes it possible for one man to remove or replace a battery. The clamp is placed in position and a bar is slipped through the lower handle while the battery connections are removed and the plate on the under side of the battery is removed. The bar is then removed and the battery lowered by the top handle.



Tire Gauge

Tool No. S. T. 770

This is a very efficient gauge that can be attached to any air line, and is calibrated against a mercury column pressure gauge. This is the method employed where extreme accuracy is necessary. It indicates pressure from 5 to 60 pounds.

Graphite Lubricating Gun

This is made of hard rubber and filled with a fine powdered FLAKE graphite. The flow of graphite is controlled by the adjustable nozzle, and the amount of flow is clearly indicated on the top of the gun. This delicately controlled graphite is carried by air and deposited where it is needed. It is not affected by the weather, therefore, it is the finest thing that can be used for lubricating the door locks as the graphite will not freeze. It is also good for springs, hood lacings, squeaky floor boards, window channels, and any number of different places.

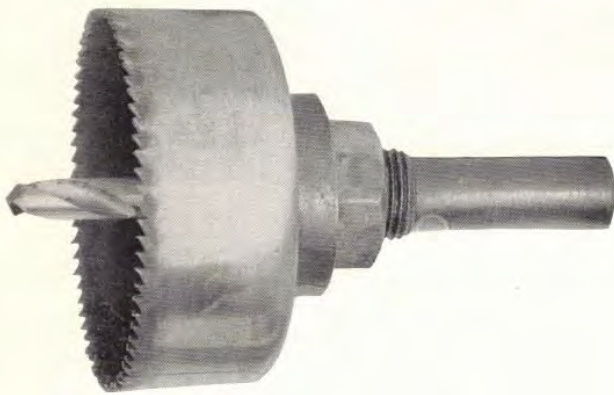
These guns come filled ready for use. The refills consist of a special easy-pour can equipped with chute, and contains enough graphite to fill the gun about four times.

There is also a small burnisher in the bottom of the gun which can be snapped in and out of place.

We believe that a trial will convince anyone who may be skeptical about its many uses. It saves labor and can be used back of the upholstery, and any spots left can be removed with an ordinary cleaner or gasoline.



Tool No. S. T. 931



Heater Cutter

Tool No. S. T. 730

Detail Parts—For S. T. 730

Tool No. S. T. 1416—4" Cutter

Tool No. S. T. 1415—2½" Cutter

Tool No. S. T. 1358—Mandrel

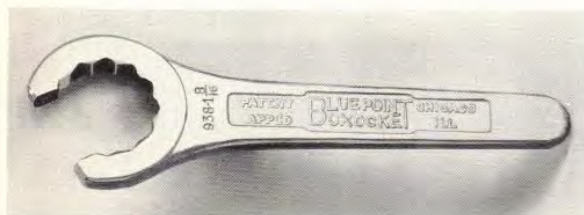
This cutter was designed especially to cut the hole through wood and metal for installation of Heater.



Headlight Nut Wrench

Tool No. S. T. 747—726-733-740-745-826-840-901-903-905-906

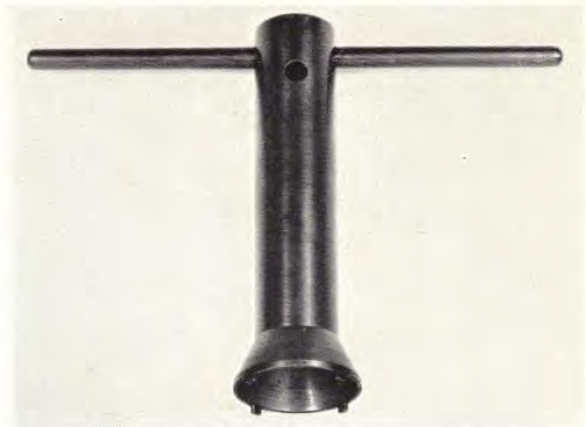
This heavy duty wrench is used for removing headlight and also for adjusting lights without removing cable from lamp.



Horn Nut Wrench

Tool No. S. T. 920

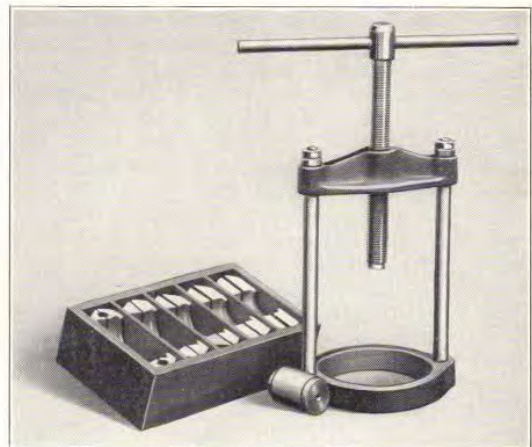
This wrench is slotted and is a twelve point or double hex wrench designed to remove the hold down nut on the trumpet horn. This operation cannot be performed efficiently with your standard tools.



Transmission Clutch Shaft Bearing Nut Wrench

Tool No. S. T. 914

Transmission clutch shaft bearing nut wrench, which has been designed to remove the clutch shaft to bearing nut when it is necessary to adjust the high speed synchronizer.



Bearing Puller

Tool No. S. T. 884

This set consists of a puller frame and a set of three adapters for pulling bearing cones on the differential and rear axle shafts. It also includes two adapters for pulling steering worm gears.

Use adapter No. 342 for rear wheel bearings on 726-826-900-1001-1100 models.

Adapter No. 377 is for differential bearings on 326-426-526-626-726-826-901-900-1001-1100-1200 models.

Adapter No. 456 is for differential bearings on 236-336-443-640-740-840-903-905-906-1003-1103-8, 1204-8 models.



Window Moulding Remover

Tool No. S. T. 922

Window mouldings on Eleventh series cars are of one piece, and are used with concealed fasteners, similar to the fasteners on the glove compartment doors. A special tool S. T. 922 has been made to facilitate removal. First, tap downward on the moulding for several inches from each corner. For this purpose, use a covered block or a rubber hammer. Then, in the same position on the upper side, tap the moulding upward rather sharply. Place the tool in position and pull the bottom of the moulding toward you. You will find that the spring fastener has quite a tension, and that a sharp pull is required. Repeat in the other lower corner, after removing the regulator. Pull the moulding out far enough at the bottom to clear the door and, with a downward movement, it can be removed.

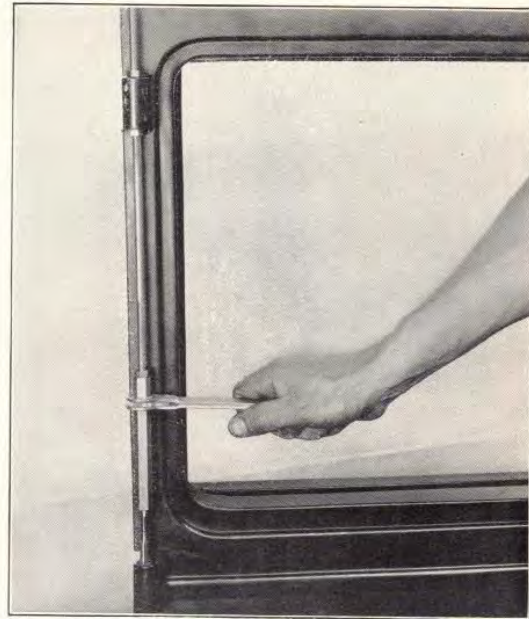
For installing, simply place the moulding in position at the top, line it up in position at the bottom and, with a quick push at each lower corner, you will find that it snaps into position.



