Ford 13-Plate Battery $12.00

The recent reduction in the price of the Ford battery has resulted in a tremendous increase in sales, and has provided a splendid opportunity for profits to those dealers who energetically go after the business.

Retailing at a price of $12.00, the Ford 13-plate battery represents an exceptional value. Its sturdy construction throughout meets every battery requirement efficiently and economically and its 13 plates give it a much greater capacity than the ordinary 11-plate type battery — a decided advantage in cold weather when greater power is required to turn the engine over.

Every dealer should be vitally interested in promoting battery sales, not only to secure the immediate retail profit, but for the after-service which makes the business still more attractive. It is, however, essential to acquaint all Ford owners with present Ford battery value. This can be done most effectively by advertising in the local newspapers. In addition the dealer should make proper window displays and circularize car owners in his community. Money spent in battery sales promotion brings quick returns at this season of the year.

Dealers lose many battery sales every day because their efforts do not go beyond supplying batteries actually demanded by their service customers — overlooking the large field represented by Ford owners with whom they have neglected to establish service contact.

This is a wonderful opportunity for dealers to build up their winter profits — don’t fail to cash in on it.
Adjusting Coupe Seat

The present type coupe seat is designed so that it can be moved forward if the owner so desires. When assembled in the standard position as it is when the car comes off the assembly line, the seat furnishes maximum riding comfort for the average size driver but it sometimes happens that the purchaser of a new car wishes the seat moved up closer to the steering wheel. This is easily accomplished as illustrated in Fig. 308.

After removing the seat cushion, remove the bolts at the bottom of the seat back strainers. This permits the removal of the seat back by merely lifting it up.

It will be noted that the package tray bar is assembled in back of the package tray flange and the lower brackets are turned toward the rear of the car. To assemble the seat back in the forward position, the lower brackets should be turned around to the forward position illustrated above and bent to conform to the angle of the seat back after it is assembled with the package tray bar in front of the package tray flange.

There are two holes in the seat cushion frame, the one in front being used when the seat back is in the standard position. After moving the seat back forward in the manner described above, the dowels are inserted in the two rear dowel holes in the cushion frame.

Wire Wheels

Since the adoption of Ford wire wheels as standard equipment on Fordor sedans, it is essential that dealers familiarize themselves with the installation of balloon tires on drop center rims, as described in pamphlets distributed by the branches and tire companies. Be sure your local tire dealer understands the proper method of installing and demounting tires on Ford wire wheels, and is prepared to give proper replacement service.

When applying tires to drop center rims, the flaps used in applying tires to our regular wood wheel equipment must be removed, as they cannot be used. It is also necessary to provide a longer dust cap for the valve stem, these parts being also obtainable through the various tire dealers.

Coupe Floor Mats

Many dealers are evidently unaware that we can supply rubber floor mats for 1924 and 1925 coupes.

Rubber mats are particularly desirable for cars which are used in commercial service. The carpets in cars operated for such purposes are usually worn out much more rapidly than those used only for pleasure and the long wearing qualities of rubber mats carry a great appeal for commercial users.

The price of this mat is now $1.25 and at this low price, there are doubtless many owners in your vicinity who will welcome the opportunity to secure new mats for their cars. All branches have an adequate stock of these mats and they should be ordered under the part number, T-18120CX.
The Vaporizer

In Fig. 309 is shown a cutaway view of the new vaporizer now used as standard equipment on Ford cars. Its principal advantages are:

**Increased Mileage:** The construction of the vaporizer causes a concentrated mixture of air and gasoline to pass over an exhaust heated plate, thoroughly vaporizing the mixture, which then meets and mixes with a definite amount of cold air. This gives a uniform and dry charge to each cylinder. As each particle of gasoline is vaporized there is complete combustion in each cylinder, resulting in increased mileage. Due to the fact that all the air is not heated there is no loss of power, which would be the case if the entire charge was pre-heated before entering the cylinders.

**Smotherer Operation:** The complete vaporization of the gasoline eliminates condensation on the inside of the intake manifold, and delivers an even, correctly proportioned mixture to all four cylinders, giving smooth acceleration at all speeds.

**Better Operation at Low Speeds:** The fact that the mixture is thoroughly vaporized and evenly distributed to all four cylinders assures much better performance at low operating speeds, which is important for cars operating in congested traffic.

**More Power:** The complete vaporization of the gasoline naturally gives more power which results in faster acceleration and higher maximum speed.

**Reduces Carbon:** The vaporization of the gasoline by direct contact with the heated plate eliminates any chance of wet gasoline reaching the cylinder, thereby cutting to a minimum the formation of carbon on the pistons or cylinder head.

**Less Use of Choke:** The improved results obtained by the use of the vaporizer over the old carburetor is especially evident in cold weather. The engine starts easily with less use of the choke, and after firing a few times smooth operation is obtained because the exhaust gases heat the vaporizing plate, thoroughly vaporizing and heating the mixture before delivery to the cylinders.

**Reduces Crankcase Dilution:** A very important result is the reduction of crankcase dilution, due to the fact that no unvaporized gasoline reaches the cylinders and gets past the pistons into the crankcase. In cold weather less use of the choke reduces the risk of drawing raw gasoline into the cylinder in starting.
Stop and Tail Light Display

The value of effective display as a means of stimulating sales is recognized by practically every merchandiser. Articles which attract but little attention when placed at random in a showcase frequently become very much in demand when displayed in an interesting manner.

In Fig. 310 is shown a set-up for the stop and tail light which has proven very effective in increasing the sale of this item.

To set up the display, proceed as follows:

Install brake pedal support to transmission cover.

Insert brake pedal shaft in brake pedal support, using the necessary spring, washer and nut. Connect up pedal, to pedal support with soft wire instead of regular pin. (Be sure to grease pedal support and pedal to insure easy operation for demonstration.)

Mount starter drive cover in usual manner, using gasket and four T 5059 screws.

Mount stop light switch to starter drive cover in accordance with instructions in carton.

Bolt T 50214 arms (windshield swing) through motor to transmission cover brace holes with 2 T 4819B bolts and 2 T 3514 nuts, mounting combination stop and tail lamp upon the top of the arms.

Place genuine Ford battery, rubbercased, alongside of transmission cover and wire up light and switch in accordance with instructions, concealing wires as neatly as possible, especially switch to stop light wire. Pass this wire through hole in transmission cover for reverse shaft and assemble all surplus wires under transmission cover.

Install transmission cover door, using 6 T 3367 screws.

This display not only serves the purpose of demonstrating the stop and tail lamp but also brings the Ford battery very forcibly to the attention of prospective purchasers. Two attractive signs should be made up, one calling attention to the battery and giving its price, $12.00, in large figures. The other sign should give the price of the combination stop and tail lamp and also call attention to especially designed switch used.

The necessary parts for demonstrating the stop and tail light are illustrated in Fig. 311. A list of the part numbers is shown below:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 T 3367</td>
<td>Transmission cover door screws</td>
</tr>
<tr>
<td>1 T 3376C</td>
<td>Transmission cover</td>
</tr>
<tr>
<td>1 T 3378</td>
<td>Transmission cover door</td>
</tr>
<tr>
<td>1 T 3380</td>
<td>Starter drive cover</td>
</tr>
<tr>
<td>4 T 5059</td>
<td>Starter drive cover screws</td>
</tr>
<tr>
<td>1 T 3381</td>
<td>Starter drive cover gasket</td>
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<tr>
<td>1 T 3425</td>
<td>Transmission band spring</td>
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<tr>
<td>1 T 3426</td>
<td>Transmission band adjusting nut</td>
</tr>
<tr>
<td>1 T 3435</td>
<td>Brake and reverse pedal shaft</td>
</tr>
<tr>
<td>1 T 3436</td>
<td>Brake and reverse pedal support</td>
</tr>
<tr>
<td>1 T 3439B</td>
<td>Brake pedal</td>
</tr>
<tr>
<td>4 T 4819B</td>
<td>Bolt</td>
</tr>
<tr>
<td>4 T 3514</td>
<td>Nut</td>
</tr>
<tr>
<td>1 T 3180X</td>
<td>Combination stop and tail lamp</td>
</tr>
<tr>
<td>1 T 5175</td>
<td>Battery</td>
</tr>
<tr>
<td>2 T 50214X</td>
<td>Arms (windshield swing)</td>
</tr>
</tbody>
</table>
Assembling Window Regulator Handles

When reassembling the window regulators on closed car doors, it is important that the handle be assembled so as to avoid interference with the driver’s or passenger’s knee when the glass is completely up or down. Figure 312 shows the correct position of the handle when the window is completely closed or open.

Essential Tools

We have found that a number of dealers are not equipped with SZ-1157 bar for assembling the hub brake spring. This tool greatly facilitates such work, in fact, we feel that it is a very necessary piece of equipment for every dealer.

At the price of $.40 list, less dealer’s discount, there is no reason why every dealer should not have one or more of these bars and it is suggested that an order be placed with the local branch at once.

Another very necessary tool which many dealers have failed to secure is SZ-1156 headlamp bending bar. This tool was brought out because the old type bending iron could not be used advantageously on the headlamps of improved cars. While it is true that the present type headlamp bracket renders a bending iron unnecessary, there are such a large number of cars in service on which the bar can be used that we consider it necessary for every dealer to have this type bar on hand.

The price of the bar is now $1.25, less dealer’s discount, and if an order has not already been placed with the local branch, it is strongly recommended that this be done at once.

Washing and Polishing Pyroxylin

Pyroxylin finished surfaces may be washed in practically the same manner as a varnished surface. The dirt and dust on the body should first be washed off with a slow stream of water flowing from a hose without a nozzle.

The use of soap on a pyroxylin finished surface will not have any ill effect upon the finish. After removing the dust as outlined above, soak a chamois in a pail of warm water (not over 175° F) containing any Linseed oil soft soap or Ivory soap and thoroughly wash the body. The soapy water should then be washed off with a slow flowing stream of water from a hose, after which, the body should be dried with a chamois or compressed air (not over 20 or 25 lbs. pressure).

To polish a pyroxylin body, it is merely necessary to follow the instructions on the bottle. The Lincoln polish, which we supply gives equally satisfactory results on either Lincoln or Ford cars and the same procedure is followed in polishing a pyroxylin finish as a varnished surface.

Wire Wheel Felt Washer

The standard T 2809 rear axle felt washer is used with Ford wire wheels. Dealers must see that this part is installed in every case when installing wire wheels.

Inflating Truck Tires

The balloon tires used on the front wheels of model TT trucks are to be inflated to 40 pounds pressure. This pressure, it will be noted, is higher than the 30 pounds recommended for rear tires on sedans and runabout with pickup body and is provided so as to take care of the relatively heavier loads carried on truck front wheels.

It is important that this pressure be maintained.
Tire Failures from Damaged Rims

Many car owners and some dealers fail to appreciate the importance of giving careful attention to the condition of the rims. A great many tires fail before they have given full service to the customer because they have been used on damaged rims. Such damage may occur to either clincher or straight side rims.

In the case of the clincher rim, the more common damage is for the clinch of the rim to be bent down as shown in Fig. 313. This is usually caused by rims striking the curb, a chuck hole in the street, a rock in the road, or something of this nature. Some owners make a practice of removing the tire altogether when it goes flat and run on the rim to a place convenient for tire change. This practice not only damages the rim but it bends the clinch so that the bead of the next tire applied will not fit properly in the clinch of the rim and causes what is commonly known as rim cutting.

Figure 314 shows a tire which has failed from a bad rim such as shown in Fig. 313.

In the case of straight side rims on account of the flange of the rim curving outward instead of inward, the damage to the rim is usually a flange bent downward. This does not give the proper support to the straight side bead and the pressure from the inside causes the tire to bulge out over the point in the rim which is bent down, eventually weakening the tire at that point until it blows out.

Figure 315 shows a bent straight side rim and tire which has failed on that rim.

The following are a few simple rules in connection with rims which, if followed, will prolong the life of tires.

1. Sometimes dents or bends in the rim can be taken out but if very bad, a new rim should be installed. A rim is inexpensive in proportion to the value of a good tire.

2. On clincher rims, do not use any kind of gum, fabric or metal strip on the inside of the rim, as it would tip the toes of the bead which would cause unnatural seating, and result in rim cutting.

3. On clincher rims, file off any sharp places along the edge of the clinch.

4. With a wire brush, clean out all rust which has accumulated, particularly from under the clinch on clincher rims so that
the beads of the tire can slide into their proper position and bring the edge of the rim against the side of the tire in the groove.

5. Give the inside of the rim a coat of graphite or aluminum paint to delay the formation of rust. Painting the entire rim with aluminum paint will greatly improve its appearance and no doubt be appreciated by the customer.

Setting Commutators

The importance of properly setting the commutator must not be overlooked, as a poorly set spark will inevitably result in burned valves, knocks, etc.

When properly set, the distance from the center of the commutator case spring cap screw to the center of the commutator case pull rod (with spark fully retarded) is 2 3/8 inches. Dealers can make up in their shops a gauge which will quickly and accurately check this setting. A sketch of the gauge is shown in Fig. 316.

To use the gauge, it is merely necessary to place the large hole over the cap screw and then bend the pull rod until the end of the rod fits freely in the small hole in the gauge.

This spacer, part T 3263, is fastened to the transmission cover by the three screws used on the old style magneto contact assembly. Replace the gasket with a new one of the same type and then assemble the spacer to the transmission cover with the three screws which held the old style contact assembly in place. A new type magneto contact assembly can then be screwed into the spacer.

The price of the spacer is $.15 list.

Magneto Contact Spacer

As soon as present stocks of T 3260 magneto contact assembly are depleted, we will discontinue supplying this item. The present type contact assembly, T 3260B, has been made adaptable to use on old style cars by the installation of the spacer illustrated in Fig. 317.

Small Time Gear Puller

It has been the practice, heretofore, to use 5Z-326 transmission driven gear puller for removing the small time gear. This was not entirely satisfactory, and a special tool has been designed for removing the small time gear. The puller is illustrated in Fig. 318 and the symbol number is 5Z-320.

In the event that a supply of these pullers has not been secured, it is suggested that this item be included in the next order placed with the local branch. The price is $.75, subject to regular dealer's discount.
Model T and Truck Wheels

To eliminate confusion in handling and ordering passenger car and truck wheels, and parts, we have compiled the following chart showing the component parts of each wheel assembly. This chart should enable dealers to reduce the number of items carried in stock, since it will be noted that many of the wheels can be made up from parts which must always be kept on hand.

**WHEEL CHART—T-DEMOUNTABLE**

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Less Hub Less Rim</th>
<th>Hub</th>
<th>Flange</th>
<th>Brake Drum</th>
<th>Hub Bolt</th>
<th>Hub Nut</th>
<th>Wheel With Hub Less Rim</th>
<th>Rim Bolt</th>
<th>Rim Camp</th>
<th>Rim Nut</th>
<th>Wheel Complete</th>
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**T—CLINCHER**

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<th>Wheel</th>
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<th>Hub</th>
<th>Flange</th>
<th>Brake Drum</th>
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**TRUCK WHEELS**

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*Replaced by 2800-F.
[Replaced by 2800-C.
[Replacing by 2814-L.
**Includes rim flange."
AGGRESSIVE dealers throughout the country are boosting their sales of batteries through newspaper and billboard advertising.

The battery sign shown in Fig. 319 was erected by dealers in Pittsburgh, Pa., and is placed on one of the busiest thoroughfares in that city. That it is an effective means of acquainting the public with the exceptional value of the Ford battery is proved by the splendid increase in battery sales made by Pittsburgh dealers.

Retailing at a price of $12.00, and equipped with two more plates than other batteries selling near its price, the Ford 13-plate battery represents the biggest battery value per dollar on the market—these are facts that the dealer must get before all Ford owners in order to secure a maximum volume of business. No dealer can afford to limit his profits to selling only the chance customer who applies at his counter.

On page 133 of this issue of the Service Bulletin is shown a cut of a new battery banner which is available to dealers at cost price. This banner should be prominently displayed in the shop and in the parts department window.

Money spent in battery sales promotion brings quick returns at this season of the year.
Increasing Service Sales Through 5\% Commission

Dealers in various parts of the country are reporting a decided increase in parts sales, accessory sales and service business generally, through the plan of personal solicitation of Ford owners by dealers' salesmen. In many cases, dealers find the plan of paying salesmen or service solicitors a commission of 5\% the most effective way of bringing in service work.

The dealer’s records generally indicate that he is servicing less than 50\% of the Ford owners located in his community. Some of these Ford owners are having their repair work done by small shops, while others, having purchased their cars second-hand through some other source, are reluctant to patronize the authorized dealer. The salesman calling on this class of trade has a remarkable opportunity to establish a profitable service relationship between the owner and the dealer, this contact eventually leading to the sale of more cars.

Generally speaking, the dealer's volume of service work has not kept pace with the cars sold in his community year after year. Therefore, the salesman’s efforts should be devoted to soliciting those owners who have not been in the dealer’s place of business for service for a period of 90 days, or those with whom the dealer has never been in contact with. The first step for the dealers is to list in their service follow-up files the names of all Ford owners in their vicinity. A record can then be made giving the names and addresses of all owners who do not come to the dealer regularly for service. Names from these lists are assigned each day to salesmen, with instructions to call upon the owners assigned to them. (In addition to the salesmen, many dealers encourage their entire organization to devote their spare hours soliciting service.)

On the following page, we have undertaken to show the relative profit returned by the dealer in servicing the Ford owner in his own shop as against having the work done by some local garage.

Dealers who are vitally interested in building up their Service Departments are bound to see the advantages of encouraging, not only their salesmen, but their entire organization, to devote their spare hours soliciting service in the community. The 5\% commission paid to the sales worker is money well expended, considering the profits that will accrue to the dealer through the extra business secured, as well as the good will established through contact with owners. On the other hand, the salesman is bound to secure many live prospects for car sales by getting in touch with present owners.

---

**E. L. James Motor Co.**

**AUTHORIZED DEALER**

Benton 5262
2705-2715 East 15th St.

---

**Quality Ford Products Service**

---

Issued to ...................................................
Address ................................................................
Interested in ..................................................
Salesman .....................................................
Date ..............................................................

**We are an AUTHORIZED FORD DEALER.**
**We use only GENUINE FORD PARTS.**
**Our labor is GUARANTEED.**
**Our mechanics are skilled in FORD REPAIR WORK only.**
**We can supply every Ford necessity.**

---

*To prevent any confusion as to who brought in a service job, the E. L. James Motor Co. distribute a quantity of the above form to each of their employees who solicit service work under the profit sharing plan.*

*When the salesman secures a service job from a customer, he fills out both halves of this form—the lower half is presented to the customer; the upper half is turned in to the dealer. In this way an accurate record is kept of each employee’s sales.*
An Analysis of the Dealer's Parts Business

(1) If the dealer sells $1000.00 worth of parts to the garage, he has a gross profit of $150.00 or 25 per cent on his investment.

(2) If the dealer sells $1000.00 worth of parts retail through his own shop, he has a gross profit of $400.00 or 66⅔% on his investment, with a difference of $250.00 in his favor.

(3) And that is only part of it—the dealer will sell approximately $1000.00 worth of labor at the same time, with a gross profit of $600.00, if his shop is working on the 60-40 profit-sharing plan.

For example, a $70.00 repair job works out as follows:

<table>
<thead>
<tr>
<th>Dealer's Percentage</th>
<th>Dealer's Gross Profit</th>
<th>Mechanic's Percentage of 40% on Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor $40.00</td>
<td>60%</td>
<td>$24.00</td>
</tr>
<tr>
<td>Parts 30.00</td>
<td>40%</td>
<td>$12.00</td>
</tr>
</tbody>
</table>

(4) When this same job is done by the garage man, the only profit made by the dealer is in the sale of parts, which amounts to $4.50 or 15% differential on $30.00 worth of parts. In other words, the dealer loses $31.50 when the garage man handles the job, and his mechanic also loses an opportunity to earn $16.00.

(5) If some member of the dealer's organization brought in this job, his 5% commission would amount to $3.50, which, deducted from the gross profit of $36.00, still leaves the dealer ahead by $32.50. Isn't this profit worth while? And this is an actual happening:

"A salesman by the name of Perry, working for a dealer in Philadelphia, brought in two service jobs the first day the plan was in force, amounting to $175.00, thereby making himself $8.75. And the lady cashier sold a Tudor Sedan for this same dealer on the third day, making herself $27.25, which included 5% on the accessories sold and installed on the car."

(6) A new customer has been added by this dealer's salesman (perhaps the porter or stenographer), and we want this customer to come in for his next job. So the dealer must have a real service follow-up file, and at the end of 60 days if the man has not been back, must advise the salesman who will be glad to call on the man for the simple reason that every time he comes in the salesman receives his 5%, and through this means the dealer is able to maintain a personal contact with all of his customers. The salesman obtains new car prospects from this satisfied owner, and furthermore is in touch with his customer when he is ready to buy a new car. And better still the garage man, who is acting as a selling agent for some of our competitors, has not been able to get in his work.

(7) And wouldn't that be an easy used car to sell if we just took our card out of our service file and said to the prospective customer, for the used car, "Here is the complete history of this car, and I don't hesitate to guarantee it because I know it—just glance at the service record and you can see for yourself how the owner took care of it."

(8) How about your shop profit?

(9) What were your labor sales last month? How many mechanics did you have?

(10) For instance, one dealer sold $1638.00 worth of labor and employed 7 mechanics in the month of September. $1638.00 divided by $1.50 approximate hourly labor sales rate equals 1092 hours of labor sold.

(11) These seven mechanics put in 1575 hours of labor during the month, and as but 1092 hours were sold—483 hours of labor were lost because of the staller or poor mechanic. If you will divide 483 by 1092, it gives you 44% or in other words, he only needed about one-half as many men if they really worked.

(12) The dealer's labor cost him $1212.00, and if we divide this by hours of labor sold, 1092, we find that his labor actually cost him $1.11 per hour.

(13) And here is what this same dealer did in October with the profit sharing plan working (everyone selling everything), and the mechanic working on the 60-40 plan: 40% of the labor rate to the mechanic and 60% to the dealer. He sold $1755.00 in labor and paid to the mechanics $804.00. And he had four mechanics instead of seven with a profit of $951.00 from labor for October, as compared with $426.00 in September, a difference of $525.00 per month or $6300.00 per year. And his mechanics made an average of $201.00 per month in October, as compared with $173.00 for September, and you must realize, the better the pay, the better the mechanics, with the result a better satisfied customer.

(14) The profit sharing plan means more sales, more service and more profit to all. It is doing it for this dealer and many others.

What About You???
The Dissatisfied Customer

Dissatisfied customers are a standing danger to any business but the danger is more potent when dissatisfaction creeps in to the service department of an automobile dealer; unfortunately bad service and improper treatment causes this trouble for the most part.

The advertising of Ford service will interest customers and bring them to your doors but all the advertising in the world will not keep them there if they come in contact with methods and receive treatment which antagonize them. Good service if supplemented by bad management will soon become bad service and this represents an invitation to failure.

The success of the up to date Ford dealer is dependent, for the most part, on harmonious co-operation between all departments. And too much care cannot be exercised by dealers in the selection of a personnel to satisfactorily fill the various positions requiring contact with the customer.

Thoughtless and incompetent employees are frequently the cause of dissatisfied customers, and these employees may be classified in two groups—those who are thoughtless as a result of incompetence and those who are incompetent as a result of thoughtlessness. One is equally as bad as the other from the service managers’ point of view.

The best mechanic is no more profitable than the worst if by his manner and general bearing towards customers he drives them away to some other source of service. Courtesy and a high sense of duty go a long way in cementing friendly relations between patrons and dealers and when coupled with a keen service policy will insure the success of any service department.

A Truism

“When your service approaches 100%, your sales will have passed that figure.”

An Addition to Fleet Owner List

“The Red Top Malt Company, with headquarters at Cincinnati, Ohio, have recently qualified as Fleet Owners, and are entitled to the corresponding discounts on parts purchased through our dealer organization.”

Check up appearance of your repair parts department. Bear in mind that this is a “sales” department and not merely a “stock” department.

Dealer’s Battery Ad Increases Sales

In Fig. 320 is shown a well written battery ad which one of our dealers is running in local newspapers.

That it is an effective business getter is proved by the splendid volume of battery sales made by this dealer.

Make certain that every job done in your shop is satisfactory before it is permitted to get into the hands of a customer.

By working in co-operation with the Used Car Department, the service manager can sometimes sell an overhaul job when the owner finally decides that the terms of the trade are unattractive. This not only brings work to the service department, but prevents the owner from shopping around for another make of car.
Battery Banner

**NEW LOW PRICE**
**ON GENUINE 13-PLATE**

*Ford* BATTERIES

FITS 80 PER CENT. OF
ALL CARS

IDEAL RADIO "A"
BATTERY

$12.00 RUBBER CASE - 6 VOLT

ASK ABOUT OUR
EXCHANGE PRICE

---

Printed in two colors on cloth - size 28x60, price 50 cents each, at nearest Ford branch.

Here's a battery banner which has helped boost battery sales when properly displayed in the parts department and in the shop.

To familiarize everyone with present Ford battery value, many dealers in addition to displaying the banner, have run ads in their local newspapers announcing the new price of the battery.

This is information that the dealer must get before every car owner in his community in order to secure a maximum volume of battery business.

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**Free Battery Charge Plan Attracts Trade**

Several dealers have reported that they have been successful in increasing battery sales through the following plan:

The dealer's service salesmen are given a number of cards entitling the bearer to one free battery charge. After interviewing the prospect on the sale of parts, labor, etc., he inquires whether he has a radio, and, if so, where the battery is charged. In any case, he hands the prospect a card which offers him a free charge at the Ford dealer's service station. Invariably the customer takes advantage of this free charge idea. He brings his battery in and the dealer rents him a battery. The dealer loses nothing on the free charge, but gains a new customer for Ford battery work, or eventually sells the customer a new battery.

---

**Discontinue Supplying Mixing Chambers**

The list price of carburetors has been reduced to such a low figure that we no longer consider it advisable for dealers to attempt repairing carburetors when it is necessary to replace the mixing chamber. For this reason, when present stocks of mixing chambers are exhausted, we will discontinue supplying this part.

**Correction**

The Wheel Chart shown on page 128 of the January 1st Ford Service Bulletin should be changed so that the 5th and 6th items of the chart shows Rim 2845-E being used in making up the complete wheel instead of Rim 2845-B.
Test Proves Under-Inflation Causes Fast Tread Wear

These balloon tires were run 4000 miles on the front wheels of the same car over good paved roads under identical operating conditions—except that the two tires on the left were inflated to the recommended pressure while the two to the right were run with four pounds less pressure.

Note the difference in tread wear directly due to a difference of only four pounds in pressure.

Under-Inflation Also Causes Fabric Breaks

The air in a tire is intended to act as a cushion—to absorb countless jolts and to carry the car smoothly and quietly over the road.

If the air cushion is too hard, the car rides uncomfortably. But if it is too soft, on account of under-inflation, the more severe jolts or "road shocks" will be transmitted directly to the wheel, with only the sidewalls of the tire between the obstacle and the rim to absorb the blow.

The tire is only intended to be a container for the air cushion. It is purposely made flexible. Consequently when the air cushion is inadequate to stand the force of the blow, the tire is crushed between the rim and the obstacle and fabric breaks result.

The tire perhaps didn't go flat at once, because the tube was not damaged. But finally the flexing of the tire caused the tube to work into the fabric break until it was chafed through and the tire slowly became flat.

There is often no mark on the outside of the tire. The layer of protective rubber on the tread and sidewalls is so tough that it rarely shows marks of the numerous blows received.

Fabric breaks occur in many different ways. Sometimes they result from hitting the curb in parking and pinching the tire against the curb as shown in Fig. 327. When this happens, the sidewall of the tire caught between the rim and the curb is likely to be injured in the same way as the tire shown in Fig. 326.
Differences in the size and shape of an obstacle, the speed of the car and the angle from which the blow is received by the tire, as well as the pressure in the tire, are responsible for the varied forms which bruises take.

When a tire goes flat, stop at once and have the tire changed (balloon tires can be ruined completely by being run flat for only a few blocks). The damage should be repaired by a good repairman, thus enabling the tire to give its full mileage. Running a tire with a "boot" or temporary repair for any length of time is likely to permanently damage the tire.

Proper inflation, constantly maintained, is the best protection against fabric breaks and fast tread wear.

Therefore: Check the inflation in your tires once a week.
Use a reliable balloon tire gauge.
Don't let the pressure drop more than 3 pounds below the proper figure.
And the Parts Installed Are Sold at List Price

Charles E. Taylor, Ford dealer at Buffalo, N.Y., does not believe in waiting for business to come to him—he believes in going after the business.

His plan of grouping certain labor operations and performing them at an attractive price has proved unusually successful in bringing more service work into the shop.

Figs. 328 and 329 shows the card and letter which Mr. Taylor forwards to all Ford owners in his community, describing his special offer.

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Don't Gamble On Service

Use the TAYLOR SPECIAL SERVICE PLAN

$2.00 SPECIAL

1. Flush Radiator.
2. Clean and Adjust Oil Timer.
3. Clean and Adjust Spark Plugs.
4. Adjust Coils.
5. Adjust Transmission Bands.
6. Flush Crankcase.
7. Clean Gasoline Lines.
8. Clean Ignition Bulb.
10. Adjust Front Wheels.
11. Clean Oil Car Thoroughly.
12. Adjust All Body Bolts.
13. Replace Running Board Bolts.
15. Adjust Front Wheels.
16. Test Car on Road.
17. Properly Inflate Tires.
18. Inspect Brakes & Rear System.
19. Adjust Carburetor.
20. Adjust Radiator Bolts.
21. Tighten All Dash Bolts.
22. Clean Grille-Grill Fittings.

Just Ask for Our "Two Dollar Service Special" and These 22 Service Operations Will be Performed at a Total Cost of $2.00.

Parts and Crankcase Oil extra.

Ours is one of the largest, lightest, cleanest, most modern, and best equipped Ford Service Stations in the entire United States.

CHARLES E. TAYLOR
Bailey Ave., at Kensington
Crescent 6400

Authorized Ford Sales and Service
A Suggestion for the Parts Display Window

This group of parts makes an unusually attractive show window.

The display is entirely of Ford parts and accessories—items which every dealer carries in stock and for which there is an every day demand.

Too often dealers destroy the sales value of their parts window by featuring non-essential accessories—knick-knacks which do not appeal to the average owner and consequently have but little sales value.

Ford accessories are quality articles—they are designed especially for the Ford car and sell at reasonable prices. In selling them, the dealer renders a real service to his customer—one in which both he and the customer share a mutual interest.
The same float setting is used in the present design vaporizer as is used in the old style carburetor, that is, the float is set so that the distance from the top of the float to the machined flange on the mixing chamber measures exactly $\frac{3}{16}$ inch. (See Fig. 331.)

**T-17130-AR Door Lock Grip Discontinued**

T-17130-AR door lock grip and ferrule assembly will no longer be furnished after present stocks are exhausted.

The T-17130-BR door lock grip and ferrule assembly can be used in place of the AR. In cases where the owner objects to having one type of door lock grip on one side and another on the other, two of the "BR" parts should be supplied. The list price of two of the T-17130-BR is less than the list price of one T-17130-AR.

**Tractor Pistons .010 Oversize With Corresponding Rings Now Available for Service**

According to inquiries received, some of our dealers are not familiar with the fact that a stock of .010 oversize pistons with corresponding rings is maintained at all Branches for replacement purposes.
Destroy Second Hand Parts

One of the unfortunate conditions which has crept into the motor car business is the salvaging and resale of second hand parts. This practice is the natural outgrowth of attempts at recovering some value to offset the allowance made for cars unfit for further service.

Material of this character is generally sold for a fraction of its original price, but in buying it, the owner runs the risk of loss of life and property. For a small questionable profit, no Ford dealer can afford to jeopardize the future of his business by trafficking in used parts. Business success depends upon public confidence and if that confidence is destroyed by the sale or substitution of worn or damaged parts, the dealer loses his most valuable business asset.

For your own profit and protection, break up or deface any used parts which you accumulate in performing service work. This not only prevents such material eventually finding its way back into the Ford car, but it prevents your losing the sale on corresponding new parts.

Wheel Exchanges on New Cars

When purchasing closed cars, customers desiring to replace wire wheels with wood wheels, in either black or natural wood finish, should be accommodated without additional charge. Dealers will recover the expense of making the change through the difference in price applying on wire and wood wheels.

In the event customers desire to replace the standard black wire wheels with colored wire wheels, the dealer is justified in making an additional charge of $10.00 to cover labor, freight, etc., incidental to making the change.

New Prices on Service Tools

Here are four tools which are necessary to properly perform the operations for which they were designed:

- SZ-197 Rearspring perch open end wrench
- SZ-248 Rear axle nut wrench
- SZ-320 Small time gear puller
- SZ-591 Rear axle nut wrench (truck)

So that all dealers will make these tools a part of their regular service equipment, we have reduced the list price as follows:

- SZ-197 reduced from $1.00 to $0.65
- SZ-248 reduced from 1.25 to .90
- SZ-320 reduced from .75 to .65
- SZ-591 reduced from 1.50 to 1.10

The above are list prices and are subject to the dealer’s regular discount.
The Ford Vaporizer—Power, Pep and More Profit

The successful principle of carburetion used in the Ford vaporizer is a wonderful improvement over the old style carburetor and manifold.