Ignition Switch and Outside Door Handle Spanner Wrench

Tool No. S. T. 891—Models 1106-7-8

This wrench will remove the door handle nut on the Packard Twelve, as well as the ignition switch lock.



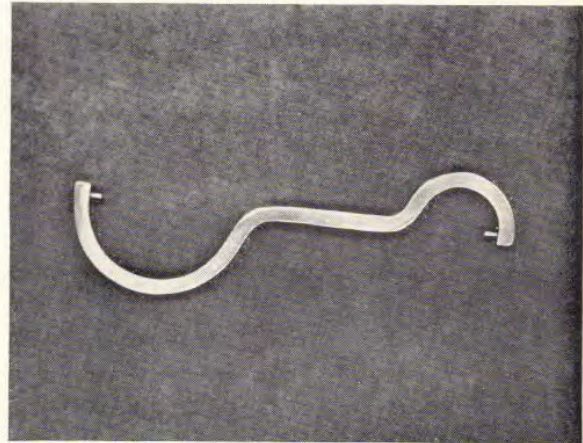
Door Hinge Reamer

Tool No. S. T. 742—All Models Except 901

Tool No. S. T. 850—901

(Complete with Reamer and Wrench)

The hinge pin reamer is designed especially for eliminating door hinge rattle. It is a practical tool for reaming door hinges when installing oversize hinge pins. With this tool it is not necessary to remove the doors.



Inside Door Handle Spanner Wrench

Tool No. S. T. 829—901-902-903-904-905-906-
1001-4-1100-5-1200-8

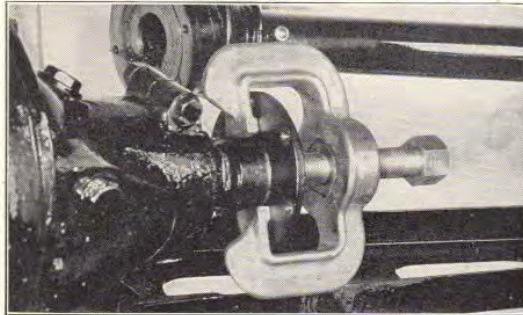
This spanner wrench is used for removing and replacing inside door lock handles. This wrench will increase the efficiency and eliminate damage to the part.



Outside Door Handle Spanner Wrench

Tool No. S. T. 949—1200-3-6-8

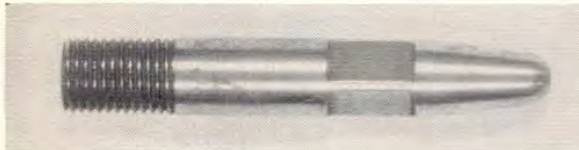
This wrench will remove outside door handles without damaging the parts. Do not attempt to remove these handles without this wrench on Twelfth Series cars. The cost of the wrench will pay for itself many times over, against the cost of your supplying damaged parts to customers without charge.



Universal Joint Flange Puller

Tool No. S. T. 124—All Models

With the use of this puller, the flange may be removed without disassembling large units. The screw works on a free nut principle which permits driving the head without damaging the threads.

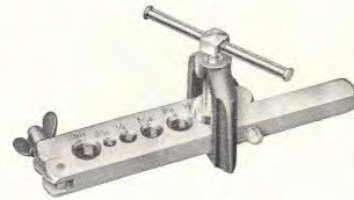


Rear Bumper Guide Stud

Tool No. S. T. 330—900 Models

This stud is used to assemble the rear bumper on the 900 model.

1. Remove either cap screw and insert special stud in place.
2. Remove the other cap screw—place bumper on special stud and assemble bumper bracket and cap screw.
3. Remove special stud and attach the other cap screw.
4. Repeat operation on other side.
5. Using this stud will not allow the splasher to move and will prevent considerable trouble in assembling.



Copper Tube Cutting and Flaring Tool

Tool No. S. T. 768

Detail Parts—For S. T. 768

S. T. 1334—Flaring Tool

S. T. 1335—Cut-Off Tool

The flaring tool and tube cutter will accommodate four different sizes of tubing: $\frac{3}{16}$ " , $\frac{1}{4}$ " , $\frac{5}{16}$ " , or $\frac{3}{8}$ ". This tool is designed to flare the end of the tube with a spinning action so that tubing will not crack or split at the flare.



Spark Plug Cleaner

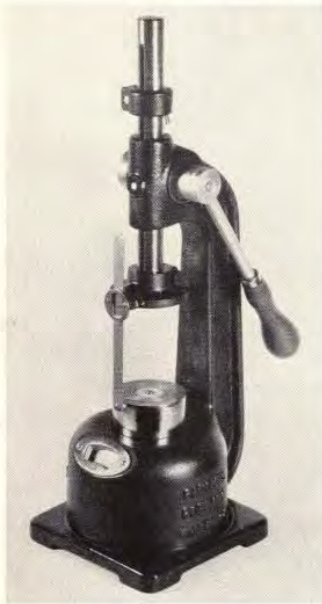
Tool No. S. T. 397

Tool No. S. T. 902—Cleaner Compound

An air-blast cleaner, using a new cleaning compound developed for removing the oxide film and carbon and oil coatings from the spark plug.

Accurate Valve Spring Tester

Tool No. S. T. 948



You really can't afford to be without this Valve Spring Tester. Every carbon and valve job should include an accurate check of the valve spring. Many of these lose their original tension after 20,000 to 30,000 miles of driving.

To test a valve spring — place the spring on center of weighing platform. Then loosen the locking clamp at top of the shaft. Compress spring to the reading in inches shown on the scale. This will automatically

show you weight in pounds when compressed to desired length. Lock the clamp at top of the shaft and the rest of the valve springs for each job can now be tested without further setting.

See standard sizes and adjustment for proper tension of valve springs used on different models.

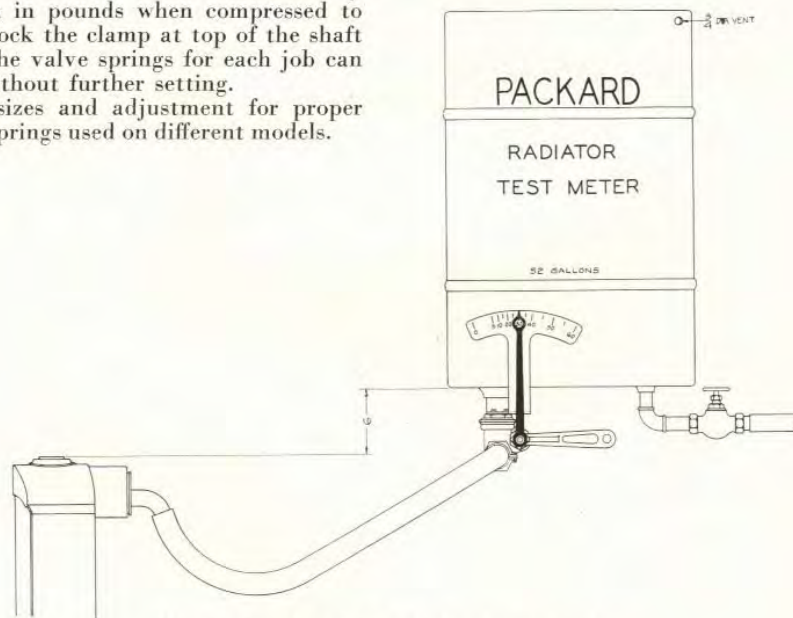
Battery Filler

Tool No. S. T. 932



This is entirely different than any other Battery Filler ever manufactured. It is made of molded vulcanite, and its capacity is one gallon. You can bounce it on the floor, kick it around, but it won't break. It's light in weight and of a beautiful glossy red color. It is practical for the most severe service.