Smoother operation, more power and a gasoline economy feature which makes it pay for itself in a very short time are some of the outstanding advantages of the vaporizer—advantages which must be brought to the attention of every Ford owner in order to secure a maximum volume of vaporizer sales.

Advertising in local newspapers, proper window displays and circularizing car owners are the most effective ways of getting this message across.

This is a wonderful opportunity to build up profits—get behind it and watch sales climb.
Dealers’ Ad Boosts Vaporizer Sales

Fig. 336 shows a well written vaporizer ad which one of our dealers is running in local newspapers.

This is information that the dealer must get before every Ford owner in order to secure a maximum volume of vaporizer sales.

Service Tips

If you are not servicing a large percentage of the Ford cars in your community why not try the approved plan of paying your salesmen and employees a commission of 5%, on all service work they bring into your shop? After putting this plan into effect one employee working on the dealer’s service floor sold 17 vaporizers in one week.

Feature a periodical tune-up and inspection service. This will go a long way toward making your shop maintenance headquarters for Ford owners.

See that your place of business is listed in the telephone book under the name of the car you sell. This will often direct business to your place which would otherwise go elsewhere.

Instruct Owners to Keep Tractor Rear Wheel Bushing Bolts Tight

When delivering a new tractor, the owner should be instructed to tighten the rear wheel bushing bolts each day, until all possible play has been taken up and the bolts find their permanent bearing seats—this usually requires about a week.

If the bolts are not tightened daily until all play has been taken up, there is a possibility of them shearing off, or the threads in the wheel becoming stripped.

Installing Demountable Rims

When installing a demountable rim on a wheel, be sure that the bead on the rim is just flush with the edge of the felloe all the way around. If the bead and felloe are not even, the wheel will have the appearance of wobbling. The lugs should always be drawn up evenly by giving each nut a few turns at a time. Do not tighten one lug before drawing up on the others.
Testing and Adjusting the Coil Units

Better Results Obtained With a Motor Driven Stand

To accurately test and adjust the coil units, best results will be obtained with a motor driven coil unit test stand. The advantage of a motor driven outfit is that it maintains a constant voltage and a uniform speed, thus insuring all four coil units being set to 1.3 amperes at exactly the same voltage.

With a hand operated outfit it is practically impossible to turn the crank at exactly the same speed while adjusting and testing all four coil units, and if the speed varies then, of course, the voltage also varies and results in uneven adjustments.

A motor driven outfit supplies constant speed and voltage—it duplicates the conditions under which the coil units must operate in the car.

Inspecting and Adjusting the Coil Units

To adjust the coil units, first inspect the tungsten points on both the vibrator and bridge. If the points are badly pitted or burned, a new vibrator and bridge should be installed. If the points are only slightly pitted, they can be removed and dressed down with an oil stone.

When installing a new vibrator and bridge, it is very important that a uniform clearance of approximately .005 inch be maintained between the cushion spring and vibrator bridge (see “A” Fig. 337). This clearance should extend the full length of the cushion spring.

With the vibrator and bridge held open, adjust the gap between the tungsten points to $\frac{1}{32}$ inch as shown at “B.” The adjustment is obtained by loosening the lock nut and tightening or loosening adjusting nut “C.” The tungsten points should meet squarely when they come together. See that the four lock nuts on top of the coil units are drawn down tightly.

Place the coil unit in the coil tester and start the motor on the machine, then adjust the vibrator tension until the ammeter hand registers 1.3 amperes. A uniform reading of 1.3 amperes should be obtained on all four coil units. To increase the amperage, lightly tap outer edge of vibrator bridge with a small hammer as shown in Fig. 338. To lower the amperage, slightly pry up the outer edge of the bridge. A screw driver can be used for this purpose (see Fig. 339).
When a coil unit is correctly adjusted, it will show one good spark at each of the 16 points around the ring with the ammeter hand on the stand registering 1.3 amperes. If more than one spark occurs at any of the sixteen points, it indicates that the cushion spring is not working freely. This can be corrected by lightly tapping the vibrator on the cushion spring rivet.

If only a very weak spark, or no spark at all shows on the test ring of the stand after dressing down or installing new points and adjusting the coil unit as previously described, the trouble is in the inside of the coil and it is less expensive to install a new unit than to attempt to take the old one apart and repair it.
FORD SERVICE BULLETIN

Vaporizer Fittings Should be Carried in Stock

As different style vaporizer fittings are used on different type cars, it is necessary when ordering vaporizers complete with fittings (part 6250-2201-S) to specify the types of cars on which they are to be used in order to insure the correct parts being sent.

To simplify this matter we suggest that dealers carry in stock a supply of the vaporizer fittings listed below, which will take care of all type cars. By carrying a complete line of fittings in stock, it will only be necessary for dealers to order the vaporizer, less the fittings, as they can then supply the necessary fittings out of their own stocks.

Vaporizer Fittings for All Type Cars

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6297 2213R</td>
<td>Steering Post Throttle Lever</td>
</tr>
<tr>
<td>6297B 2239</td>
<td>Steering Post Throttle Lever Bolt</td>
</tr>
<tr>
<td>6297C 3198</td>
<td>Steering Post Throttle Lever Bolt Nut</td>
</tr>
<tr>
<td>6298 2225</td>
<td>Pull Rod (cars prior to 1926 TT Chassis 1926-27)</td>
</tr>
<tr>
<td>6299 2223</td>
<td>Pull Rod (Road., T. C., Cp., Tudor 1926-27)</td>
</tr>
<tr>
<td>6300 2248</td>
<td>Pull Rod (Fordor, T Chassis 1926-27)</td>
</tr>
<tr>
<td>6302B1-8797F</td>
<td>Choke Rod</td>
</tr>
<tr>
<td>6302B2-TT8797B</td>
<td>Choke Rod</td>
</tr>
<tr>
<td>6303 2206</td>
<td>Adj. Rod Collar</td>
</tr>
<tr>
<td>6304 2238</td>
<td>Adj. Rod Collar Set Screw</td>
</tr>
<tr>
<td>4129D1-6103AR</td>
<td>Adj. Rod (T and TT Chassis 1926)</td>
</tr>
<tr>
<td>4129D2-6103B</td>
<td>Adj. Rod (T and TT Chassis 1926-27)</td>
</tr>
<tr>
<td>4129G-6124AR</td>
<td>Adj. Rod (Open Cab 1926)</td>
</tr>
<tr>
<td>4129H-6123B</td>
<td>Adj. Rod (Cp., Tudor, Closed Cab 1926-27)</td>
</tr>
<tr>
<td>4129J-6124B</td>
<td>Adj. Rod (Road., T. C., Fordor 1926-27)</td>
</tr>
<tr>
<td>4129J-6128AR</td>
<td>Adj. Rod (Cp., Tudor, Fordor prior to 1926)</td>
</tr>
<tr>
<td>4129K-6130AR</td>
<td>Adj. Rod (Road., T. C., prior to 1926)</td>
</tr>
<tr>
<td>4131-6114</td>
<td>Adj. Rod Sleeve</td>
</tr>
<tr>
<td>2909A2-1364BR</td>
<td>Gas Feed Pipe (T and TT Chassis, Fordor 1926)</td>
</tr>
<tr>
<td>2909F2-1373BR</td>
<td>Gas Feed Pipe (Road., T. C., Cp., Tudor 1926)</td>
</tr>
<tr>
<td>6295 2208</td>
<td>Gasoline Inlet Elbow (Cars prior to 1926)</td>
</tr>
<tr>
<td>4431B-2000B</td>
<td>Priming Rod</td>
</tr>
<tr>
<td>3063-513</td>
<td>Inlet and Exhaust Manifold Gaskets</td>
</tr>
<tr>
<td>4591-6616</td>
<td>Choke Rod Sleeve</td>
</tr>
</tbody>
</table>

The Vaporizer, Less Fittings (Part 6250B-2245) consists of:

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6251-512D</td>
<td>Intake Manifold</td>
</tr>
<tr>
<td>6254-2202</td>
<td>Mixing Chamber Assy.</td>
</tr>
<tr>
<td>6253-2210</td>
<td>Mixing Chamber to Intake Manifold Gasket</td>
</tr>
<tr>
<td>6255-2237</td>
<td>Mixing Chamber to Intake Manifold Screw</td>
</tr>
<tr>
<td>6272B-2215</td>
<td>Exhaust Manifold and Cover Assembly</td>
</tr>
</tbody>
</table>

By purchasing the vaporizer parts knock down, the dealer effects a saving as compared with the price of the complete assembly.

Hinge Pin, Part 2877, Used Only on Kelsey Rims

In the January 1st issue of the Wholesale Parts Price List is listed 2877 Demountable Rim Hinge Pin, factory No. 8646. This hinge pin is used only on Kelsey rims. However, we have received so many orders for these pins that we believe dealers are ordering them without regard as to whether or not there is any actual demand for them. In some instances orders have been received from dealers located in territories where Kelsey rims have never been used.

When new items are inserted in the Parts Lists, the dealer's stock men should first make sure they will have use for such articles before placing orders.
Pyroxylin Finish Opens Up Profitable Field

Fig. 340

Refinishing cars in Pyroxylin opens a new source of revenue for dealers. Applied to used cars, it gives new car appearance, making it easier to interest prospective purchasers and to sell such cars at a substantial profit.

From a Service standpoint it means extra profits from the refinishing of owners' cars.

Owners who have more or less neglected the appearance of their cars during winter months, and commercial houses who know the advertising value of keeping their cars looking spick and span are excellent prospects for this new service.

Here are a few points which should be stressed in going after this business:

- **New car appearance at low cost**—Owners can renew the finish of their cars at a price almost anyone can afford.
- **Cars not tied up for long periods**—New equipment and special process makes it possible to completely refinish a car in 24 hours.
- **Pyroxylin an ideal finish**—It's more durable than paint and maintains its glossy appearance indefinitely. There's a variety of colors to choose from.

Advertising in local newspapers, proper window displays and circularizing Ford owners are the most effective ways of getting this information before the public.

Make your place headquarters for Pyroxylin finish—it means extra profits for you.
Ford Ammonium Sulphate
(Fertilizer)

Fig. 841

We are now prepared to offer a high nitrogen fertilizer in ten pound cloth bags, packed especially for householders, for use on lawns, small gardens, trees and shrubs.

This is the season of the year when the demand for fertilizer is at its peak, and by prominently displaying this product you can dispose of a considerable quantity.

Our price to dealers is 60 cents per ten-pound sack, f. o. b. Branch, less usual parts discount. Orders can be placed in 100 pound lots or in any amount up to carload quantities.

To further assist sales we are having printed a four color window display card, also folders for general distribution. These will be placed in the hands of dealers as promptly as possible.

Fordson Piston Ring Gap

Fordson piston rings are fitted in the cylinder with a gap (clearance between the ends of the rings) of from .008 to .015" for all three rings.

The fit of the rings in the piston ring grooves is from .0005 to .002".

A Good Truck Service Letter

The “No Delay” truck service plan adopted by the Pate Auto Co., of Jackson, Miss., has proved unusually popular with commercial owners. Incidentally it has helped this dealer to build up a very satisfactory volume of truck service work.

The following letter describing their plan is mailed to every Ford truck owner in Jackson:

W. T. PATE AUTO COMPANY
JACKSON, MISS.

Dear Sir:—

When your truck breaks down during the rush of a busy day, your deliveries must go on just the same.

To assist you in such a crisis, we have a courtesy truck for your use while your truck is being repaired.

Our courtesy truck is kept in first class condition, with good tires, and is sent out full of gasoline and oil. To cover the expense of fuel and upkeep on this truck, we make a charge of one dollar an hour.

This truck is not rented except in replacement of a truck that is being repaired in our own shop.

The Pate Auto Company now offers night repair service to commercial users. Send us your job after the day’s work is over, and we will have the car or truck finished—ready for work the following morning.

We trust the courtesy truck and night service will benefit the commercial users of Jackson, and is established by us as a continuance of our policy—"COMPLETE SERVICE FOR FORD OWNERS."

W. T. PATE AUTO COMPANY
Truck Department

Hinge Bending Iron—$2.15 Net

Fig. 342

This serviceable hinge bending iron will prove a time saver in the shop when adjusting body door hinges and lining up doors.

Orders for the tool should be placed with the nearest Ford Branch who will arrange for shipment direct from the manufacturer, on a C. O. D. basis.
Windshield Wings—Gypsy Curtains—Dust Hoods
Three Accessories That Will Help You Earn Extra Profits This Spring

Fig. 343

Featuring articles which have a seasonal appeal is a good way to stimulate accessory sales.

With the arrival of spring, open car accessories such as windshield wings, gypsy curtains and dust hoods should be prominently displayed—these are fast spring sellers that will help you earn extra profits.

To display this material to the best advantage, a roadster with this equipment assembled should be placed in a prominent position on the showroom floor where it can be easily seen from the street. The smart appearance of the car dressed up in this way emphasizes the attractiveness of these accessories and creates a display that appeals particularly to open car owners and prospective buyers.

To help you get a bigger volume of this business, we have established unusually low prices on these items:

- 3251BRX Windshield wing assembly—right $2.50
- 3252BRX Windshield wing assembly—left 2.50
- 41097SX Gypsy curtain—front—right (Runabout and Touring) 1.10
- 41098SX Gypsy curtain—front—left (Runabout and Touring) 1.10
- 41114AX Dust hood—Touring 4.00
- 41077AX Dust hood—Runabout 4.00
- 3320SX Automatic windshield wiper 2.00

The above are list prices, subject to the dealer's regular parts discount.

This is a wonderful opportunity to build up spring profits — don't fail to cash in on it
Dealers’ Ads Boost Pyroxylin and Accessory Sales

Wide-awake dealers are finding newspaper ads and window displays effective in boosting their spring business.

Here are two ads that have a strong seasonal appeal to many owners.

Now you can have Pyroxylin on your car

That satin-like finish that you have admired on the new Ford cars, can now be put on your old one. We have installed complete equipment for Pyroxylin finishing. We have trained operators. Our prices are surprisingly low and your car need not be out of service more than a day.

Pyroxylin is an ideal finish, it keeps its original luster indefinitely. It fills the pores of the metal and forms a seal that neither rain, snow, ice, soaps nor polishes can affect.

Come in and let us quote you on the low cost of giving your car this permanent beauty now. There is a variety of colors to choose from.

Henderson & Lathrop, Inc.
Auburn, N. Y.

Authorized Ford Dealers
CARS · TRUCKS · TRACTORS

TOURING TIME
Demands These Comforts

Gypsy Curtains — These trim wind breakers will add a dash of smartness and a wealth of comfort to your open car. They can be put on and taken off in a few seconds and are easy to stow away.

$2.20 per pair

Dust Hoods lend the final touch of distinction to the touring car and roadster. And they serve the very practical purpose, too, of keeping the top clean, dry and protected from the sun while it is folded down. If you like to drive “under the sky” you should have this dust hood.

$4.00 for either Roadster or Touring

Windshield Wings give you all the luxury of open car driving without the swirling drafts that women drivers and passengers particularly object to. And they certainly do dress up the car.

$5.00 per pair

These are all genuine Ford accessories, and we have many others that you will be interested in this time of year. Come in and see them.

Henderson & Lathrop, Inc.
Auburn, N. Y.

Authorized Ford Dealers
CARS · TRUCKS · TRACTORS

Genuine Ford Parts Assure Customer Satisfaction

When an owner experiences trouble with his car due to the failure of an imitation part, he seldom blames the manufacturer of such material — he blames the dealer or garage who sold him such goods. As a result, their business, which is dependent solely upon local trade, sustains a permanent loss, while the manufacturer of the counterfeit parts simply transfers his selling efforts to some other locality where his goods are unknown.

Correction

In the March 1st, 1927, issue of “Schedule of Repair Charges,” the price of operation 260-A “Remove Fender or Running Board and straighten (improved cars)” should be $2.50 instead of $2.00.

Please make this correction in your Schedule of Repair Charges.
A good paint shop layout, suitable equipment and thorough knowledge of how the equipment is used, are the principal requirements for satisfactorily refinishing cars.

In the August, 1926, issue of the Service Bulletin detailed instructions were given on how to prepare a car for refinishing and how the various refinishing operations were performed. This article will deal with the correct method of using the spraying equipment and the conditions which must be observed in order to secure a satisfactory job.

Selecting the Equipment

In the selection of pyroxylin spray equipment, the following points should be carefully considered:

(a) Efficiency and operating cost.
(b) Quality of work which can be performed with the equipment.
(c) Adaptability for all classes of refinishing, including touch-up work.
(d) Price.

Instructions for Using KRW-Milburn Spray Gun Equipment

The first step in installing the KRW-Milburn spraying equipment is to mount the air purifier on the wall. (See "A," Fig. 346.) A pipe line is then run from the air compressor outlet "B" to the inlet connection "C" on the air purifier. (To eliminate any possibility of fire hazard, the motor driven air compressor must not be placed in the paint room.)

After completing the pipe connections, connect the hose line, which is furnished with the unit, to the air regulator "D."

Next start the air compressor and keep it running until the air storage tank nearly reaches its maximum capacity. Before starting to spray, it is always advisable to see that the air storage tank is filled with air, as in many cases the spray gun uses up the air faster than the compressor replaces it in the tank. For this reason, when using the gun for long periods, the operator should be careful that the air does not drop below the recommended pressure of 40 pounds. The pressure is registered on the air regulator gauge shown at "E."

Before connecting the other end of the air hose to the spray gun inlet, the hose should be thoroughly cleaned of all particles of dirt and soapstone. Turning the regulator key "F" to the right turns on the air—this will blow out any foreign matter in the hose.

After cleaning out the hose connect it to the spray gun inlet as shown at "G."
When all connections are tight, turn the regulator key (see "F," Fig. 346) to the right until the air gauge registers approximately 45 pounds.

Next raise the trip lever on the gun and pull back the air lever.

The pressure on the gauge will then drop, but should be adjusted to register 40 pounds when the lever is pulled back. The pressure can be increased by turning the regulator key to the right.

Before pouring the pyroxylin into the container, it should be thoroughly strained to remove any sediment or gritty matter.

Operator Should Know How the Attachments are Used

Before starting to refinish a car, the operator should familiarize himself with the different attachments on the gun and the purposes for which they are used.

"A," Fig. 347, shows the trip lever. By raising this lever it causes the paint valve to remain in the closed position, so that when the air lever "B" is pulled back, air only issues from the nozzle. This feature comes in mighty handy for dusting off the surface of the car before applying the pyroxylin.

"C" shows the paint adjusting nut. Ordinarily the adjustment is correctly set at the factory. However, it is a good plan to check it before starting spraying operations.

To check the adjustment, see that the air valve plunger "D" comes in contact with lever "B" just before the trip lever touches the paint adjusting nut "C." This will permit the air to issue from the spray nozzle a fraction of a second before the paint valve opens when the air lever is pulled back. This adjustment is important, as there is a possibility of the pyroxylin dripping out of the nozzle unless the air is brought into play slightly ahead of the pyroxylin.

For all-around painting the adjustment just described will prove the most satisfactory. However, instances sometimes arise where only a very light coating of pyroxylin is required. When a coating of this kind is desired, turn the paint adjusting nut "C" anti-clockwise. This cuts down the pyroxylin and increases the volume of air. Another way to obtain a very light spray is to pull back the air lever until the desired spray is obtained.

Handling the Gun When in Use

Before starting to paint see that the surface which is to be refinished is absolutely clean.

When applying the pyroxylin, the gun should be held at a distance of 6 to 10 inches from the surface. Move the body and arm so as to keep the gun pointed directly at the surface at all times. Do not hold the gun at an angle. (See Fig. 348.)

Make sure that you are using the correct air pressure. For general use a pressure of 40 to 45 pounds will give best results with the one quart container furnished with the gun. Very heavy materials should be thinned so as to flow easily.
To meet every refinishing requirement the atomizer head is designed to furnish various shaped sprays.

When the atomizer head is turned in a vertical position, a flat horizontal spray is obtained as shown in Fig. 349.

When the head is turned in a horizontal position, a flat vertical spray is obtained. (See Fig. 350.)

For touch-up work, high-lighting or refinishing wheel spokes, a small, round spray must be used. To obtain a round spray, turn the atomizer head until the air plungers engage with the air ports in the head. A slight clicking noise will be heard when the plungers engage in the ports and the atomizer head will be in the position shown in Fig. 351.

Another way to obtain the round spray adjustment is to line up the arrow indicator, stamped on the atomizer head with that on the lug of the gun.

In instances where very fine touch-up or high-lighting is to be done, the area of the circle can be still further reduced by decreasing the air pressure to 20 pounds or less. This is done by turning the regulator key (see “F,” Fig. 346) to the left until the correct spray is obtained.

Cleaning

Cleaning the spray gun is an item which the operator should carefully observe. To clean the gun detach the paint container and place the paint tube into a retainer filled with thinner. Pull the air lever until the thinner issues clear from the nozzle (see Fig. 352).

This must always be done before changing colors or at the end of the day’s work. The atomizer head should also be removed and the spray needle thoroughly cleaned by placing the head of the gun into the thinner (see Fig. 353). Air should then be blown through the gun after withdrawing it from the thinner.

Failure to thoroughly clean the gun or to strain the pyroxylin will sometimes cause the paint passage to become clogged. This is indicated by an irregular spray or by a sputtering effect which occurs at the nozzle. This condition can be temporarily relieved by turning the atomizer head to the position shown in Fig. 351 and placing your finger over the end of the nozzle to prevent any air escaping. With the finger blocking the nozzle, pull back the air lever. This reverses the flow of air and will usually force any obstruction in the passage back into the container. While this will temporarily relieve the condition, it is a better practice to clean the gun with thinner as previously described and also strain the pyroxylin.

Servicing the Gun

With ordinary care the gun will last indefinitely and with the exception of occasionally replacing the packing and seeing that the gun is kept clean, little or no attention is required from a service standpoint.

After a long period of service the packing around the air and paint valves may become dry. This is usually indicated by paint leaking through the stuffing box, or by a sputtering effect at the nozzle, the action being very similar to that which occurs when the paint passages in the gun become clogged. When this occurs, first clean the gun as previously
described. If this fails to remedy the trouble, it will then be necessary to replace the packing.

To replace the packing in the air valve (see "A," Fig. 354) run out the air valve screw "B," and remove the plunger "C." Then, with a small screwdriver, unscrew the plunger guide and remove the old packing. Insert the new packing, making sure to pack it down tightly, then replace the parts.

To replace the packing in the paint valve (see "D," Fig. 354) run off the packing nut "E" and remove the old packing. A small wire will facilitate its removal. The new packing is inserted in the opening and pressed down tightly with any small blunt tool after which the packing nut is replaced.

In the event the nozzle becomes damaged and it is necessary to replace it, the old nozzle can be easily removed by first removing the top air plunger with a key wrench. (See Fig. 355.) Then with a standard ½ inch wrench, remove the nozzle as shown in Fig. 356 and replace it with a new one. When installing the new nozzle see that the seating surface is clean and draw the nozzle up tightly.

Remember These Twelve Pointers

1. Familiarize yourself with the spray gun before attempting to make repairs or take it apart.

2. See that the paint nozzle is absolutely clean and tight when replacing.

3. Keep vent hole open at all times.

4. Oil the working parts of the gun occasionally—just a drop of oil is sufficient.

5. Use suitable wrenches for all connections. Make sure connections are all tight.

6. Practice at the start until you are certain you have the proper atomization for your job. Don’t try to work too fast—speed will soon come with practice.

7. Always clean the gun when changing colors and at the end of each day. Also when the gun does not spray evenly. (Never leave the gun in the thinner overnight as it is liable to dissolve the packing.)

8. When connecting a new hose, blow air through it to rid it of soapstone and dirt particles.


10. Carefully strain all materials so that no dirt or particles of paint will clog up the lines. In the event some of the pyroxylin is left in the container over night, it should again be strained before using.

11. Watch the air pressure to see that it does not drop below the recommended pressure of 40 pounds.

12. Use the small round spray for touch-up work, high-lighting and refinishing wheel spokes.
Service for Sale's Sake

Beyond the thought of the profits derived from your Service Department through the sales of parts and labor, let us consider this department from the relationship it bears to new car sales.

The fact that the greater percentage of new car sales represent repeat orders or trades must be considered in connection with any sales program.

Who will get this repeat business—the Dealer who is today building up goodwill through satisfactory service.

GOODWILL is measured by the desire of your customers to CONTINUE PURCHASING YOUR GOODS.

Can you expect to be rewarded with repeat business except through service satisfaction?

Your Service Manager is responsible for the type of service you render—he is the most valuable man in your organization and could be and rightly so, called your

Super Sales and Service Manager

for it is through his SUPERVISION, DIRECTION, and SALESMAINSHP that you will be able to control to a large extent your repeat business.

IS HE THE MAN FOR THE JOB?
Seeing Is Buying

Goods Attractively Displayed Sell Quickly

Here’s an accessory display board that occupies little space and can be built at small cost.

And it boosts the sale of Ford accessories - it takes them out of stock-room bins and from underneath the counter and groups them into an attractive display that can be seen by everyone.

Good or Bad?

What would be YOUR impression on walking into a Ford representative's place of business and noting that the cars on his display room floor were covered with dust, the tires under-inflated and drops of oil had been allowed to accumulate on the floor underneath the cars?

What impression do prospective customers receive when they walk into your place of business?

Sell Your Service

Here’s how the West Bend Motor Co., of West Bend, Wis., capitalized the service training which their representative received at the Ford Branch Service School.

A postal card containing the following information was mailed to all Ford owners in West Bend:

West Bend, Wis., March 2, 1927

Dear Sir:

I have just returned from the Ford Motor Company Service School for Ford Dealers foremen, and I feel I am better prepared than ever to superintend the repair of Ford cars.

At this school we were taught the latest approved methods in repairing Ford cars to give the greatest satisfaction to the owner. I would like to have you entrust me with your next repair job, and assure you we will give it the best attention.

Yours for increased service,

FRANCIS REINKE, Foreman
WEST BEND MOTOR COMPANY

How Do Your Sales Compare?

During a period of four months one dealer sold 220 vaporizers, making a gross profit of $792.00 or $198.00 gross profit per month on the sale of this article alone.

Conditions in this territory are not exceptional— in fact, no better than the average— How did he do it? Simply by keeping his organization enthused by giving them a 5% commission on their accessory sales.

This accomplishment makes a good target for every dealer organization to shoot at. Accessory sales will increase in proportion to the effort put into them.

Develop and encourage a spirit of salesmanship throughout your organization. Offer some incentive—the results will astound you.
Attracts Trade

LET US
REFINISH YOUR CAR
Your own Choice of Colors in Pyroxylin

New Car Appearance At Low Cost
ONE DAY SERVICE
Prices from $17.50 up according to the size of your car

HENDERSON & LATHROP, INC.
Authorized FORD Dealers
AUBURN, N. Y.

Fig. 558

Attaching this card to dingy looking cars parked on the streets helps the Henderson & Lathrop Company sell more Pyroxylin finish jobs.

Fleet Owners' Operating Cost
The cost of operating a Ford car or truck, depends largely upon the care given the machine by the driver and to a certain extent on the judgment exercised by the Ford dealer in making repairs.

In the operation of large numbers of Ford cars or trucks, fleet owners are confronted with this problem of maintenance, particularly where cars are operated over a widespread area and do not come under their direct observation.

Under such conditions it is very essential that our dealers interest themselves in keeping repair charges as low as possible. This can be done by carefully inspecting each job and replacing no part where it is possible to make a satisfactory repair at less cost. Traveling fleet owner representatives must also be educated in the proper care of their cars. Show them the importance of proper lubrication, the correct way of applying the brake and the dozen and one things that lessen repairs.

In keeping down repair charges and showing drivers how proper care lessens repairs, you not only help fleet owners reduce their maintenance cost, but you offer the strongest inducement for repeat business—the low operating cost of Ford products.

We are all interested in the successful operation of Ford cars by fleet owners, as the influence of satisfied fleet owner representatives traveling through the territory is bound to effect dealers' sales.

Let's all work together in an effort to build an ever increasing fleet owner business.

40-60 Plan Earns More Money for Dealer and Mechanic
Dealers who have hesitated to adopt the 40-60 plan of paying their shop mechanics would quickly be convinced of its effectiveness if they could read the many letters of approval we receive from dealers all over the country who have thoroughly tried out the plan.

Here's a letter just received from a Texas dealer—it is typical of the letters received daily.

MORRISS MOTOR COMPANY
CORPUS CHRISTI, TEXAS

Ford Motor Company
Detroit, Mich.

Gentlemen:
We have been operating our shop on the 40-60 plan for the past several months and find that our mechanics average about $10.00 per week more than we were paying them on straight time—that our guarantee labor has been reduced more than 50%, thus proving that the 40-60 plan does cause the mechanic to be more careful with his work.

We have been able to increase our labor sales more than 100% in this length of time.

We find that we are able to secure the very best mechanics, while heretofore it was more or less difficult to secure this class of workmen. Frankly, we believe that if any dealer will give the plan a trial he would not go back on the old straight time basis.

If you have any dealers who are interested in coming to our plant to see how this system works out, our Service Manager, Mr. Charles, will be very glad to go into detail with them.

Yours truly,
MORRISS MOTOR COMPANY
(Signed) By JOHN E. MORRISS
Sell Your Service

The newspaper ad shown in Fig. 359 shows how dealers in Buffalo are advertising their service and how they are educating owners to differentiate between "ordinary repair methods" and Authorized Ford Service.

To sell more service, owners must know the advantages your service offers in the way of speed, skill, experience and equipment—service is a commodity that must be advertised and sold the same as any other commodity.

Expert Workmanship—Just as Important in servicing your Ford as it is in Building it

Expert workmanship, genuine Ford parts, and a flat rate labor charge are the advantages that all Ford dealers offer every Ford owner in this community in the servicing of his car.

When your Ford comes into an authorized service department, it is renewed rather than repaired. The mechanics are Ford Trained. They use tools and machinery made especially for servicing Ford cars and trucks. When replacements are needed, they put in new parts that are identical with those from which your car was originally assembled in the Ford Factory.

To keep your Ford car operating at its original efficiency and maintain its operating economy, have all your service work done by an authorized Ford dealer.

Authorized Dealers

BUFFALO CITY DEALERS

BIRK-NOTMAN MOTOR CO., Inc.
1987 Hertel Avenue
BLATZ BROTHERS
1131 Jefferson Avenue
THOMAS J. BLICK
165 Broadway
W. J. HOLMES, Inc.
340 Abbott Road
JERGE MOTOR CORP.
1637 Genesee Street
MELDRUM MOTOR CORP.
1521-23 Delaware Avenue
G. FRED CALMEACK
1620 Niagara Street

ALFRED S. MELDRUM, Inc.
150 North Franklin Street
O'BRIEN MOTOR CO.
518 W. Elba Street
QUALE GARAGE CO., Inc.
2005 Main Street
TAYLOR MOTOR CORP.
3000 Bailey Avenue
ALLEN STREET GARAGE
139 Allen Street
KENMAREY MOTOR CO.
281-31 Delaware Avenue
Kenmore, N. Y.

ERIE COUNTY DEALERS

PHILIP JERG'S SONS CO.
Lancaster, N. Y.

CECIL C. BAKER
Williamsville, N. Y.

JOHN SHUTT, Jr.
Grand Island, N. Y.

PARR-MARTIN MOTOR CORP.
Gardenville, N. Y.

ROSS E. BROWN
Holland, N. Y.

A. C. FISHER
Springville, N. Y.

WILLIAM ROELLER
Eden, N. Y.

LOUIS J. H. OTT
Woodlawn Station,
Lockawanna, N. Y.

BAYE BROTHERS
Angola, N. Y.
Service—at a Profit

The year 1927 affords you an opportunity to earn more net profit from the Service Department of your Ford business than you ever made during the entire history of the business.

This is a strong statement but actual figures compiled from the records of Ford dealers who are aggressively working the Service end of the business, prove it is true. And it can be proved for you and for your territory, regardless of conditions.

To take full advantage of this most profitable part of your Ford business you must have:

1—The latest time-saving tools and devices, including Pyroxylin spray equipment.

2—Proper supervision of mechanics working on the 60-40 profit-sharing basis.

3—Proper shop lay-out. Clean and orderly arrangement.

4—Prompt and courteous treatment of customers.

5—Service follow-up system—including Service salesmen.

6—A determination to get every Ford owner coming to you for everything necessary for his car or truck (including gas, oil, tires, wash and polish, Service, accessories, refinishing or complete reconditioning) and a sincere desire to do all these things to the owner’s satisfaction.

There’s an average of $10 per month per Ford owner on car maintenance in your territory for you if you do these six things. There is 50% gross profit for you on your Repair Sales if you are operating on the 60-40 profit-sharing basis. Figure it out for yourself. The volume and the profit figures are surprising.

Do You Want That Money?

Then do these six things in the order listed. Start on them today—the loss to you is too great to put it off another day.

You Can Equal This Record

Here’s what one Ford dealer actually accomplished during the past six months since adopting this program. He has about 5,000 Ford owners in his territory. If you have 500 owners you should be able to get results equal to one-tenth of these figures by actually doing the six things mentioned above.

He increased his shop labor profit from $3,000 to $11,000 in six months.