The gauge glass shows the height of distilled water in the jug. The top opening holds any hydrometer and permits easy filling.



Radiator Test Tank Equipment

Tool No. S. T. 898

Instructions for Checking Dial Pointer:

1. Secure a 10-gallon container with an open top.
2. Place container on floor near the bottom of the tank within easy reach of the hose.
3. Fill the tank with water.
4. Open valve until pointer rests on "30," and check with a stop watch.
5. The time required should be 20 seconds. If it

varies more or less, change position of pointer on the shaft until it takes exactly 20 seconds to fill the 10-gallon receptacle with the pointer resting at "30" on the dial.

6. Lock and pin pointer in position. (NOTE—If flow checks O. K. at "30," it will not be necessary to check other calibrations.)

See Service Letter, Vol. 6, No. 21, for installation.

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Chisel and Punch Set.....	894	.60	39	Cutter Only—Heater—2 $\frac{1}{2}$ ".....	1415	1.25	43
Clip Expanding Tool—Radiator Shell Center Bar.....	937	2.50	27	Cutter Only—Heater—4".....	1416	1.85	43
Clip Nut Wrench—Front and Rear Axle Spring.....	786	2.85	28	Cutting Oil—Quart.....	706	.60	17
Clock Nut Spanner Wrench.....	854	.60	★	Cylinder Base Nut Wrench.....	170	1.00	11
Clutch Aligning and Release Lever Fixture.....	901	5.00	5	Cylinder Grinder Kerosene Drain Cup.....	904	4.00	16
Clutch Shaft Bearing Retaining Nut Wrench.....	914	3.85	43	Cylinder Grinder Kerosene Feed Can.....	655	3.45	★
Clutch Shaft Flywheel Bearing Puller.....	764	3.50	5	Cylinder Grinder Stones—Hutto—3 $\frac{3}{8}$ ".....	629	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{1}{2}$ ".....	630	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{1}{2}$ " (80 Grit).....	641	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{3}{8}$ " (80 Grit).....	642	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{1}{2}$ " (36 Grit).....	643	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{3}{8}$ " (46 Grit).....	644	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{3}{16}$ " (120 Grit).....	711	6.00	16
				Cylinder Grinder Stones—Hutto—3 $\frac{3}{16}$ " (80 Grit).....	712	6.00	16

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Alphabetical Tool Index—Continued

NAME	S. T. No.	Price	Page No.	NAME	S. T. No.	Price	Page No.
Cylinder Grinder Stones—Hutto—3 $\frac{3}{8}$ " (36 Grit).....	713	6.00	16	Fixture—Clutch Aligning and Release Lever.....	901	5.00	5
Cylinder Head and Shock Absorber Wrench.....	797	2.90	19	Fixture—Connecting Rod Piston Pin.....	731	3.90	16
Cylinder Head Lifter.....	121	1.35	22	Fixture—Timing and Ignition Checking.....	724	1.50	8
Cylinder Head Nut Wrench— $\frac{5}{8}$ " Opening.....	761	1.50	12	Flange Puller—Universal Joint.....	124	4.50	45
Cylinder Head Nut Wrench— $\frac{5}{8}$ " Opening.....	202	1.50	14	Flaring Tool—Copper Tube—Complete.....	768	7.00	45
Cylinder Head Nut Wrench— $\frac{3}{4}$ " Opening.....	228	2.50	14	Flaring Tool Cutter—Copper Tube.....	1385	3.00	45
Cylinder Head Nut Wrench— $\frac{3}{4}$ " Opening.....	222	1.10	10	Flaring Tool Only—Copper Tube.....	1384	4.00	45
Cylinder Head Nut Wrench— $\frac{3}{4}$ " Opening.....	224	3.30	14	Flushing Equip.—Radiator and Cylinder.....	890	2.00	27
Cylinder Head Nut Wrench— $\frac{5}{8}$ " Opening.....	225	3.30	14	Flushing Equip.—Radiator and Cylinder.....	765	15.40	27
Cylinder Head Nut Wrench.....	908	1.65	16	Flywheel Cranking Tool.....	801	2.75	19
Cylinder Head Stud Extractor.....	830	4.71	21				
Cylinder Port Hole Covers (2)—(Twin).....	871	.80	19	G			
D				Gasoline Line Frame Junction Wrench.....	783	1.00	12
Differential Jack.....	858	8.50	41	Gasoline Mileage Tester.....	828	7.40	42
Differential Jack Extension Cap.....	1427	3.50	41	Gasoline Pump Pressure Gauge Adapter.....	924	.80	41
Differential Pinion Bearing Adjusting Nut Wrench.....	112	1.05	★	Gasoline Pump Pressure Gauge Adapter.....	923	.80	41
Differential Pinion Gauge.....	671	2.80	28	Gasoline Pump Pressure Gauge Assembly.....	917	5.00	41
Differential Pinion Gauge.....	672	2.80	28	Gauge—Brake Selector Valve.....	929	3.75	4
Differential Side Bearing Adjusting Wrench.....	848	1.50	28	Gauge—Breaker Point.....	634	1.00	★
Differential Breaker Point Dressing Tool—Less Twin Six Holders.....	835	30.00	6	Gauge—Feeler—Brake Adjusting.....	846	.30	3
Distributor Breaker Point Dressing Tool—With Twin Six Holders.....	835	36.00	6	Gauge—Pedal Depression.....	659	.75	3
Distributor Breaker Point Gauge.....	634	1.00	★	Gauge—Pinion.....	671	2.80	28
Distributor Breaker Point Rubbing Block File.....	636	1.00	★	Gauge—Pinion.....	672	2.80	28
Distributor Breaker Point Spring Tension Scale.....	633	1.85	★	Gauge—Thickness.....	657	1.50	9
Distributor Breaker Point Synchronizing Tool.....	682	.75	★	Gauge—Thickness—Brake.....	846	.30	3
Distributor Breaker Point Thickness Gauge.....	657	1.50	9	Gauge—Tire.....	770	9.50	42
Distributor Breaker Point Wrench.....	632	.15	★	Gauge—Valve—Depth.....	912	4.00	15
Distributor Breaker Point Wrench.....	868	.06	6	Gauge—Wheel—For Trimming Wheels.....	128	10.00	33
Distributor Breaker Point Wrenches—(2)—N. E. Dist.....	739	.35	6	Gauge Holder—Feeler.....	153	.60	13
Distributor Contact Adjusting Tool.....	631	1.85	★	Glazebreaker—45°.....	1354	5.00	★
Distributor High Tension Cable Nut Wrench.....	918	1.45	7	Glazebreaker—30°.....	1396	5.00	★
Distributor Housing Anchor Bolt Wrench.....	909	.55	15	Graphite Lubricating Gun.....	931	.75	42
Distributor Synchronizer—Double—Twin.....	913	9.25	9	Graphite Lubricating Gun Nozzle—3".....	1440	.15	★
Distributor Synchronizer Tool.....	907	1.25	8	Graphite Refill—For S. T. 931.....	1441	.50	★
Door Handle Spanner Wrench—Inside.....	829	1.50	44	Grinder—Valve—Compressed Air.....	752	12.50	23
Door Handle Spanner Wrench—Outside.....	949	1.10	45				
Door Hinge Pin Reamer Equipment.....	742	3.00	44	H			
Door Hinge Pin Reamer Equipment.....	850	3.00	44	Headlight Covers—Per Pair.....	834	1.40	38
Drift—Shock Absorber Ball Joint.....	811	3.00	30	Headlight Nut Wrench.....	747	2.50	43
Drift—Spring Bolt Replacing.....	825	1.60	38	Hoist—Transmission.....	844	7.50	34
Drill Jig—Tail Lamp Bracket.....	818	1.00	★	Hoisting Bar—Car.....	862	4.25	40
Drill Jig—Transmission Driving Shaft.....	813	1.00	★	Horn Button Contact Screw Wrench.....	853	1.40	32
				Horn Button Wrench.....	757	.75	33
E				Horn Nut Wrench.....	920	1.20	43
Engine Rest.....	919	8.75	16	Hub Cap Wrench.....	951	3.35	35
Envelope—Celluloid—Repair Order.....	816	.45	★	Hub Cap Wrench.....	782	2.75	35
Equipment—Valve Reseating.....	952	123.35	23	Hub Cap Wrench Clip—For S. T. 782.....	1401	.55	★
Exhaust and Inlet Manifold Socket Wrench.....	781	2.00	21	Hub Cap Wrench Handle—For S. T. 782.....	1061	1.20	★
Exhaust Manifold Nut Wrench.....	176	.75	20	Hub Cap Wrench Strap—For S. T. 782.....	1412	.90	35
Exhaust Pipe Nut Wrench.....	763	1.15	20	Hutto Grinder Stones—3 $\frac{3}{8}$ ".....	629	6.00	16
Expander—Piston Ring.....	197	1.25	14	Hutto Grinder Stones—3 $\frac{1}{2}$ ".....	630	6.00	16
Extractor—Cylinder Head Stud.....	830	4.71	21	Hutto Grinder Stones—3 $\frac{1}{2}$ " (80 Grit).....	641	6.00	16
Extractor—General Utility.....	831	7.50	21	Hutto Grinder Stones—3 $\frac{3}{8}$ " (80 Grit).....	642	6.00	16
Extractor—Stud.....	842	7.75	★	Hutto Grinder Stones—3 $\frac{1}{2}$ " (36 Grit).....	643	6.00	16
				Hutto Grinder Stones—3 $\frac{3}{8}$ " (46 Grit).....	644	6.00	16
F				Hutto Grinder Stones—3 $\frac{3}{8}$ " (120 Grit).....	711	6.00	16
Fan Belt Tension Scale.....	889	7.50	★	Hutto Grinder Stones—3 $\frac{3}{16}$ " (80 Grit).....	712	6.00	16
Fan Belt Tension Scale.....	793	1.00	★	Hutto Grinder Stones—3 $\frac{3}{16}$ " (36 Grit).....	713	6.00	16
Feeler Gauge—Brake Adjusting.....	846	.30	3	Hydrometer—Radiator.....	753	3.50	41
Feeler Gauge Holder.....	153	.60	13				
Feeler Strip (.0015")—Per Foot.....	646	.15	14	I			
Feeler Strip (.002")—Per Foot.....	647	.15	14	Ignition Cable Terminal Crimping Tool.....	910	2.10	9
Feeler Strip (.003")—Per Foot.....	166	.14	14	Ignition Cable Terminal Crimping Tool—(12th Series).....	946	3.25	7
Feeler Strip (.004")—Per Foot.....	167	.08	14	Ignition Checking Fixture.....	724	1.50	8
Feeler Strip (.005")—Per Foot.....	648	.10	14	Ignition Coil and Condenser Tester.....	778	5.00	7
Feeler Strip (.006")—Per Foot.....	697	.10	14	Ignition Switch Lever Screwdriver.....	635	.30	★
Fender Covers—Per Pair.....	130	5.95	38	Ignition Switch and Door Lock Spanner Wrench.....	891	1.50	44
File—Distributor Point Rubbing Block.....	636	1.00	★	Ignition Timing Master.....	935	6.00	6
Filler—Battery.....	932	2.65	46	Indicator—Transmission Synchro-Mesh.....	837	11.00	34
				Indicator—Valve Reseating.....	1409	13.50	23
				Inlet and Exhaust Manifold Socket Wrench.....	781	2.00	21
				Inside Door Handle Spanner Wrench.....	829	1.50	44
				J			
				Jack—Combination Shop.....	154	3.25	40