He started out six Service Salesmen (who sold only Service, Repair Parts and accessories—no cars) and his parts sales jumped to $3,200 the first week. His battery sales increased from 15 per month to 110 per month in the six months’ period. He says he intends to sell an average of 200 batteries per month because 5,000 owners mean 2,500 Ford battery sales per year or over 200 per month.

He insists that with 5,000 owners to solicit for everything necessary for their cars, his sales to them (including all articles mentioned in item 6, paragraph 3) mean a possibility of $50,000 sales per month or $600,000 per year in this department of his business.

By 4:00 P. M. Monday afternoon his salesmen had written up orders for $1,900 worth of service work.

$19.50 for a Pyroxylin Finish

He charges $19.50 for a new Pyroxylin finish on any Ford car—standardizing on one price for all types and for any car.

He fixes a price of 95 cents for wash and polish and cleaning upholstery and has three latest type wash machines busy constantly and every customer buys something else.

He has a $95 special reconditioning offer which encourages many owners to drive their cars another season.

On old cars or trucks where competitive allowances are $100 to $150 too high he offers to completely recondition and repaint to “look like new, run like new and with new car guaranty” for about one-half the actual cash difference required to purchase the other car. He thus blocks the sale, keeps a Ford owner satisfied and makes a good percentage on the shop work and parts, instead of losing a sale and a customer.

One Service Salesman—not permitted to sell any new cars—says he will easily earn $7,500 in 1927. The dealer himself is confident and happy over the future of his entire business. His whole organization is enthusiastic.

AND HIS NEW CAR SALES HAVE STEADILY INCREASED AS A RESULT OF THIS SERVICE PROGRAM.
Rebushing Spindle Bodies

Spindle Body Bushings Must Present a Full Bearing Surface to the Axle

Fig. 360

Here are some spindle body bushing tools that are time savers in the shop and they insure absolute accuracy in facing off the bushings.

When rebushing spindle bodies these tools are used as follows:

After pressing in the new spindle body bushings and line reaming them, inspect the forked ends of the axle. It is important that the bearing surfaces on the forked ends against which the spindle body bushings come in contact, are absolutely smooth and level. If the axle is worn or grooved at these points, it should be faced off until a smooth bearing surface is obtained.

When the axle is O. K., measure the distance between the two forked ends. The adjustable gauge is used for this purpose (see Fig. 361). After obtaining this measurement, insert the threaded shaft on the spindle body bushing facer, through the spindle body, and position the facer in a vise. Next place the spacer (see "A," Fig. 362) over the end of shaft so that it rests squarely against the spindle body bushing. The knurled lock-nut "B" is then drawn down against the spacer (the lock-nut is tightened by hand). With the facing tool positioned in the vise, measure the distance between the spacer and the facing tool cutter (see Fig. 363). This measurement should be the same as the distance between the forked ends of the axle. If

Fig. 361
the distance is greater than the height to which the gauge was set when the forked ends of the axle were measured (see Fig. 361), the spindle body bushings should be faced off a little at a time until the gauge touches the cutter and the spacer as shown in Fig. 363. This will insure the bushings resting squarely against the forked ends of the axle when the spindle bodies are installed. When facing off the spindle body bushings, an equal amount of stock should be removed from both bushings and the facing tool lock nut tightened immediately after each cut. (See Fig. 364.)
Front Axle Alignment Indicators
A Quick Way to Locate a Sprung Axle

These special indicators save time and insure accuracy in checking front axle alignment.

Any misalignment of the axle, regardless how slight, can be quickly detected, as the length of the indicators exaggerate the variation so that it can easily be seen.

To check the alignment of an axle, insert the indicators through the spindle bolt holes (see Fig. 365) then sight along the axle and note whether the indicators are in line. If the indicators are in line, the alignment of the axle is O.K. If they are not in line, the axle is sprung and it will be necessary to straighten it.

Sometimes the beam of the axle is O.K. but the forked end has been sprung. This can be checked by inserting one of the indicators through the spring perch hole in the axle and the other one through the spindle bolt hole (see Fig. 366). If the indicators are not in exact alignment, the forked end of the axle is sprung. Both ends of the axle should be checked in this manner.

“Gyp” Peddlers Active

There are various unscrupulous concerns whose representatives are going about the country selling large and small carbon brushes, parts numbers TS125 and TS126, as identical with the material we are furnishing or that is being furnished to the Ford Motor Company. Such fraudulent attempts at marketing inferior material deserve nothing but condemnation.

There are concerns who go so far as to use the script word “Ford” and pack imitation Ford parts in blue cartons to deceive the trade. Ford dealers can exert considerable influence against these evil practices by declining to listen to any bargain counter proposition.
Do Owners Know Your Service?

When a Ford owner goes to an unequipped garage for repair work, or to an accessory store for parts it is principally because he is not sold on the importance of buying genuine parts and service from Authorized Ford Dealers.

Your biggest service problem today is to make owners realize that expert workmanship is just as essential in servicing a car as it is in building it—that no car can operate at its original efficiency or maintain its operating economy under “cheap” and haphazard repair methods.

Tell local owners the advantages YOUR service offers in the way of speed, skill, experience and equipment explain how precision machines enable you to work to a degree of accuracy that practically eliminates the element of human error.

Encourage every owner to invest in service work NOW,—KEEP HIM A PERMANENT CUSTOMER THROUGH THE EXCELLENCE OF YOUR SERVICE.
Use Proper Hookup When Towing
Incorrect Hookup May Cause Damage

**Fig. 367**
Right way to tow the Fordson—Towing strain evenly distributed when this hookup is used.

**Fig. 368**
Wrong way—Towing strain incorrectly applied. May result in breakage of the gear cover.
Courtesy and Cleanliness
Has built a splendid service business for Moss Patterson
Motor Co., of McAlester, Oklahoma

By stressing the importance of courtesy and cleanliness in the shop and developing a spirit of salesmanship throughout their organization, the Moss Patterson Motor Co., of McAlester, Okla., have built up a splendid service business.

The following letter from Mr. Patterson describes some of the methods that is making his place service headquarters for local Ford owners:

"We are so enthused over the possibilities of making money in our Service Department that we just can't keep from writing you about it once in a while.

"We discovered after installing the bonus system (paying 5% commission to employees on all parts, accessories and service that they sell) that the first 30 days following its installation our service volume increased 26% and our net profits 300%.

"We operate a complete service follow-up system. In our service follow-up files are listed the names of 2,400 Ford owners with complete service data on their cars.

"We try our best to live up to the sign displayed in our shop, namely: 'WE TAKE PRIDE IN OPERATING THE CLEANEST SHOP IN OKLAHOMA'.

"Our mechanics change overalls regularly and are instructed at our weekly meetings on the value of courtesy, cleanliness and other features of our business that will increase the value of our service. We encourage suggestions from our employees. Some of the best plans for increasing our business have been given us by our employees at these meetings.

"Each month we send our service letters and post cards to every Ford owner in our locality. The post cards especially have been very beneficial in increasing the volume of the labor operations they describe. (see Fig. 369.)

"In all our advertising we stress the fact that we are a high-class service organization using modern repair equipment and operating in a shop where everything is kept clean that we take pride in performing efficient work. Contrary to the usual 'No Admittance' signs displayed in shops, we display
one over our main entrance inviting customers to visit our shop.

"We pay our mechanics a commission for each vaporizer that they sell, plus their share of the installation charge. This same plan is also used on batteries and other Ford accessories. We feel sure that this one policy alone will sell over 100 vaporizers for us this month.

"Last year we made our shop one of the most profitable departments of our business—this year we are going to do even better."

**Dealer’s Monthly Stock Orders**

THE Monthly Stock Order Form was prepared to assist you in maintaining an adequate stock of parts—it is the first step in providing satisfactory service to your customers.

One of these forms is forwarded to you regularly each month with the request that you fill in your parts requirements and return it to the Branch on the date specified. This is very important as our stock departments at the Branches are prepared to handle a definite volume each day and if you are late in sending in your order, the schedule is upset and delays are apt to occur.

Check your repair stock at least once a month. Analyze your sales of the items listed on the first four pages of the Stock Order against the quantity you have on hand. These items represent the main portion of your investment in service stock.

To get the biggest profit from your Parts Department, you must be able to promptly supply each part called for. Are your stock-keeping and stock-ordering methods giving you this maximum profit?

You cannot afford to be indifferent to this matter of stock maintenance; we cannot afford to have any weak spots in our service program.

**DO YOU TAKE YOUR SERVICE FOR GRANTED?**

Battery Sales Data

DO you know that the Ford battery is equipped with full size 5 x 5 3/4 inch plates all uniform and made from the highest grade of battery oxide?

That it has 13 plates per cell. This is equivalent to an active surface of 30 square inches or 20% more capacity than an 11 plate battery.

That the high grade Port Orford cedar used for the separators greatly outlasts softer and cheaper woods.

That its greater capacity allows frequent starting and the use of parking lights, dash light, stop light, etc., without draining the battery.

That only the first run highest grade electrolyte is used—impurities in cheap electrolyte result in a sluggish battery.

That it is designed and built rugged enough for automotive use yet operates a radio very satisfactorily due to its extra capacity.

That retailing at a price of $12.00 it represents the biggest battery value per dollar on the market.

HAVE you ever checked up to find out what opinions local owners have of your service? If you don’t know and never tried to find out, don’t you think it is about time that you did? The dealer who takes too many things for granted about his service finds himself losing out in the long run.
GOOD repair work goes hand in hand with well kept service equipment. Satisfactory work cannot be turned out if keen edge tools, precision gauges, etc., are carelessly handled and thrown into boxes containing hammers, chisels, etc.

Every tool should have a particular place and mechanics should be required upon completion of a job to return the tools they have used to their appointed places. This not only saves time when the tools are again required but it insures proper care being taken of them. It also increases the life of the tools and cuts down on the overhead.

A new cabinet has recently been designed which helps solve the problem of proper tool care—it provides a convenient and safe place for housing practically every piece of service equipment used in the shop. In addition, it enables the shop foreman to determine at a glance whether or not any tools are missing.

The cabinet is 4½ feet high by 1½ feet wide. It is constructed entirely of wood to afford maximum protection to all keen edge tools. The fittings are made of cast iron and are securely fastened in place—a separate place being provided for each tool.

The price of the cabinet is $23.00 f. o. b. Arcade, N. Y.

Orders may be placed with the nearest Ford Branch who will arrange for shipment to you direct from K. R. Wilson.
Reseating Valve Seats

Care must be used not to cut too deep or leave "chatter" marks around seat

When grinding valves always carefully inspect the valve seats in the cylinder block, also the bevel face of the valves, to see that they are not pitted or burnt (if the face of a valve is pitted, reface it in a valve refacing machine as described in the November, 1926 issue of the Service Bulletin).

When a valve seat in the cylinder block is burnt or deeply pitted it allows the hot exhaust gases to escape through the valve port, and if not corrected it will destroy both the valve seat and the valve.

Valve seats that have been burnt or pitted are trued up with a valve reseating tool. The reseater is inserted into the valve port in the cylinder block and just sufficient metal removed to clean up the burnt or pitted spots. When using the reseater, care must be exercised not to cut too deeply into the valve seat, or to leave "chatter" marks around the seat. Chatter marks can be prevented if a steady, even pressure is applied to the reseater as it is being slowly revolved.

Some mechanics place a piece of paper between the reseater and the valve seat, claiming that by cutting through the paper they make a smoother cut and eliminate any possibility of chatter.

K. R. Wilson furnishes two reseating cutters, i.e., a 45° cutter and a 75° cutter. The 45° cutter is a double end cutter. One end is notched, the other
end is ground smooth. The notched end
of the cutter is the "roughe" or fast
cutting end. It is used only to cut through
the glaze and carbon that forms around
the valve seat. After removing any
glaze or carbon the "finishing" end of
the cutter is inserted into the valve seat
(see Fig. 371) and a smooth even seat
is formed.

Sometimes a valve seat has been so
badly burnt that it is necessary to cut
away considerable metal in order to
clean up the seat. This, of course, widens
the valve seat. It is then that the 75°
cutter is used (see Fig. 372); this
cutter being ground at a 75° angle,
narrows down the original 45° seat and
prevents the possibility of forming a
carbon pocket.

After refacing the valves or reseating
the valve seats, the valves must always
be retimed. Refacing the valves or re-
seating the valve seats causes the valves
to seat further down in the cylinder
block and as a result the timing is
changed. The valves must be timed by
piston travel as described in the Novem-
ber, 1926 issue of the Service Bulletin.
Attempting to time valves in an engine
which has been in service for some
time by checking the air gap between
the valves and push rods is impractical
as the wear on certain parts, such as
the push rods, camshaft, time gears, etc.,
renders such a method inaccurate.

When cutting out old babbitt bearings
in the cylinder block, use a sharp chisel
and strike the chisel no harder than is
necessary to cut through the babbitt.
If the chisel is struck a heavy blow there
is a possibility of breaking the bearing
guide in the cylinder block.
Change in Transmission Clutch Disc

*New disc can be used with either No. 3311 or 3311-B, brake drum*

**Fig. 373**

**PART** No. 3329, transmission clutch disc, has been changed from the design shown in Fig. 373 to the design shown in Fig. 374.

The new design clutch disc (Fig. 374) can be used with either No. 3311 or 3311-B brake drum; whereas the old style disc (Fig. 373) can be used only with the 3311 brake drum.

In future only the new type disc will be supplied.

**Fig. 374**

**Commutator Must Be Properly Set**

*Special Gauge Makes Setting Easy*

**W**hen installing the commutator, it is very important that it is set so as to insure a correctly timed spark (an incorrectly timed spark results in burnt valves, knocks, and may cause the breakage of the starter drive).

To correctly set the Ford commutator, first fully retard the spark lever, then with the commutator pull rod installed, measure the distance between the center line of the end of the pull rod where it extends through the commutator case, and the center line of the commutator case spring bolt. The distance between these two points should measure 2½ inches with the spark lever fully retarded. If the distance is greater or less than 2½ inches, adjust the commutator pull rod by bending the rod until the correct measurement is obtained.

K. R. Wilson makes a special gauge which simplifies the correct setting of the commutator. When the gauge fits over the end of the pull rod and the head of the commutator case spring bolt, the commutator is properly set. (When installing the gauge make sure that the spark lever remains in the retarded position.) If the gauge does not fit over these two parts, the commutator is incorrectly set and should be adjusted by bending the commutator pull rod (see Fig. 375). The price of the gauge is 20 cents net.
Present Ford Owners Are Your Best New Car Prospects

*Keep them tied to you by good service until they are ready to buy*

That the Special Inspection Service Folders recently sent you are excellent business getters is proved by the number of enthusiastic letters received from dealers who are actively carrying out this plan.

To get results, the plan must be extended to every owner in your territory who is not having his car regularly serviced by you. If he fails to respond, phone him, or better still, have one of your salesmen make a personal call.

By doing this, you keep in active touch with your local owners—you locate much service work that should be done and you secure a bigger prospect list for both the new car and truck.

Take full advantage of the opportunities which this plan presents and follow up every Ford owner—look ahead to the day when these owners will trade in their present cars and *keep them tied to you by good service until that time comes*.

The owner who invests in service work *now* is much more likely to retain his car until you are ready to sell him another.
Price of Ford Battery Reduced

New retail price provides splendid opportunity for bigger profits

Effective September 1st, the retail price of the Ford Battery will be reduced from $12.00 to $11.00 with an exchange price of $10.00 to owners who trade in their old batteries.

Selling at the lowest price in Ford battery history, a price made possible only by Ford quantity production—equipped with 13 plates—cased in hard rubber and built to give longer usefulness, greater capacity and greater starting ability than any other battery selling near its price, the Ford 13-plate battery provides a splendid opportunity for profits to those dealers who energetically go after the business.

To get this business it is essential that every car owner in your community is acquainted with present Ford battery value. This can be done most effectively by advertising in local newspapers, circularizing car owners and arranging attractive window displays.

This is a wonderful opportunity to build up your battery profits—don’t fail to cash in on it.

Shop Course for Salesmen Proves Profitable

Special training enables dealer’s salesmen to sell more than $1000 worth of repair work in 10 days

To successfully sell service, your salesmen should thoroughly understand the advantages of your new shop equipment—the uniform accuracy of the work it performs—the new standards of workmanship it has brought about and the dozen and one things that distinguish YOUR service methods from ordinary repair work.

The value of giving salesmen a thorough course of training in the handling of Wilson service tools is clearly shown in the following letter written by the W. T. Pate Auto Company, of Jackson, Miss.

Ford Motor Co.
Detroit, Mich.

Gentlemen:

Our salesmen have recently completed a shop course in our own shop under the supervision of the Service Superintendent.

Night after night these men learned the advantages of precision measurements, the align reaming process, the accuracy of the various gauges, so that now they can talk to Ford owners on service work finished to the thousandth part of an inch.

Our experience has proven that simply telling an owner that we specialize in Ford service work and use machinery designed for that purpose is not nearly as convincing as giving him detailed information. For example, telling him the exact expansion of certain parts under operating conditions and how our equipment enables us to fit these parts with such precision that the exact clearance is obtained to take care of such expansion.

Since completing the course our salesmen have shown splendid results in securing repair work—during the last ten-day period they alone brought in more than $1,000 worth of service business.

Naturally, we all feel enthusiastic with the results of this special training course, as it is paying dividends both to our salesmen and to ourselves.

Yours very truly,
W. T. PATE AUTO COMPANY
First Impressions Are Lasting

Neat and uniformly dressed service men reflect better service

Fig. 376

NOTHING stamps the character of your shop more than the appearance of the service man who greets your customers. Cleanliness is next to Godliness—your shop men may appear spick and span in their street clothes but it is their work clothing that your customers look at and from which their impression of your service is formed. Therefore, if a clean shop coat or coverall is required for every man each morning or even twice a day, it will positively pay you to see that this is done.

To help make your shop reflect "Better Service," we are now furnishing standardized shop garments designed specially for Ford service employees and made according to our own specifications, at the following low prices:

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Net Price Per Dozen</th>
<th>Net Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shop coats, 36 to 46</td>
<td>827.00 $2.25</td>
<td></td>
</tr>
<tr>
<td>Shop coats, 48 and 50</td>
<td>28.50 2.50</td>
<td></td>
</tr>
<tr>
<td>Mechanics' suits, 36 to 46</td>
<td>28.50 2.50</td>
<td></td>
</tr>
<tr>
<td>Mechanics' suits, 48 and 50</td>
<td>31.50 2.75</td>
<td></td>
</tr>
</tbody>
</table>

Both the shop coats and mechanics' suits are made of exceptionally high grade mineral dyed 4-ply khaki with the script word "Ford" embroidered in red across the back. The cut of the garments gives them an unusually trim effect, while the special double chain stitching, which is used throughout, insures durability and entire satisfaction from each garment.

Orders for the garments should be placed direct with the nearest Ford Branch
A New Use for Your Paint Spray Outfit

Provides quick and inexpensive way to paint your place of business

In preparation for the showing of our new product, which is bound to be a big event, we know you will want your place of business to look its best, both inside and out.

If it needs cleaning or if it requires repainting have it taken care of at once. Nothing improves the appearance of a building like a coat of new paint—it adds a snap and freshness that harmonizes with new merchandise and impresses prospective buyers.

Using pressure feed and the new KRW-Milburn extension (which will fit your regular Milburn spray gun) you can now paint your place of business at an unusually low cost and in about one-fifth the time required with the hand brushing method.

For smaller dealers, satisfactory results can be obtained by using the regular spray gun and gravity feed. This latter method does not require the purchase of any additional equipment beyond a few connections, pulleys and ropes, which can be obtained locally.

Both the pressure feed method and the gravity feed method are described in the following articles.
Pressure Feed Painting with KRW-Milburn Extension

This new outfit has proved a big time saver in the painting of both the interior and exterior of buildings.

Its extension feature eliminates the use of ladders and scaffolding and the actual painting work is accomplished in about one-fifth the time required with the hand brushing method.

By means of special attachments and fittings, the extension spray outfit has been adapted to the standard KRW-Milburn paint spray gun which many dealers are now using. This latter unit was fully described in the April, 1927, issue of the Service Bulletin and consists of the following:

- Type "E" KRW-Milburn gun with quart container.
- Air purifier.
- Air pressure regulator.
- 25 feet of air hose, with connections.

The extension spray outfit, which has been designed to work with the KRW-Milburn unit, consists of:

- 1—8-foot paint gun extension.
- 1—2-gallon pressure feed paint tank with fittings.
- 1—No. 47 nozzle.
- 1—No. 55-27 (FF-4) atomizer head.
- 25 feet of paint hose, with connections.
- 1—\(\frac{1}{4}\)-inch spud.

To secure satisfactory results with this special extension, the following instructions must be carefully observed.

Before beginning any connections or set-ups, blow air through the length of hose furnished with the extension spray outfit; this will rid it of any dirt particles or soapstone.

Projects Painting Approximately Fourteen Feet

Pressure feed painting is done with an eight-foot aluminum extension, developed by the Milburn Company for work of this kind. The extension coupled with the operator's reach projects the painting operation to an approximate height of fourteen feet, thus permitting easy painting of ceilings and high walls.

The extension is ruggedly constructed of strong tubing and has the gun and angle controls close to the bottom for easy manipulation of the spray. It is light in weight, well-balanced and easily handled. It grips the standard Milburn Gun, which, while in use, can be swiveled to any desired angle—a constant necessity for proper painting operations.

The necessary equipment to adapt the regular spray gun for this work is obtainable through K. R. Wilson, 10-16 Lock St., Buffalo, N. Y. The complete outfit as listed below sells for $40.00 to the dealer. For the benefit of the dealer who only desires certain pieces of this equipment, the following prices apply:

- Extension ....................... $18.00
- Air hose with connections, in multiples of 25 feet ................. 4.00
- Paint supply hose with connections, in multiples of 25 feet .... 7.00
- 55-27-4 atomizer head ................ 1.50
- No. 47 nozzle ....................... .90
- 2-gallon pressure tank .................. 12.00

Installing Connections

Because it is necessary to move the unit (with the exception of the air compressor and purifier) around the room while painting the walls and ceilings, the first step is to disconnect the regulator from the air purifier and the hose from the regulator. Screw the regulator outlet into the upper end of the tee on the tank. (See “A,” Fig. 377.) Attach the \(\frac{1}{4}\)-inch spud to the air purifier outlet "B."

Next connect a hose line (procurable in lengths of 12\(\frac{1}{2}\) feet, 25 feet or longer, according to your requirements) from the air purifier outlet “B” to the inlet connection “C” on the air regulator.

The 25-foot length of air hose (which was furnished with the KRW-Milburn Pyroxylin Spray Equipment) is now connected from the other tee outlet “D” to the spray gun inlet as shown at “E.”

Next remove the quart container and cover from the gun by uncoupling at the nut. Then connect the 25-foot length of paint hose (black) from the pressure tank outlet (see “F,” Fig. 377) to the paint inlet on the gun “G.” Make certain that all connections are tight.

Attaching the Gun to the Holder of the Extension

Remove block “H” and insert the paint spray gun in the holder. Replace the block and tighten, being careful to place the gun in
the holder as far down as possible, and making certain that the trigger-pull bar "I" is extended over the gun handle. Now pull back the gun lever "J" and pass the trigger-pull bar "I" over it.

Next insert both the paint and air hose in the hose clamp "K" and tighten the bracket. Allow ample hose between the hose clamp and the gun to take care of the slack when swiveling the gun in an upright position.

"L." shows the slide grip. By pulling down this grip, the spray gun is put into operation. The atomizer head of the gun should be turned in the proper position prior to beginning the painting operation so as to procure a flat spray to suit the work. When the painting operation is finished, push up the slide grip. This shuts off the air and paint.

A feature of this extension is that it can be swiveled to any desired angle. By turning the swivel handle "M" to the right, the gun is swiveled upward; to the left, the gun is turned downward. The elevation of the gun should be adjusted to the angle best suited for the work.

**Placing Paint in Pressure-Feed Container**

Unscrew the filler plug "N" on the tank and pour the paint into the opening, using a funnel and fine strainer. All paint must be thoroughly strained before putting it into the container so as to remove any sediment or gritty matter. This tank holds 2 gallons; after it is full replace the plug tightly.

Start the air compressor and keep it running until the air storage tank nearly reaches its maximum capacity. Adjust the operating pressure with the regulator by turning the key "O" to the right. The pressure is registered on the air regulator gauge shown at "P." 50 to 80 pounds air pressure is recommended consistent with the viscosity of the paint to be used. The operator should experiment with the various pressures until a spray suitable for the work is obtained. Then open the paint outlet valve "Q" on the tank. This permits the paint to be supplied, under pressure, to the gun. The painting operation can now be started.

**Cleaning**

The spray gun and paint material hose should be cleaned at the end of each day. These, together with the pressure tank, must also be cleaned when changing colors or when painting is completed. Before cleaning any equipment, the air pressure in the tank must be released.

To do this, shut off the air pressure into the tank by turning the regulator key "O" to the left. Slightly unscrew the filler plug "N" just enough to allow the air to escape. This will release the pressure in the tank and all hose. Then empty all paint from the pressure feed tank back into the original paint container, this is done by unscrewing filler plug "N."

Next pour thinner into the tank and replace the filler plug tightly. Turn the regulator key "O" to the right and adjust for about 40 pounds pressure. Then pull down the slide grip of the extension until the thinner issues clear from the gun nozzle. This indicates that the gun, paint hose and tank are clean.

When this is done, shut off the air pressure by turning the regulator key to the left and release the pressure in the tank and hose as explained in the second paragraph above.

Instructions for servicing the spray gun were contained in the April, 1927, Service Bulletin. There is practically nothing to get out of order on the tank or extension and with good care they should last indefinitely.

**Gravity Feed Painting with Standard Spray Gun**

Special connections have also been developed to permit dealers to use their Milburn paint spray guns advantageously in painting their places of business, using gravity in place of pressure feed.

When using your spray gun for this purpose, a 55-27-4 atomizer head, and No. 47 nozzle is substituted for the regular atomizer head and nozzle of the spray gun.

Fig. 378 shows how your regular paint spray gun with a special atomizer head and nozzle can be coupled up to a gravity paint feed, using the regular thinner.

This system would not necessitate the purchase of any additional equipment, beyond pulleys, ropes, pet cocks, connections and the necessary hose, which can be purchased locally. Adapters for this purpose can either be bought or made in accordance with the sketch.
Connections Used with Standard Spray Gun for Gravity Feed Painting
Can be purchased locally or made up in your own shop

ADAPTORS FOR CONNECTING BINKS HOSE TO DE VILBISS, SPRACO OR MILBURN EQUIPT.

ADAPTOR FOR CONNECTING DE VILBISS GUN TO BINKS MILBURN OR SPRACO HOSE

3/8" X 3/8" PET COCK 5" METRIC THREAD

OUTFIT FOR SPRAYING FACTORY PAINT ON WALLS & CEILINGS BY SERVICE STATIONS & GARAGES. USE EMPTY 5 GAL. LACQUER OR PYROX THINNER PAIL. 1/2" FLUID HOSE, 1/4" AIR HOSE.

Fig. 378
Makes Speedy Job of Engine Cleaning

New kerosene spray gun quickly removes all grease and dirt—sells for $7.00 net

and attach the flexible tubing furnished with the outfit to the syphon tube (see “C,” Fig. 380). The opposite end of the tubing is placed in a kerosene container as shown. (DO NOT USE GASOLINE.)

Next press the trigger “B” and adjust the stream as desired. To obtain a small stream, screw in nozzle “E.” To obtain a heavy stream, screw the nozzle out. When the correct adjustment is obtained, lock the nozzle in place by tightening lock nut “D.”

Servicing the Gun

After long periods, the packing around the air valve or trigger may become dry. This is usually indicated by air leaking through the stuffing box. If this occurs, tighten the air valve nut “A” slightly. Should this fail to remedy the trouble, run out the nut and remove the old packing, replacing it with new packing. If the regular packing is not available, twisted asbestos packing impregnated with glycerine can be satisfactorily used.

How it Operates

To put the gun in operation, connect an air hose to the nipple on the handle.

Orders for the gun should be placed with the K. R. Wilson Co., of Buffalo, N. Y. They will ship to you direct on a C. O. D. basis.
Do Your Windows Sell?

ATTRACTION window displays are one of the strongest links between your goods and the purchasing public—they produce faster sales, quicker turnover and bigger profits.

In arranging a window trim, display articles that have a strong seasonal demand. Right now is an excellent time to feature Ford batteries. The recent reduction in price, coupled with the fact that this is the commencement of the battery season, makes attractive displays of this item unusually effective.

Don't crowd too many items into your display. A good display should contain, first, an attention target to make folks look. Second, an interest element to make them stop. Third, an exhibit of what is for sale, and fourth, a strong urge to act. That's the formula in four parts.

In addition to featuring batteries in your window, display them on your counter with a card announcing their new price. This serves as an additional reminder to customers after they are inside.
Is Your Service Manager a Salesman or an Order Taker?

Check a few cars in your shop against the operations listed on repair orders

In glancing over some repaired cars in a dealer's shop awaiting delivery to owners, here are a few items noticed which were not mentioned on the repair orders. For example:

- Two of the cars had one or more hub caps missing.
- Three cars had burnt out tail lamp bulbs.
- Two cars had a headlamp bulb burnt out.
- The spare tire on one car was flat.
- Four of the cars had one or more oilers missing.

The service man who wrote up the repair orders was questioned and it developed that he wrote up only the repairs that customers specified. No effort was made to point out additional work needed.

Here was a case where lack of salesmanship was costing the dealer dollars and cents every day.

Check this situation in your own shop—It may be affecting your profits—It may be reflecting on your service.

The Owner's Point of View

Too frequently we hear the statement made by car owners that such and such a repair shop is a good place to keep clear of. In some cases the remark is justified, but in many cases it is based upon the memory of one or two unfortunate experiences on account of which all service stations and repair shops are looked upon with distrust and the word "Service" simply becomes a byword.

We all know from personal contact with service stations that some places please while others antagonize. It may be lack of courtesy on the part of a mechanic, a questionable bill, or one of a dozen small things that are likely to happen. The result is we immediately condemn all service stations, their owners and their mechanics and make a fervent pledge that we will not go near the place again. We are quick to note slovenliness and lack of courtesy in others, so it is only fair to presume that our own customers are just as critical of our methods; and when a customer has cause for complaint it usually does not rest there, but is passed around pretty liberally and does not lose anything in the telling.

Ford dealers throughout the country have it in their power to unite in one general campaign—"Perfect Service." By service is meant more than doing exactly the specific job and selling exactly the necessary supplies; that is just stone cold business. It also means the spirit of welcome and confidence which springs from personal interest taken in each customer, cheerful advice given solely to make a fellow's journey easier and creating a satisfaction that will leave a lasting good impression.
Dealer’s Newspaper Ads Boost Battery Sales
And they tie in effectively with attractive window displays and battery folders

IT IS more than a coincidence that dealers who are advertising in local newspapers and prominently displaying batteries, lead in battery sales—it proves the sales value of getting home to every car owner the new low price of the Ford battery.

And, too, local advertisements tie in effectively with attractive window trims and the battery mailing pieces sent you. These sale helps form a combination that make an unusually strong appeal; one that insures complete coverage and keeps you in closer contact with local owners.

Furthermore, making your sales appeal direct to car owners is more profitable merchandising than attempting to build up a sales volume through the wholesale trade.

Cultivate owners’ interests—gain their confidence, and yours will be the place they think of when in need of supplies.

BATTERY SALE

Genuine 13 Plate Ford Battery
Now $10.00 AND YOUR OLD BATTERY

CRUNCH

FORD Battery
Now $10.00 And Your Old Battery
This Genuine 13-Plate Ford Battery will fit all makes.

SPECIAL!!

GENUINE 13 PLATE FORD BATTERY FOR AND YOUR OLD BATTERY
Now $10.00 AND YOUR OLD BATTERY

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Fig. 382
Improved Equipment for Servicing the Fordson

New equipment saves time and assures accurate work

Modern service equipment is indispensable in building up a successful service business. Correctly used, it assures precision workmanship, it creates more satisfied customers and it brings in a bigger volume of repair work.

And it is the busy shop that attracts the better class of mechanics—skilled workmen who produce extra profits. Labor turnover is reduced and the entire shop operates more efficiently... That is what good equipment means to a service station.

Fig. 383 shows the new tools that make up the improved equipment for servicing the Fordson. The tools have been carefully designed to insure accuracy, speed and strength and to simplify repairs.

A feature of the equipment is that it can be used out in the field as well as in the shop.

The operation of the equipment is quite similar to the improved Ford equipment. A few of the operations, however, require special attention. For example, the proper setting of the boring bar cutter; the main bearing cutters, and the correct plates to use in making up the various puller combinations.

These operations will be described in detail in the next few issues of the Service Bulletin.

Below are listed the names and part numbers of the tools shown in Fig. 383.