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Alphabetical Tool Index—Continued

NAME	S. T. No.	Price	Page No.	NAME	S. T. No.	Price	Page No.
Jack—For Motor Work.....	155	3.25	40	Nut Wrench—Cylinder Head.....	761	1.50	12
Jack—Hydraulic.....	788	47.50	40	Nut Wrench—Cylinder Head.....	202	1.50	14
Jack—Walker.....	858	8.50	41	Nut Wrench—Cylinder Head—Tee Handle	228	2.50	14
Jack Adapter—Walker.....	1427	3.50	41	Nut Wrench—Cylinder Head.....	222	1.10	10
K				Nut Wrench—Cylinder Head.....	224	3.30	14
Kerosene Drain Cup—Cylinder Grinder.....	904	4.00	16	Nut Wrench—Cylinder Head.....	225	3.30	14
Kerosene Feed Can—Cylinder Grinder.....	655	3.45	★	Nut Wrench—Cylinder Head.....	908	1.65	16
Key Inserter—Valve.....	864	2.00	25	Nut Wrench—Cylinder Head and Shock			
Kit—Chassis Lubricator Service.....	930	12.50	39	Absorber.....	797	2.90	19
L				Nut Wrench—Differential Pinion Bearing			
Lifter—Battery.....	841	1.25	42	Adjusting.....	112	1.05	★
Lifter—Cylinder Head.....	121	1.35	22	Nut Wrench—Distributor High Tension			
Lifter—Radiator.....	838	3.50	27	Wire.....	918	1.45	7
Lifter—Radiator.....	851	3.50	27	Nut Wrench—Exhaust and Intake Mani-			
Lifter—Transmission.....	817	1.00	34	fold.....	781	2.00	21
Lifter—Valve.....	860	8.50	25	Nut Wrench—Exhaust Manifold.....	176	.75	20
Lifter—Valve.....	826	9.50	24	Nut Wrench—Front and Rear Axle Spring			
Lifter—Valve.....	215	4.75	★	Clip.....	786	2.85	28
Lifter—Valve.....	223	5.00	★	Nut Wrench—Gasoline Line Frame Junc-			
Lifter—Valve.....	780	3.00	24	tion.....	783	1.00	12
Locophone.....	165	2.50	12	Nut Wrench—Headlight.....	747	2.50	43
Lubricating Gun—Graphite.....	931	.75	42	Nut Wrench—Horn Trumpet.....	920	1.20	43
Lubricating Gun Nozzle.....	1440	.15	★	Nut Wrench—Oil Pump Relief Valve Body	925	2.50	20
Lubricating Gun Refill.....	1441	.50	★	Nut Wrench—Piston Lubricator Valve and			
Lubricating System Test Tank.....	109	16.00	18	Exhaust Pipe.....	763	1.15	20
Lubricating System Test Tank Connection	1429	1.25	18	Nut Wrench—Radiator Core Anchorage.....	729	4.00	★
M				Nut Wrench—Radiator Tie Rod and Spring			
Main and Conn. Rod Bearing Nut Wrench..	192	1.75	17	Bolt.....	821	2.25	27
Main Bearing Cap and Valve Guide Puller..	863	2.75	25	Nut Wrench—Rear Axle Bearing Adjusting			
Main Bearing Nut Wrench.....	721	1.75	17	and Radiator Packing.....	749	2.50	28
Manifold Socket Wrench—Intake and				Nut Wrench—Rear Axle Shaft.....	849	2.90	29
Exhaust.....	781	2.00	21	Nut Wrench—Rear Axle Shaft.....	133	2.90	29
Mechanic's Creeper—(Price on Request)....	827		★	Nut Wrench—Rear Axle Shaft.....	748	2.90	29
Mechanic's Suit—Tan—Size 36.....	660	3.35	37	Nut Wrench—Shock Absorber to Frame.....	876	.80	30
Mechanic's Suit—Tan—Size 38.....	661	3.35	37	Nut Wrench—Spring Bolt.....	847	2.70	3
Mechanic's Suit—Tan—Size 40.....	662	3.35	37	Nut Wrench—Steering Lever and Radiator	823	3.00	33
Mechanic's Suit—Tan—Size 42.....	663	3.35	37	Nut Wrench—Valve Tappet.....	216	1.00	22
Mechanic's Suit—Tan—Size 44.....	664	3.35	37	Nut Wrench—Vibration Damper.....	855	2.00	20
Mechanic's Suit—Tan—Size 46.....	665	3.70	37	Nut Wrench—Vibration Damper.....	947	2.75	20
Mechanic's Suit—Tan—Size 48.....	666	3.70	37	Nut Wrench—Water Pump.....	802	1.50	21
Mechanic's Suit—White—Size 36.....	450	3.00	37	Nut Wrench—Water Pump.....	805	1.30	21
Mechanic's Suit—White—Size 38.....	451	3.00	37	Nut Wrench—Water Pump.....	878	1.30	21
Mechanic's Suit—White—Size 40.....	452	3.00	37	O			
Mechanic's Suit—White—Size 42.....	453	3.00	37	Oil—Cutting—Quart.....	706	.60	17
Mechanic's Suit—White—Size 44.....	454	3.00	37	Oil Pump and Camshaft Gear Mirror.....	896	1.50	18
Mechanic's Suit—White—Size 46.....	455	3.25	37	Oil Pump Pressure Relief Valve Body Nut			
Mechanic's Suit—White—Size 48.....	456	3.25	37	Wrench.....	925	2.50	20
Mechanic's Tool Roll Equipment.....	612	3.10	39	Oil Pump Relief Valve Reseater.....	670	3.15	19
Mileage Tester—Gasoline.....	828	7.40	42	Oil Pump Wrench.....	740	1.90	19
Motor Support.....	919	8.75	16	Oil Test Connection.....	1429	1.25	18
Motoscope.....	796	17.50	8	Outside Door Handle Spanner Wrench.....	949	1.10	45
N				P			
Nozzle—Graphite Lubricating Gun.....	1440	.15	★	Patent Plate Stamping Set.....	710	25.00	38
Nut—Axle Shaft Bearing Cup Puller.....	1442	1.75	29	Pilot—Valve Reseating—Standard.....	1425	1.25	23
Nut—Axle Shaft Bearing Cup Puller.....	1443	1.75	29	Pilot—Valve Reseating—.001" oversize.....	1406	1.25	23
Nut Wrench—Brake Anchor Bolt and Ec-				Pilot—Valve Reseating—.002" oversize.....	1407	1.25	23
centric— $\frac{3}{4}$ " and $1\frac{1}{8}$ ".....	738	2.75	4	Pilot—Valve Reseating—.003" oversize.....	1408	1.25	23
Nut Wrench—Brake Anchor Bolt and Ther-				Pilot—Valve Reseating—.004" oversize.....	1410	1.25	23
mometer— $\frac{3}{4}$ ".....	734	1.35	20	Pilot—Valve Reseating—.005" oversize.....	1411	1.25	23
Nut Wrench—Brake Anchor Bolt and Ther-				Pin—Connecting Rod and Piston Assem-			
mometer— $\frac{5}{8}$ ".....	737	1.35	20	bling.....	726	1.00	16
Nut Wrench—Clock—Spanner.....	854	.60	★	Piston Lubricator Valve and Exhaust Pipe			
Nut Wrench—Clutch Shaft—Spanner.....	836	1.50	5	Nut Wrench.....	763	1.15	20
Nut Wrench—Clutch Shaft Bearing Re-				Piston Pin Bushing Reamer— $\frac{3}{4}$ " Pin.....	833	7.75	13
taining.....	914	3.85	43	Piston Pin Bushing Reamer— $\frac{7}{8}$ " Pin.....	832	7.75	13
Nut Wrench—Connecting Rod.....	191	1.60	17	Piston Pin Bushing Reamer Wrench.....	716	1.95	13
Nut Wrench—Connecting Rod—Twin.....	950	1.60	17	Piston Pin Fixture.....	731	3.90	16
Nut Wrench—Crankcase Front End Bolt....	172	1.25	22	Piston Ring Compressor—Complete.....	774	1.20	14
Nut Wrench—Crankcase Main Bearing.....	721	1.75	17	Piston Ring Compressor Band Only.....	1390	.40	14
Nut Wrench—Crankcase Main and Con-				Piston Ring Compressor Band Only.....	872	1.10	15
necting Bearing.....	192	1.75	17	Piston Ring Compressor Tongs Only.....	1389	.80	14
Nut Wrench—Cylinder Base.....	170	1.00	11	Piston Ring Expander.....	197	1.25	14
				Piston Sleeve— $3\frac{1}{2}$ ".....	649	6.50	★
				Pry Bar.....	903	.60	39
				Puller—Bearing.....	884	18.50	43
				Puller—Clutch Shaft Flywheel Bearing.....	764	3.50	5

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Alphabetical Tool Index—Continued