<table>
<thead>
<tr>
<th>Improved Fordson Service Tools</th>
<th>NAME</th>
<th>PART NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Motor stand</td>
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<td>201</td>
<td>Motor truck</td>
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<td><strong>Main Bearing Tools</strong></td>
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<td>203</td>
<td>Babbitt fixture for main bearings</td>
<td>203</td>
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<tr>
<td>203-A</td>
<td>Babbitt pouring plates</td>
<td>203-A</td>
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<tr>
<td>204</td>
<td>Peining tool</td>
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<tr>
<td>205</td>
<td>Babbitt boring fixture</td>
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<tr>
<td>205-A</td>
<td>False camshaft</td>
<td>205-A</td>
</tr>
<tr>
<td>205-B</td>
<td>Extension wrench</td>
<td>205-B</td>
</tr>
<tr>
<td>205-C</td>
<td>Hand crank for boring fixture</td>
<td>205-C</td>
</tr>
<tr>
<td>206</td>
<td>Main bearing facer and fillet tool</td>
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<td>207</td>
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<td>209</td>
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<td>Bearing scrapers (set of 3)</td>
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<td>211</td>
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<td><strong>Cylinder Reboring Tools</strong></td>
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<td>212-A</td>
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<td>212-B</td>
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<td>212-C</td>
<td>Locating plugs</td>
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<tr>
<td>212-D</td>
<td>( \frac{3}{8} \times 24&quot; ) rod for removing locating plugs</td>
<td>212-D</td>
</tr>
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<td>213</td>
<td>Indicating dial gauge</td>
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<td>214</td>
<td>Micrometer 3&quot; to 4&quot; outside</td>
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<td>217</td>
<td>Plate for pulling bearing S-19</td>
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<tr>
<td>217-A</td>
<td>Plate for pulling bearing S-351</td>
<td>217-A</td>
</tr>
<tr>
<td>217-B</td>
<td>Plate for pulling bearing S-350</td>
<td>217-B</td>
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<tr>
<td>217-C</td>
<td>Plate for pulling bearing S-22-C</td>
<td>217-C</td>
</tr>
<tr>
<td>218</td>
<td>Puller bar with screw and handle</td>
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<td>219</td>
<td>Bolts 1/2&quot;x6&quot; used with bearing puller</td>
<td>219</td>
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<td>219-A</td>
<td>Bolts 3/4&quot;x83/4&quot; used with bearing puller</td>
<td>219-A</td>
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<tr>
<td>219-B</td>
<td>Bolts 3/4&quot;x15&quot; used with bearing puller</td>
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<td>Plug used when replacing bearing S-22-C</td>
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<td><strong>Drifts and Drivers</strong></td>
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<td>227</td>
<td>Drift for entering trunnion pin S-52</td>
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<td>Drift for entering radius rod pin S-56</td>
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<td>229</td>
<td>Drift for front axle bushing including 1.004&quot; ball bearing</td>
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<td>230</td>
<td>Driver for small time gear</td>
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<td>231</td>
<td>Drift for valve stem guide bushing</td>
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<td></td>
<td><strong>Rear Axle Equipment</strong></td>
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<td>232</td>
<td>Rear wheel puller</td>
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<td>233</td>
<td>Roller bearing sleeve puller</td>
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<td>234</td>
<td>Ring used when assembling or disassembling rear axle</td>
<td></td>
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<td></td>
<td><strong>Miscellaneous</strong></td>
<td></td>
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<tr>
<td>235</td>
<td>Electric drill 1/2&quot; capacity</td>
<td></td>
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<td>236</td>
<td>Electric drill drive for boring bars</td>
<td></td>
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<tr>
<td>236-A</td>
<td>Electric drill drive brace</td>
<td></td>
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<td>237</td>
<td>Connecting rod and piston aligning fixture</td>
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<td>238</td>
<td>Magneto gap gauge</td>
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<td>239</td>
<td>Valve timing gauge</td>
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<td>240</td>
<td>Piston ring squeezer</td>
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<td>241</td>
<td>Wedge blocks for front axle</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td>Vise 4½&quot;</td>
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</tr>
<tr>
<td>243</td>
<td>Copper hammer 1½ lbs.</td>
<td></td>
</tr>
<tr>
<td>243-A</td>
<td>Copper hammer 3 lbs.</td>
<td></td>
</tr>
<tr>
<td>244</td>
<td>Machine hammer 1½ lbs.</td>
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</tr>
<tr>
<td>245</td>
<td>8-lb. sledge hammer with handle</td>
<td></td>
</tr>
<tr>
<td>246</td>
<td>12&quot; mill file</td>
<td></td>
</tr>
<tr>
<td>246-A</td>
<td>12&quot; vixen type file</td>
<td></td>
</tr>
<tr>
<td>247</td>
<td>1&quot; cold chisel</td>
<td></td>
</tr>
<tr>
<td>248</td>
<td>Putty knife for cleaning carbon</td>
<td></td>
</tr>
<tr>
<td>249</td>
<td>12&quot; screwdriver, square shank, special</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>Connecting rod bending bar</td>
<td></td>
</tr>
<tr>
<td>251</td>
<td>Valve lifter</td>
<td></td>
</tr>
<tr>
<td>252</td>
<td>Set of drift punches (sizes 1/8&quot;, 1/4&quot; and 3/8&quot;)</td>
<td></td>
</tr>
<tr>
<td>253</td>
<td>Valve refacing machine complete</td>
<td></td>
</tr>
<tr>
<td>254</td>
<td>Set of taps and dies 1/4&quot; to 1&quot; S.A.E. and 1/4&quot; to 1&quot; U.S.S.</td>
<td></td>
</tr>
<tr>
<td>255</td>
<td>Coil unit tester (hand operated magneto type) less Ford parts</td>
<td></td>
</tr>
</tbody>
</table>

The following tools marked (*) are listed in either the Fordson Parts Price List or the Model T Parts Price List and dealers should have them in stock. Those not marked are distributed by Branches and will be included in later editions of the Parts Price Lists.

- 5Z-220 Speed screw driver
- 5Z-1531-D1 1/4" speed wrench, long
- 5Z-280 Valve grinder
- 5Z-1531-D2 5/8" speed wrench, long
- 5Z-1531-D3 3/8" speed wrench, medium
- 5Z-1531-D4 1/2" speed wrench, short
- 5Z-1531-D5 1/2" speed wrench, long
- 5Z-1531-D6 3/4" speed wrench, long
- 5Z-1531-D7 7/8" speed wrench, short
- 5Z-159 7/6" T wrench
- 5Z-1544 1/2" T wrench
- 5Z-232 Spindle arm bushing driver
- 5Z-160 3/8" T wrench
- 5Z-1539 L wrench special for carburetor hot plate
- 5Z-1080 5/8" L wrench
- 5Z-153 15/64" L wrench
- 5Z-1580 15/64" L wrench
- S-803 8" pliers
- S-804 9" Westcott wrench
- S-806 Spark plug wrench
- S-807 Open end wrench 1/8" and 1/4"
- S-808 5/16" L wrench
- S-809 Rear wheel wrench
- S-810 Rear wheel bar
- S-811 Front hub cap wrench
Air Pressure for 4.40/21 Balloon Tires

*Use 32 lbs. pressure in both front and rear tires on all models*

Fig. 384 represents tire life in miles at the recommended inflation pressure of 32 lbs. Figs. 385 and 386 show the loss in tire mileage due to under inflation.

- **Fig. 384**
  - No loss in tire mileage
  - 32 pounds pressure used.

- **Fig. 385**
  - 1/8 of mileage lost
  - 28 pounds pressure used.

- **Fig. 386**
  - 1/4 of mileage lost
  - 24 pounds pressure used.

To get satisfactory service from tires, instruct owners to check their tires regularly and keep them inflated to 32 lbs.

To prevent loss of pressure keep the valve cap turned down tight on the valve.
**Kingston Vaporizer Parts**

Owing to the limited demand for Kingston vaporizer parts, it is unnecessary for dealers who have sold only a few Kingston vaporizers, to stock the parts. A complete stock of Kingston vaporizer parts is carried at all Branches and dealers should order from the Branch as the parts are required.

 Dealers who have sold a considerable number of Kingston vaporizers should carry a complete vaporizer in stock and use parts of it for repairs. The parts so used can then be replaced by ordering from the Branch.

### Numbers and list prices of Kingston vaporizer parts

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>NAME</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-2265-SX</td>
<td>Manifold assembly</td>
<td>$3.00</td>
</tr>
<tr>
<td>T-2266-SX</td>
<td>Float chamber assembly</td>
<td>$2.75</td>
</tr>
<tr>
<td>T-2267-SX</td>
<td>Float chamber body</td>
<td>$1.00</td>
</tr>
<tr>
<td>T-2268-SX</td>
<td>Float assembly</td>
<td>.30</td>
</tr>
<tr>
<td></td>
<td>Float chamber cup (order 6152-B)</td>
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</tr>
<tr>
<td></td>
<td>Float chamber body nut (order 6165-B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Float chamber body nut gasket (order 6157-B)</td>
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</tr>
<tr>
<td></td>
<td>Drain valve body (order 6151)</td>
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</tr>
<tr>
<td></td>
<td>Drain valve body nut (order 6163)</td>
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<tr>
<td></td>
<td>Drain valve (order 6109)</td>
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<tr>
<td></td>
<td>Float valve seat (order 6172)</td>
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<td></td>
<td>Float valve seat gasket (order 6155)</td>
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<tr>
<td></td>
<td>Spray needle bushing (order 5-1232)</td>
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<tr>
<td></td>
<td>Float chamber gasket (order 6156)</td>
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</tr>
<tr>
<td></td>
<td>Gasoline valve (order 6169)</td>
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<td>Float lever pin (order 6166)</td>
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<tr>
<td>T-2270-SX</td>
<td>Spray needle assembly</td>
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<tr>
<td>T-2271-SX</td>
<td>Float chamber spacer</td>
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<tr>
<td>T-2272-SX</td>
<td>Float chamber spacer gasket</td>
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<td></td>
<td>Float chamber spacer to mixing chamber belt (order 6275)</td>
<td>.30</td>
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<td></td>
<td>Mixing chamber assembly</td>
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<td>Mixing chamber</td>
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<td></td>
<td>Mixing chamber to manifold nut (order 3014)</td>
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<tr>
<td>T-2275-SX</td>
<td>Air inlet silencer</td>
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<tr>
<td></td>
<td>Air inlet silencer screw (order 1070-X)</td>
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<tr>
<td>T-2276-SX</td>
<td>Throttle barrel assembly</td>
<td>1.00</td>
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<td>Throttle barrel to mixing chamber screw (order 3266)</td>
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<td></td>
<td>Throttle barrel to mixing chamber lock washer (order 5142-B)</td>
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<tr>
<td></td>
<td>Throttle lever adjusting screw (order S-1236)</td>
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<tr>
<td>T-2277-SX</td>
<td>Choke lever and rod assembly</td>
<td>.30</td>
</tr>
<tr>
<td>T-2278-SX</td>
<td>Choke plate</td>
<td>.05</td>
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<tr>
<td>T-2279-SX</td>
<td>Choke lever spring</td>
<td>.05</td>
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<td>T-2280-SX</td>
<td>Choke lever</td>
<td>.05</td>
</tr>
<tr>
<td>T-2281-SX</td>
<td>Low speed needle assembly</td>
<td>.15</td>
</tr>
<tr>
<td>T-2282-SX</td>
<td>Low speed needle spring</td>
<td>.05</td>
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<tr>
<td>T-2283-SX</td>
<td>Air intake switch valve</td>
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<tr>
<td>T-2285-SX</td>
<td>Mixing chamber to manifold gasket</td>
<td>.05</td>
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<tr>
<td>T-2286-SX</td>
<td>Throttle connection rod</td>
<td>.15</td>
</tr>
<tr>
<td>T-2287-SX</td>
<td>Throttle connection rod swivel</td>
<td>.15</td>
</tr>
</tbody>
</table>
CONFIDENCE BUILDS SALES
And it is the Foundation of Repeat Business

BUSINESS success is largely governed by public confidence—confidence founded on good products backed by satisfactory service.

This applies particularly to the automobile business. Thousands of car owners trade with certain dealers year after year because they have confidence in them—because they feel that somebody is taking a real interest in their cars and trying to give them lasting satisfaction.

Service is the greatest of all confidence builders. Not the "give it away for nothing" service but the kind of service that expresses a real desire to provide for your customer—to see that his needs are attended to promptly, courteously. To tell him in advance how much his repair labor bill will amount to before starting work on his car. To show him you are vitally interested in keeping down his operating costs.

Fifteen minutes of cheerful service, whether it be charged for or not, is worth more from the customer's standpoint than five hours of labor grudgingly given.
Are You Selling Service

Or are you merely supplying it—waiting for owners to come in and tell you what they want?

LIKE all present day selling, the selling of service is vastly different from what it used to be.

Today, you cannot succeed on only the business that comes to you unsolicited—you've got to go after the business. . . . Your service profits are measured by the effectiveness and energy put behind your selling efforts.

A recent check up in several Branch territories showed that every dealer using up-to-date service selling methods was operating at a profit. Just the reverse of this was found where dealers were making little or no effort.

Is your service earning money for you, or is lack of effort diverting your profits to competitors?

Here are some of the methods recommended by progressive dealers—methods that are proved money makers try them:

- Consistently advertise your service—your equipment, your goods.
- Arrange attractive window displays and change the grouping approximately once a week.
- Keep in主动 touch with your local owners; solicit their repair work, cultivate their friendship so that yours will be the place they think of when in need of service or supplies.
- Employ a wide-awake man to meet car owners coming into your shop—a man who takes real pleasure in serving is diplomatic and accepts personal responsibility for every customer's goodwill.
- Determine to get every Ford owner coming to you for everything necessary for his car or truck including gas, oil, tires, wash and polish, refinishing or complete reconditioning, and make a sincere effort to do all of these things to the owner's satisfaction.

There is an average of $10.00 per month per Ford owner on car maintenance in your community for you if you do these five things. There is 50% gross profit for you on your repair sales if you are operating on an efficient basis. Figure it out for yourself, the volume and profit figures are surprising.

Inspect the batteries on all cars coming into your shop for service, this often leads to the sale of a new battery, or at least a battery re-charge.

And, too, when installing a new battery in an owner's car always inspect the battery cable. Frequently where owners have neglected their batteries the old cable has become so badly corroded that its replacement is necessary.
Stepping Up Your Battery Sales

THE more salesmanship you put into a window display the more favorable attention it attracts—the more merchandise it can reasonably be expected to sell.

And it takes goods from underneath the counter—from off stockroom shelves and groups them into an attractive display that can be seen by everyone.

By means of newspaper ads and attention getting window displays, a Detroit Branch dealer in one of the smaller towns sold 105 batteries last month—five times as many as the previous month’s sales.

Fifty per cent of the Ford owners in YOUR community will purchase new batteries during the next few months—how much of this business will YOU get?

The first cold snap will soon be here—have you built up a good loaner battery stock?

Instead of ordering in lots of four or eight, why not order your batteries in lots of twelve or more and get the benefit of the quantity price? In addition to saving 40 cents net on each battery, you are in a position to meet the sudden demands which cold weather creates.
Improved Repair Order Form

Dealers report that the Service Repair Order Form shown in Fig. 389 has proved of considerable benefit to their service.

The improved form furnishes an accurate check on the many small details that cause customer dissatisfaction. In addition the back of the customer's copy (see Fig. 390) is a constant reminder of the advantages of authorized Ford service.

There are three copies to each set of forms: one for the office, one for the shop and one for the customer.

The size of the form is 8½" x 11". Here are some of its features:

- Cash on delivery reminder.
- Spaces for itemized statement.
- Inspection record.
- Reminder to clean steering wheel.
- Repair operation number.
- Customer's phone number.
- Complete record of car.
- Record of accessories and equipment sold.
- Record of parts installed.
- Record of labor.
- Facilitates distribution and posting of accounts.

Samples and literature describing the improved Repair Order will be sent upon request by the Sales Equipment Company, 201 Boydell Building, Detroit, Michigan.

![Fig. 389]

Our Chain of Service Offers You--

![Fig. 390]
Body and Fender Repairing
Can be Profitably Added to Your Regular Service

Bumping out fenders and bodies is a job that can be profitably added to your regular service. And it is a field that is not overcrowded and in which there is usually plenty of work.

Congested traffic, slippery streets, too much speed, careless drivers, all work together to build up a big volume of body and fender straightening.

The equipment required is not expensive and the work can be learned by any mechanic. K. R. Wilson, of Buffalo, N. Y., furnishes a handy set of body and fender straightening tools consisting of dolly blocks, bumping hammer, file holder and body and fender spoons, for $6.00 net.

Figs. 391 to 394 show the tools included in the set.

**Fig. 391**

**Nos. 1058 and 1059 dolly blocks**
Dolly blocks are placed back of the damaged section while tapping the outer section of the metal with a bumping hammer. The shape of the blocks make them adaptable for different type surfaces.

**Fig. 392**

**No. 160-G bumping hammer**
When using the bumping hammer always work from the outer edge of the damaged section toward the center.

**Fig. 393**

**Nos. 1054 and 1074 body spoons**
Used on either steel or aluminum bodies where a hammer could not be used on account of the body ribs being in the way. The point of the spoon reaches behind the rib and by working it up and down with an outward motion the dented section of metal is forced outward.