NAME	S. T. No.	Price	Page No.	NAME	S. T. No.	Price	Page No.
Puller—Clutch Spider.....	189	2.50	★	Screw Driver—Neon Tube—Special.....	916	.80	8
Puller—Flange—Universal Joint.....	124	4.50	45	Screw Driver—Offset—Shock Absorber.....	784	1.00	30
Puller—Rear Axle Shaft.....	120	4.80	★	Screw Driver—Switch Lever.....	635	.30	★
Puller—Rear Axle Shaft Bearing Cup.....	928	8.00	28	Screw Wrench—Horn Button Contact.....	853	1.40	32
Puller—Shock Absorber Arm Bushing.....	934	1.50	30	Seat Cover—Front.....	144	2.45	38
Puller—Shock Absorber Connecting Link.....	790	3.85	30	Shock Absorber Adjusting Wrench.....	743	1.75	★
Puller—Shock Absorber Lever.....	732	2.80	30	Shock Absorber Arm Bushing Puller and Replacer.....	934	1.50	30
Puller—Sprocket and Pulley.....	113	9.75	24	Shock Absorber Ball Joint Wedge.....	811	3.00	30
Puller—Steering Cross Tube Ball Joint.....	653	2.00	32	Shock Absorber Connecting Link Puller.....	790	3.85	30
Puller—Steering Knuckle Pin.....	704	16.00	32	Shock Absorber Lever Puller.....	732	2.80	30
Puller—Steering Lever.....	135	8.50	31	Shock Absorber and Cylinder Head Nut Wrench.....	797	2.90	19
Puller—Steering Wheel Hub.....	938	4.50	31	Shock Absorber to Frame Nut Wrench.....	876	.80	30
Puller—Valve Guide and Main Bearing Cap.....	863	2.75	25	Shop Caps.....	819	.10	37
Puller—Vibration Damper.....	856	3.25	21	Side Wheel Cover.....	358	1.50	38
Puller—Wheel—Heavy Duty (2 $\frac{1}{4}$ ".....)	123	6.10	35	Sleeve—Piston—3 $\frac{1}{2}$ ".....	649	6.50	★
Puller—Wheel—Heavy Duty—(K. & G. Type)—(Less Adapters).....	955	17.50	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	940	1.90	28
Puller—Wheel—Heavy Duty—(2 $\frac{1}{8}$ ".....)	746	5.00	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	941	1.90	28
Puller Adapter—Wheel—(2 $\frac{1}{8}$ ".....)	1371	2.00	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	942	1.90	28
Puller Adapter—Wheel—(2 $\frac{1}{8}$ ".....)	1253	2.00	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	943	1.90	28
Puller Adapter—Wheel—(2 $\frac{1}{8}$ ".....)	1430	2.00	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	944	1.90	28
Puller Adapter—Wheel—(2 $\frac{1}{2}$ ".....)	1431	2.00	35	Sleeve—Rear Axle Shaft Bearing Lubricator.....	933	1.90	28
Puller Jaw—Valve.....	1398	.85	22	Spanner Wrench—Clock Nut.....	854	.60	★
Puller Wedge—Wheel.....	1256	1.25	35	Spanner Wrench—Clutch Shaft Nut.....	836	1.50	5
Punch and Anvil for Valve Cover Gasket.....	744	1.50	22	Spanner Wrench—Differential Bearing.....	848	1.50	28
Punch and Chisel Set.....	894	.60	39	Spanner Wrench—Door Handle.....	829	1.50	44
R				Spanner Wrench—Door Handle—Outside.....	949	1.10	45
Radiator and Steering Lever Nut Wrench.....	823	3.00	33	Spanner Wrench—Ignition Switch.....	891	1.50	44
Radiator Cover.....	357	1.60	38	Spark Plug Cleaner.....	897	5.50	45
Radiator Flushing Tool.....	890	2.00	27	Spark Plug Cleaner Compound.....	902	.35	45
Radiator Flushing Tool.....	765	15.40	27	Spark Plug Gap Adjusting Tool.....	927	.10	7
Radiator Hydrometer Zero Tester.....	753	3.50	41	Spark Plug Tester.....	859	3.00	★
Radiator Lifter.....	838	3.50	27	Spark Plug Wrench.....	734	1.35	20
Radiator Lifter.....	851	3.50	27	Spark Plug Wrench.....	737	1.35	20
Radiator Nut Wrench—Core Anchorage.....	729	4.00	★	Spring Bolt Nut Wrench.....	821	2.25	27
Radiator Shell Center Bar Clip Expanding Tool.....	937	2.50	27	Spring Bolt Replacing Drift.....	825	1.60	38
Radiator Test Tank Equipment.....	898	15.00	46	Spring Bushing Replacer.....	161	5.00	★
Radiator Tie Rod and Spring Bolt Nut Wrench.....	821	2.25	27	Spring Clip Nut Wrench—Front and Rear.....	786	2.85	28
Reamer—Connecting Rod Bearing—(1 $\frac{3}{4}$ ".....)	618	17.00	★	Sprocket Puller.....	113	9.75	24
Reamer—Door Hinge Pin.....	742	3.00	44	Stamping Set—Patent Plate.....	710	25.00	38
Reamer—Door Hinge Pin.....	850	3.00	44	Steering Cross Tube Ball Joint Puller.....	653	2.00	32
Reamer—Piston Pin Bushing—(3 $\frac{1}{4}$ ".....)	833	7.75	13	Steering Knuckle Pin Puller.....	704	16.00	32
Reamer—Piston Pin Bushing—(7 $\frac{1}{8}$ ".....)	832	7.75	13	Steering Knuckle Plug Wrench.....	195	1.90	32
Reamer Wrench.....	716	1.95	13	Steering Lever and Radiator Anchor Bolt Nut Wrench.....	823	3.00	33
Reax Axle Shaft Bearing Adjusting Nut and Radiator Packing Nut Wrench.....	749	2.50	28	Steering Lever Aligner.....	915	25.00	31
Rear Axle Shaft Bearing Cup Puller.....	928	8.00	28	Steering Lever Puller.....	135	8.50	31
Rear Axle Shaft Bearing Cup Puller Nut.....	1442	1.75	29	Steering Sector Alignment Plug.....	723	1.25	★
Rear Axle Shaft Bearing Cup Puller Nut.....	1443	1.75	29	Steering Wheel Cover.....	149	.55	38
Rear Axle Shaft Bearing Lubricator Sleeve.....	933	1.90	28	Steering Wheel Puller.....	938	4.50	31
Rear Axle Shaft Bearing Lubricator Sleeve.....	940	1.90	28	Steering Wheel Puller Adapter Nut.....	1437	1.00	31
Rear Axle Shaft Bearing Lubricator Sleeve.....	941	1.90	28	Strainer Body Stud Socket Wrench.....	750	1.25	10
Rear Axle Shaft Bearing Lubricator Sleeve.....	942	1.90	28	Stud Driver and Remover.....	755	1.50	24
Rear Axle Shaft Bearing Lubricator Sleeve.....	943	1.90	28	Stud Extractors.....	842	7.75	★
Rear Axle Shaft Bearing Lubricator Sleeve.....	944	1.90	28	Stud Extractors—Cylinder Head.....	830	4.71	21
Rear Axle Shaft Nut Wrench.....	849	2.90	29	Synchronizer—Distributor—(Twin).....	913	9.25	9
Rear Axle Shaft Nut Wrench.....	133	2.90	29	Synchronizer—Distributor.....	907	1.25	8
Rear Axle Shaft Nut Wrench.....	748	2.90	29	Synchro. Yoke Spring Wrench—Trans.....	861	.85	34
Rear Axle Shaft Puller.....	120	4.80	★	Synchronizing Tool—Distributor Breaker Point.....	682	.75	★
Rear Axle Spring Clip Nut Wrench.....	786	2.85	28	T			
Rear Bearing Cap and Valve Guide Puller.....	863	2.75	25	Tail Lamp Bracket Drill Jig.....	818	1.00	★
Repair Order Envelope.....	816	.45	★	Tape—1 Inch—(Per Roll).....	881	.60	★
Rocker Lever Assembling Aligning Bar—Twin.....	899	.60	25	Tape—2 Inch—(Per Roll).....	882	1.15	★
Rocker Lever Holders (2).....	879	.70	23	Tappet Wrench.....	216	1.00	22
Rocker Lever Housing Plug Wrench.....	866	1.00	26	Test Tank—Lubricating System.....	109	16.00	18
Rocker Lever Piston Release Lever Tool.....	911	1.90	15	Test Tank Connection—Lubricating System.....	1429	1.25	18
Rocker Lever Shaft Wrench—Twin.....	900	1.00	26	Thermometer Nut Wrench.....	737	1.35	20
S				Thermometer Nut Wrench.....	734	1.35	20
Scale—Distributor Point Spring Tension.....	633	1.85	★	Thickness Gauge.....	657	1.50	9
Scale—Fan Belt Tension.....	889	7.50	★	Thickness Gauge—Brake.....	846	.30	3
Scale—Fan Belt Tension.....	793	1.00	★	Tie Rod Wrench—Radiator.....	821	2.25	27
S				Timing and Ignition Checking Fixture.....	724	1.50	8
Screw Driver—Neon Tube—Special.....	916	.80	8	Timing Master—Ignition.....	935	6.00	6
Screw Driver—Offset—Shock Absorber.....	784	1.00	30	Tire Gauge.....	770	9.50	42
Screw Driver—Switch Lever.....	635	.30	★				
Screw Wrench—Horn Button Contact.....	853	1.40	32				
Seat Cover—Front.....	144	2.45	38				
Shock Absorber Adjusting Wrench.....	743	1.75	★				
Shock Absorber Arm Bushing Puller and Replacer.....	934	1.50	30				
Shock Absorber Ball Joint Wedge.....	811	3.00	30				
Shock Absorber Connecting Link Puller.....	790	3.85	30				
Shock Absorber Lever Puller.....	732	2.80	30				
Shock Absorber and Cylinder Head Nut Wrench.....	797	2.90	19				
Shock Absorber to Frame Nut Wrench.....	876	.80	30				
Shop Caps.....	819	.10	37				
Side Wheel Cover.....	358	1.50	38				
Sleeve—Piston—3 $\frac{1}{2}$ ".....	649	6.50	★				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	940	1.90	28				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	941	1.90	28				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	942	1.90	28				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	943	1.90	28				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	944	1.90	28				
Sleeve—Rear Axle Shaft Bearing Lubricator.....	933	1.90	28				
Spanner Wrench—Clock Nut.....	854	.60	★				
Spanner Wrench—Clutch Shaft Nut.....	836	1.50	5				
Spanner Wrench—Differential Bearing.....	848	1.50	28				
Spanner Wrench—Door Handle.....	829	1.50	44				
Spanner Wrench—Door Handle—Outside.....	949	1.10	45				
Spanner Wrench—Ignition Switch.....	891	1.50	44				
Spark Plug Cleaner.....	897	5.50	45				
Spark Plug Cleaner Compound.....	902	.35	45				
Spark Plug Gap Adjusting Tool.....	927	.10	7				
Spark Plug Tester.....	859	3.00	★				
Spark Plug Wrench.....	734	1.35	20				
Spark Plug Wrench.....	737	1.35	20				
Spring Bolt Nut Wrench.....	821	2.25	27				
Spring Bolt Replacing Drift.....	825	1.60	38				
Spring Bushing Replacer.....	161	5.00	★				
Spring Clip Nut Wrench—Front and Rear.....	786	2.85	28				
Sprocket Puller.....	113	9.75	24				
Stamping Set—Patent Plate.....	710	25.00	38				
Steering Cross Tube Ball Joint Puller.....	653	2.00	32				
Steering Knuckle Pin Puller.....	704	16.00	32				
Steering Knuckle Plug Wrench.....	195	1.90	32				
Steering Lever and Radiator Anchor Bolt Nut Wrench.....	823	3.00	33				
Steering Lever Aligner.....	915	25.00	31				
Steering Lever Puller.....	135	8.50	31				
Steering Sector Alignment Plug.....	723	1.25	★				
Steering Wheel Cover.....	149	.55	38				
Steering Wheel Puller.....	938	4.50	31				
Steering Wheel Puller Adapter Nut.....	1437	1.00	31				
Strainer Body Stud Socket Wrench.....	750	1.25	10				
Stud Driver and Remover.....	755	1.50	24				
Stud Extractors.....	842	7.75	★				
Stud Extractors—Cylinder Head.....	830	4.71	21				
Synchronizer—Distributor—(Twin).....	913	9.25	9				
Synchronizer—Distributor.....	907	1.25	8				
Synchro. Yoke Spring Wrench—Trans.....	861	.85	34				
Synchronizing Tool—Distributor Breaker Point.....	682	.75	★				