**Fig. 394**

**No. 1055 file holder**
Used with a curved tooth flexible file for filing off any high spots after bumping out a body or fender.
Installing Head Lamps on the Fordson

Here's a simple yet efficient method of installing headlamps on the Fordson (Fig. 395):

A non-starter cer switch with resistance is used to protect the headlamp bulbs against overload.

The switch is mounted in a metal box 6¼ inches wide by 4½ inches high by 3 inches deep and is equipped with a hinge cover (see Fig. 396) to keep moisture and dirt from the switch.

The box is fastened to the two lower fender iron bolts as shown in Fig. 397. If fenders are not attached, the box is mounted on the side of the dash in the same position.

The switch is mounted inside of the box by 2½-inch screws with bushings sufficiently long to hold the switch away from the back of the box. The lamps shown are the latest design and are mounted on a strap made of 1½ inch by ½ inch strap iron bent to conform to the shape of the top of the radiator and fastened in place by the tank support straps A and A, Figs. 398 and 399. The ends of the strap project 2½ inches or far enough out to support the lamps without undue vibration. We suggest mounting the latest type lamp as the older type lamp with the long arm is apt to vibrate, shortening the life of the bulbs. (The switch box and mounting strap can be easily made in your shop.)

A short piece of insulated wire is run from the switch terminal on the dash, see A, Fig. 397, to the magneto terminal on the back of the switch. The two upper wires of the dimmer resistance, which is fastened to the switch plate, are fastened to the dim and bright terminal on the back of the switch and the lower wire of dimmer resistance goes to the right head lamp, Figs. 397 and 398. The wire is held at a tension by two springs, part No. 2198-X and two Clips No. 2107-X, as shown at B, Figs. 397 and 398. The second wire, C, Fig. 398, passes under the tank and enters the lamp at C, Fig. 399. The wire, D, Fig. 399, is the ground wire, and is fastened under bolt E. 6-8 volt bulbs, part No. 6572-K, are used and should not burn out under average conditions. If, however, it is necessary to run the engine at a high speed in an emergency, the switch should be turned to the dimmer side.
Improved Fordson Service Equipment

Adjusting the cylinder boring bar cutter

**Fig. 400**

One of the most important operations in reboring cylinders is the proper setting of the boring bar cutter.

To rebore a Fordson cylinder block, the cutter in the boring bar is adjusted so that it will bore the cylinder .004" larger than the actual diameter of the piston to be installed. (Micrometers must be used to measure the exact diameter of the pistons, see Fig. 400). The additional .004" is to allow for clearance.

For example, suppose we find that it is necessary to install .037" oversize pistons. A standard Fordson piston is 3.995" in diameter. A .037" oversize piston is 4.032" in diameter. To this measurement we would then add .004" for clearance which would, using the mean diameter, give us 4.037" and which would be the correct size to bore the cylinder.

The next operation is to set the boring bar cutter to cut to 4.037".

The diameter of the boring bar head from which the cutter extends, measures 3.500". To determine how far out the cutter must extend from the head to cut to 4.037", we must first deduct the diameter of the cutter head (3.500") from our reboring size of 4.037", this leaves .537". We then divide this measurement by two, which gives us .2685" and which is the distance the cutter must extend from the boring bar head to rebore to 4.037".

The reason for setting the cutter to .2685" instead of .537" is due to the fact that the cutter extends only from one side of the boring bar head, but as it cuts all the way around the circle it actually doubles this measurement, so that by setting it to .2685" it actually cuts .537" and when the diameter of the boring...
bar is added to this measurement the cutter will rebore the cylinder to exactly 4.037".

To set the cutter, first adjust the micrometer to the required measurement, which in this instance would be 3.7085" (the diameter of the boring bar head, 3.500" plus the distance which the cutter must extend from the head .2085")

Next slightly loosen the two set screws in the cutter head with the special set screw wrench (see Fig. 401).

Then place the micrometers over the cutter head and cutter as shown in Fig. 402 and adjust the cutter by turning the adjusting screw with a screw driver until the setting corresponds with the reading on the micrometer (see Fig. 402).

When the correct adjustment is obtained tighten the set screws and AGAIN check the cutter with the micrometers to make sure that the adjustment was not altered when the set screws were tightened.
FORD batteries are far above the ordinary low priced battery in quality of materials, excellence of construction, and consistency in performance.

Notwithstanding the high quality of the Ford battery, investigation shows that battery life is frequently shortened because owners fail to realize the value of systematic care, and do not recognize their responsibility in seeing that their battery is inspected regularly and that the generator charging rate is adjusted to their individual requirements.

The importance of battery care cannot be overestimated. No matter how efficient your sales methods or what qualities your battery has, only through satisfactory service and owner education can you build a bigger volume of repeat business.

STUDY THE FOLLOWING PAGES—EXPLAIN THE IMPORTANCE OF SYSTEMATIC CARE TO CUSTOMERS AND INCREASE THEIR SATISFACTION IN THE FORD BATTERY
When installing a battery, never apply force in drawing down the battery clamps. They should be tightened only sufficiently to hold the battery in place. If the clamps are drawn down too tightly there is a possibility of springing the battery case and allowing the electrolyte to leak out. Note slight opening in sealing compound alongside of rubber case. See Fig. 403.

**Keep Battery Fully Charged in Cold Weather**

There is always a heavy drain on a battery in cold weather, on account of the lower charging rate because of slower driving, congealed oil, greater use of the lighting system, etc. The strain put upon the motor during cold weather calls for a fully charged battery to turn the starter.

When the operator steps on the starter switch, a direct flow of electricity from the battery to the starter takes place. The battery is accordingly being discharged and a certain chemical action is taking place within. Repeated discharging affects the negative plates in a battery by causing the lead to expand and bulge out between the ribs of the grid as shown in Fig. 404. When a battery is badly run down the plates become sulphated. The acid in the electrolyte combines with the lead of the porous part of the negative plate called the active material with a result that a
compound known as lead sulphate is formed. The electrolyte becomes weaker as the discharge progresses due to the absorption of the acid by the plates. The lead sulphate continues to increase in quantity until the pores of the plate are entirely filled, causing it to expand and break off from the plate. To convert the sulphate to active material the battery should be charged at a rate not exceeding five amperes.

In this connection, too much stress cannot be placed upon the fact that re-charging a badly sulphated battery at a high charging rate causes overheating. This results in buckling which often short circuits the cells. Before re-charging a battery, check the cells to determine whether they are shorted. If a cell is shorted the battery will have to be dismantled and new parts installed.

Owners are often attracted by advertisements stating that their batteries can be re-charged in from 6 to 8 hours. Batteries are frequently damaged by charging at too high a rate. To re-charge a run-down battery in this length of time it is necessary to charge it at a 20 to 30 ampere charging rate. This excessive rate increases the temperature of the battery to such an extent that it causes the plates to expand, and as this expansion is unequal in different parts of the plates, buckling results and trouble frequently develops. Buckling is the bending or twisting of the plates. See Fig. 405.

It is for this reason that extreme care must be used when re-charging batteries with a constant potential outfit. To avoid damaging the batteries, it is essential that the temperatures of the batteries be frequently checked when they are drawing a heavy charging current. A battery which gases soon after it is put on charge and while still in a discharged condition should be taken off the line immediately, or the charging line voltage reduced. With constant potential charging, the two things to watch carefully are temperature and gassing. Any charging rate which does not cause an excessive temperature or early gassing is safe, and conversely any that does raise the temperature above 100 degrees or causes gassing while the battery is still less than three-fourths charged, is too high.

**Causes of Plates Buckling**

Buckling of the plates is caused by one of two things—either excessive charging rate on bench or in the car or battery has been allowed to remain undercharged too long. When the expansion or twisting of the plates has loosened a considerable amount of the active material or caused it to break away from the grid, the capacity of the battery is cut down. See Fig. 406. A more serious trouble which arises from buckling is caused by the plates pressing against the separators with sufficient force to cut through the separators and

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**Fig. 404**

*Negative Plates Over-Discharged*
come in contact with the next plate, thus short circuiting the cell. See Fig. 407.

Overcharging is a frequent cause of battery troubles. When installing a new or re-charged battery in an owner's car or truck, bear in mind that the battery is fully charged, and if the car or truck is driven on long trips at a high charging rate, the battery becomes over-charged. This causes excessive shedding and buckled plates which not only reduces the capacity of the battery but often cuts through the separators and short circuits the cells. For average driving conditions a generator charging rate of from 10 to 12 amperes has been found most satisfactory. When unusual conditions are encountered this rate should of course be changed. For example, the owner who frequently makes long trips during the day, especially in the summertime, or the commercial user whose truck is in constant operation. These are cases where the charging rate should not exceed 5 amperes. The best plan is to find out under what conditions the owner operates his car or truck, that is, the average length of the trips taken. Then adjust the generator charging rate to meet his requirements. When adjusting the charging rate, the season of the year should, of course, be considered, as naturally the battery is subjected to a heavier drain in cold weather than in summer.

Plates Must Be Covered With Electrolyte

If the electrolyte in the battery is allowed to fall below the level of the plates, the part of the plate which is exposed becomes dry and hard, so that the active material cannot be converted back for future use. See Figs. 408, 409 and 410. Batteries in which the electrolyte is allowed to fall below the tops of the plates, deteriorate rapidly and their life is short.

**Cracked Separators**

The quality of separators used has a direct bearing on the efficiency of a battery. If separators are in good condition a short circuit is unlikely to occur.

Only the highest grade Ford Orford Cedar separator is used in the construction of the Ford battery. Considerable time and materials are expended in the treatment of our separators for the purpose of washing out all Acetic Acid. In all 28½ hours are consumed in this treatment which is considerably more than that given other separators.

Notwithstanding this fact we have noticed quite a few complaints on damaged and cracked separators. Investigation shows this condition is the result of rough handling rather than defective stock shipped from the factory.

In Fig. 411 we show a separator which has a small crack extending down the groove about one inch. While it would be advisable, when repairing a battery to replace all such separators, we know from tests that separator cracks do not give trouble unless they are sufficiently wide to permit particles of active material from the plate to drop down into them and bridge across the positive and negative plate, shortening the cell.

**Keep the Battery Dry and Clean**

It is important that the top of the battery be kept free of dirt and moisture. Dirt may work into the cells and damage the battery. Moisture causes a leakage of current between the terminals of the cells and tends to discharge the battery. Moisture on the battery should be promptly removed and the
tops of the cell connectors and terminals wiped off with a cloth moistened with a solution of baking soda. This will neutralize any acid that may be present in the moisture.

**Coat Battery Terminals With Vaseline**

Giving the battery terminals a coating of vaseline protects them from being attacked by acid. If any corrosion has formed around the battery terminals, it should immediately be removed and the parts thoroughly washed with a solution of hot water and baking soda. The terminals should then be given a coating of vaseline. Acid on top of the battery is usually caused by filling the cells too full. Sometimes it is spilled when hydrometer readings are taken. Loose vent caps will cause electrolyte to be spilled when the hold down clamps have not been tightened sufficiently to hold the battery firmly in place.

**Handle Battery Carefully**

Rough handling by careless or inexperienced persons is one of the most common causes of battery trouble. For example, when installing a battery in a car, instead of lowering it all the way down into the battery bracket, many persons allow it to drop into place, or resting one end of a battery on the floor and letting the other end drop. To avoid damaging the parts, batteries must be handled gently.

**Do Not Use a Chisel to Remove the Battery Connections**

It cannot be too strongly emphasized that any blow being struck the binding or terminal posts of a battery, either when taking battery apart or removing the terminal, is bad practice and should be discouraged. Such action invariably results in springing of the battery post as much as a quarter of an inch and loosening of the active material.

Time as well as money are saved if the connectors are removed by taking a 3/4 inch drill and boring the connectors 1/4 inch deep centrally over each post, until you cut through the part of the connector which is welded to the post. Then pry off the connector with a screw-driver. Put a chisel or file on the top edge of the case to avoid damaging the case when prying off the connectors. If any connector is still tight and you cannot pry it off with a reasonable effort, drill down a little deeper, and it will come off easily, provided that the hole which you are drilling is exactly over the center of the post and as large as the post.

Another method is to play a burning flame on the joint at the same time pull...
ing the connector with a pair of pliers until it comes loose.

When using a burning flame caution should be taken to withdraw some of the solution if cells are full. This will allow gas to escape from cells and prevent an explosion.

**Rebuilding the Battery**

When rebuilding the battery the repairman should follow some definite lines of procedure to diagnose battery troubles correctly and swiftly. It will take time to learn how to discriminate between parts that are to be used over again and those which should be discarded as junk. However, persistency and perseverance will soon cultivate the habit of asking questions and learning more about battery failures. This, coupled with an earnest desire to eliminate careless and slip-shod methods of procedure which only tend to offer encouragement to your competitor and take away business which rightfully belongs to you will unquestionably increase your revenue from this source of business many times over. The work must be divided along certain definite channels of battery knowledge and followed in a sequence. Each step must be performed thoughtfully and in the same order each time. The repairman should firmly fix in his mind that there is a reason for every battery failure and endeavor to locate the trouble and if possible remedy it. He can add considerable to his knowledge about batteries if he asks himself certain questions such as these:

What put this battery in this condition? Why do the negative plates assume a "grainy" appearance? Why are the positive plates buckled? What caused the positive plates to disintegrate? Who is to blame, the manufacturers of the battery or the owner of the car? Why did the battery have to be taken off the car, opened up and rebuilt at 5 months old, when the battery taken off a car just the day before had been on for 20 months and never been charged off the car but once? There is a reason. Locate the cause of the trouble, if possible, and remove cause. Explain causes for battery failure and avoid dissatisfied customers.

In the foregoing columns we have given illustrations of all vital points of battery care and abuse and if reasonable amount of careful study be given this information, it can have only one effect and that is to better assist you in the handling of battery service and still further increase the possibilities of securing more of the ever growing sales potentialities of the battery business. Therefore, to further assist your repairman to do better and more work along this line, we are outlining herein the standard procedure of repairs as they are conducted in the battery room of the Ford Motor Company.

Hydrometer readings are taken to measure the specific gravity of the electrolyte. If all cells read 1.150 or less
remove the battery and give it a bench charge. If the specific gravity readings are all above 1.200 or if the gravity reading of one cell is 50 points lower or higher than the others, this may indicate either that the internal condition of the battery is bad or the electrolyte may need adjusting.

The difference in specific gravity readings in the cell is due to one of the following causes:

(a) Water added to cell or cells which have low gravity to replace electrolyte which had been spilled or lost in some other manner.

(b) Electrolyte added to the cell or cells which have high gravity to replace the water which naturally evaporates from the electrolyte.

(c) Trouble inside the cell or cells which have low gravity.

Having been satisfied that trouble is of an internal nature we proceed as follows:

Drill off cell connectors.
Remove sealing nuts.
Remove sealing compound. Best results can be obtained by use of a 1/2 inch wood chisel which may be heated for the purpose of removing all compound more easily.
Remove cell covers.
Take out elements as follows: Pull up and rest elements angle-wise on top of battery case to allow all acid to drain before disassembling.
Remove separators.
Give element careful inspection for run-down from plate strap and other causes for shorts.
Examine interior of cell for excess sediment.
Clean sediment cavity thoroughly.
Clean all parts to be used over again.
Rebuild battery as follows:

Assemble negative and positive groups.

Place groups on side and insert separators. When inserting separators be sure and place smooth side against negative plate.

Element is complete and ready for installation. Before placing element in cells see that Ford Script on battery box is toward the repairman. Always place element with positive terminal post over letter "D" on script.

Check all posts for rubber gaskets.

Put on cell covers.

Put on sealing nuts.

Before resealing covers, see that they are thoroughly dried by running a light flame where battery is to be sealed. The object for this is—to insure a perfect sealing job. The compound will not seal tight where there is moisture.

To further insure a perfect seal, the double sealing method should be used. Run a light layer of compound around covers. Heat compound with a light flame to insure a tight seal at bottom of cover. Allow to settle for two minutes; then refill with compound to top of cover. Apply light flame over compound for final seal.

Replace all cell connectors. Care should be used to see that script on cell connector is towards the script on box.

The operation of burning on cell connectors is of utmost importance and too much stress cannot be laid upon the fact that a perfect contact must be made with post and connector. This can be accomplished by using a small hot flame at contact points. After perfect contact has been secured fill up with lead to normal height.

Re-acid and charge battery at normal rate which is 5 to 6 amperes. At this point caution must be taken providing a cell has had a positive group and separator renewed, as it is advisable to add acid about 20 points higher in gravity than the acid taken out of cell.

After 48 hours check gravity of solution which should be about 1.275. If not adjust and continue charge 10 hours longer to determine whether gravity will rise. If there is no change in gravity adjust to 1.285, which is the normal gravity reading.