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Alphabetical Tool Index—Continued

NAME	S. T. No.	Price	Page No.	NAME	S. T. No.	Price	Page No.
Transmission Clutch Shaft Bearing Nut				Valve Seat Cutter Pilot—.002" oversize	1407	1.25	23
Wrench	914	3.85	43	Valve Seat Cutter Pilot—.003" oversize	1408	1.25	23
Transmission Driving Shaft Drill Jig	813	1.00	★	Valve Seat Cutter Pilot—.004" oversize	1410	1.25	23
Transmission Hoist	844	7.50	34	Valve Seat Cutter Pilot—.005" oversize	1411	1.25	23
Transmission Lifter	817	1.00	34	Valve Seat Indicator	1409	13.50	23
Transmission Synchronizer Indicator	837	11.00	34	Valve Seat Finishing Cutter (45°)—1 $\frac{7}{8}$ "	1449	3.00	23
Transmission Synchronizer Yoke Centralizing Spring Wrench	861	.85	34	Valve Seat Replacement Cutter—1 $\frac{1}{16}$ "	1444	4.00	23
U				Valve Seat Replacement Cutter—1 $\frac{3}{4}$ "	1445	4.00	23
Utility Extractor—General	831	7.50	21	Valve Seat Replacement Cutter—1 $\frac{7}{8}$ "	1446	4.00	23
Universal Joint Flange Puller	124	4.50	45	Valve Seat Roughing Cutter (15°)—1 $\frac{7}{8}$ "	1447	3.00	23
Universal Wrench— $\frac{9}{16}$ "	803	2.25	★	Valve Seat Roughing Cutter (45°)—1 $\frac{7}{8}$ "	1448	3.00	23
Universal Wrench— $\frac{11}{16}$ "	875	1.90	11	Valve Seat Throat Cutter (75°)—1 $\frac{1}{8}$ "	1450	3.00	23
Universal Wrench— $\frac{13}{16}$ "	202	1.50	14	Valve Seat Throat Cutter (75°)—1 $\frac{1}{2}$ "	1451	3.00	23
Universal Wrench— $\frac{3}{4}$ "	228	2.50	14	Valve Seat Throat Cutter (75°)—1 $\frac{3}{8}$ "	1452	3.00	23
V				Valve Spring Seat Counter Boring Tool	877	7.25	★
Vacuum Tank Testing Adapter	787	.20	★	Valve Spring Tester	948	29.50	46
Valve Cover Punch and Anvil	744	1.50	22	Valve Tappet Feeler Gauge Holder	153	.60	13
Valve Depth Gauge	912	4.00	15	Valve Tappet Wrench	216	1.00	22
Valve Grinder—Compressed Air	752	12.50	23	Vehicle Plate Stamping Set	710	25.00	38
Valve Guide Cleaner	212	1.25	25	Vibration Damper Nut Wrench	947	2.75	20
Valve Guide Lock Ring Replacer	867	3.00	22	Vibration Damper Nut Wrench	855	2.00	20
Valve Guide Puller	863	2.75	25	Vibration Damper Puller	856	3.25	21
Valve Key Inserter	864	2.00	25	Vibration Damper Test Bar	727	2.40	★
Valve Lifter	215	4.75	★	W			
Valve Lifter	223	5.00	★	Walker Jack	858	8.50	41
Valve Lifter—Heavy Duty	780	3.00	24	Walker Jack Adapter	1427	3.50	41
Valve Lifter	826	9.50	24	Water Pump Packing Nut Wrench—1 $\frac{5}{16}$ "	802	1.50	21
Valve Lifter—Twin	860	8.50	25	Water Pump Packing Nut Wrench—1 $\frac{1}{2}$ "	805	1.30	21
Valve Puller Jaw	1398	.85	22	Water Pump Packing Nut Wrench—1 $\frac{7}{16}$ "	878	1.30	21
Valve Rack	217	2.50	★	Wheel Cover—Side Wheel	358	1.50	38
Valve Rack (2)—Twin	874	1.70	25	Wheel Gauge—For Trimming Wheels	128	10.00	33
Valve Reseating Equipment	952	123.35	23	Wheel Puller—Heavy Duty	123	6.10	35
Valve Rocker Lever Holders (2)	879	.70	23	Wheel Puller—Heavy Duty—Less Adapters	955	17.50	35
Valve Rocker Lever Housing Plug Wrench	866	1.00	26	Wheel Puller—Heavy Duty	746	5.00	35
Valve Rocker Lever Piston Release Lever Tool	911	1.90	15	Wheel Puller Adapter—2 $\frac{1}{8}$ "	1371	2.00	35
Valve Seat Cutter Pilot—Standard	1425	1.25	23	Wheel Puller Adapter—2 $\frac{13}{16}$ "	1253	2.00	35
Valve Seat Cutter Pilot—.001" oversize	1406	1.25	23	Wheel Puller Adapter—2 $\frac{3}{16}$ "	1430	2.00	35
				Wheel Puller Adapter—2 $\frac{1}{2}$ "	1431	2.00	35
				Wheel Puller Adapter—Steering	1437	1.00	31
				Wheel Puller Wedge	1256	1.25	35
				Window Moulding Remover	922	4.00	44

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Numerical Index

S. T. No.	Illustration Page No.	Price	S. T. No.	Illustration Page No.	Price	S. T. No.	Illustration Page No.	Price	S. T. No.	Illustration Page No.	Price	S. T. No.	Illustration Page No.	Price
109	18	\$16.00	606	37	\$ 3.25	750	10	\$ 1.25	852	3	\$ 1.00	930	39	\$12.50
112	★	1.05	612	39	3.10	751	10	2.00	853	32	1.40	931	42	.75
113	24	9.75	618	★	17.00	752	23	12.50	854	★	.60	932	46	2.65
120	★	4.80	629	16	6.00	753	41	3.50	855	20	2.00	933	28	1.90
121	22	1.35	630	16	6.00	755	24	1.50	856	21	3.25	934	30	1.50
123	35	6.10	631	★	1.85	757	33	.75	858	41	8.50	935	6	6.00
124	45	4.50	632	★	.15	758	15	40.00	859	★	3.00	936	37	.25
127	★	4.75	633	★	1.85	761	12	1.50	860	25	8.50	937	27	2.50
128	33	10.00	634	★	1.00	762	4	2.00	861	34	.85	938	31	4.50
130	38	5.95	635	★	.30	763	20	1.15	862	40	4.25	940	28	1.90
133	29	2.90	636	★	1.00	764	5	3.50	863	25	2.75	941	28	1.90
135	31	8.50	639	18	1.95	765	27	15.40	864	25	2.00	942	28	1.90
144	38	2.45	641	16	6.00	766	3	3.00	866	26	1.00	943	28	1.90
146	38	3.00	642	16	6.00	768	45	7.00	867	22	3.00	944	28	1.90
148	38	1.40	643	16	6.00	770	42	9.50	868	6	.06	945	9	9.15
149	38	.55	644	16	6.00	773	3	3.00	869	10	5.50	946	7	3.25
150	38	.15	646	14	.15	774	14	1.20	871	19	.80	947	20	2.75
153	13	.60	647	14	.15	778	7	5.00	872	15	1.10	948	46	29.50
154	40	3.25	648	14	.10	780	24	3.00	873	33	7.50	949	45	1.10
155	40	3.25	649	★	6.50	781	21	2.00	874	25	1.70	950	17	1.60
161	★	5.00	653	32	2.00	782	35	2.75	875	11	1.90	951	35	3.35
165	12	2.50	655	★	3.45	783	12	1.00	876	30	.80	952	23	123.35
166	14	.14	657	9	1.50	784	30	1.00	877	★	7.25	953	12	2.00
167	14	.08	659	3	.75	786	28	2.85	878	21	1.30	954	11	2.20
170	11	1.00	660	37	3.35	787	★	.20	879	23	.70	955	35	17.50
172	22	1.25	661	37	3.35	788	40	47.50	880	45	1.00	1061	★	1.20
176	20	.75	662	37	3.35	790	30	3.85	881	★	.60	1253	35	2.00
186	3	1.00	663	37	3.35	791	41	2.00	882	★	1.15	1256	35	1.25
189	★	2.50	664	37	3.35	793	★	1.00	883	★	5.50	1354	★	5.00
190	3	4.25	665	37	3.70	796	8	17.50	884	43	18.50	1358	43	1.50
191	17	1.60	666	37	3.70	797	19	2.90	885	12	17.50	1371	35	2.00
192	17	1.75	670	19	3.15	801	19	2.75	886	★	4.00	1384	45	4.00
193	11	4.50	671	28	2.80	802	21	1.50	889	★	7.50	1385	45	3.00
195	32	1.90	672	28	2.80	803	★	2.25	890	27	2.00	1389	14	.80
197	14	1.25	682	★	.75	805	21	1.30	891	44	1.50	1390	14	.40
202	14	1.50	697	14	.10	811	30	3.00	894	39	.60	1396	★	5.00
204	11	2.20	702	★	.30	813	★	1.00	895	17	75.00	1398	22	.85
205	12	2.00	703	★	.35	816	★	.45	896	18	1.50	1401	★	.55
212	25	1.25	704	32	16.00	817	34	1.00	897	45	5.50	1406	23	1.25
215	★	4.75	706	17	.60	818	★	1.00	898	46	15.00	1407	23	1.25
216	22	1.00	707	17	55.00	819	37	.10	899	25	.60	1408	23	1.25
217	★	2.50	710	38	25.00	820	10	1.75	900	26	1.00	1409	23	13.50
222	10	1.10	711	16	6.00	821	27	2.25	901	5	5.00	1410	23	1.25
223	★	5.00	712	16	6.00	823	33	3.00	902	45	.35	1411	23	1.25
224	14	3.30	713	16	6.00	825	38	1.60	903	39	.60	1412	35	.90
225	14	3.30	716	13	1.95	826	24	9.50	904	16	4.00	1415	43	1.25
228	14	2.50	721	17	1.75	827	★		905	13	261.25	1416	43	1.85
350	37	3.00	723	★	1.25	828	42	7.40	907	8	1.25	1425	23	1.25
351	37	3.00	724	8	1.50	829	44	1.50	908	16	1.65	1426	13	37.50
352	37	3.00	726	16	1.00	830	21	4.71	909	15	.55	1427	41	3.50
353	37	3.00	727	★	2.40	831	21	7.50	910	9	2.10	1429	18	1.25
354	37	3.00	729	★	4.00	832	13	7.75	911	15	1.90	1430	35	2.00
355	37	3.30	730	43	4.50	833	13	7.75	912	15	4.00	1431	35	2.00
356	37	3.30	731	16	3.90	834	38	1.40	913	9	9.25	1437	31	1.00
357	38	1.60	732	30	2.80	835	6	30.00	914	43	3.85	1440	★	.15
358	38	1.50	734	20	1.35	835	6	36.00	915	31	25.00	1441	★	.50
450	37	3.00	737	20	1.35	836	5	1.50	916	8	.80	1442	29	1.75
451	37	3.00	738	4	2.75	837	34	11.00	917	41	5.00	1443	29	1.75
452	37	3.00	739	6	.35	838	27	3.50	918	7	1.45	1444	23	4.00
453	37	3.00	740	19	1.90	841	42	1.25	919	16	8.75	1444	23	4.00
454	37	3.00	741	10	2.50	842	★	7.75	920	43	1.20	1445	23	4.00
455	37	3.25	742	44	3.00	844	34	7.50	922	44	4.00	1446	23	4.00
456	37	3.25	743	★	1.75	845	3	.25	923	41	.80	1447	23	3.00
600	37	3.00	744	22	1.50	846	3	.30	924	41	.80	1448	23	3.00
601	37	3.00	746	35	5.00	847	3	2.70	925	20	2.50	1449	23	3.00
602	37	3.00	747	43	2.50	848	28	1.50	926	11	.65	1450	23	3.00
603	37	3.00	748	29	2.90	849	29	2.90	927	7	.10	1451	23	3.00
604	37	3.00	749	28	2.50	850	44	3.00	928	28	8.00	1452	23	3.00
605	37	3.25				851	27	3.50	929	4	3.75			

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