

The
Super Elto
"Starts with a quarter turn"

Service Manual

- For Models J & K -

Operating Directions
Care of Motor



Parts and Accessories

How To Get The Most from Your
Elto

ELTO OUTBOARD MOTOR CO.

OLE EVINRUDE, President
MILWAUKEE, WIS., U. S. A.

How to get the most from your *Elto*

The
Super Elto
Starts with a quarter turn

Service Manual

For Models J and K

Operating Directions

Care of Motor

Parts and Accessories



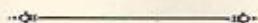
ELTO OUTBOARD MOTOR COMPANY

OLE EVINRUDE, President

MILWAUKEE, WISCONSIN, U. S. A.

Table of Contents

	Page
Your Super ELTO.....	3
Guarantee	4
General Operating Directions	5
Cautions	9
Further Information on the Operations of the Motor..	10
Possible Troubles	11
Care of Motor.....	14
Our Service Department.....	16
Complete List of Parts and Accessories.....	17



With every Super Elto is packed the following equipment:

- 1 Battery (Columbia Hot-Shot)
- 3 Spark Plugs
- 1 Large Wrench for Spark Plug, Bracket Nut and Propeller Nut
- 1 Medium Wrench for Water Pipes and Dirt Strainer Plug
- 1 Small Wrench for Gas Feed Line and Cylinder Screws
- 1 Screw Driver
- 1 Envelope containing 3 Brass Propeller Shaft Collar Pins and 1 Propeller Nut Cotter Pin
- 1 Combination Battery Carrier and Tool Kit
- 1 Super Elto Service Manual
- 1 Oil Measuring Cup (Capacity one-third pint)

YOUR SUPER ELTO

¶ Your Elto is a finely synchronized, perfectly made, expertly designed, sturdily built mechanism.

¶ Each individual part of your Elto was painstakingly inspected by workmen "who care" before your motor was made.

¶ After its completion your Super Elto was tested thoroughly. It was operated under load, and was found to be perfect.

¶ Then your Elto was carefully packed in a specially constructed shipping case of more than adequate strength, and shipped.

¶ Your Elto is not delicate. It is tough, strong and sturdy. Yet it is deserving of proper care, and, like any friend, will respond to good treatment.

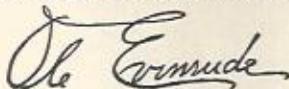
The Super Elto Guarantee

For ONE FULL YEAR from the date upon which the Elto is purchased, we guarantee to replace free of charge any part or parts which may appear defective either in material or workmanship providing the owner, within fifteen days from date of purchase, has filed with us the registration card furnished with the motor. Under this guarantee the owner is expected to return to the factory, transportation charges prepaid, any part or parts which he considers defective. If the part or parts, upon inspection, are found to be faulty, either in workmanship or material, they will be replaced free of all charges with return transportation prepaid by us.

We will interpret this guarantee liberally, for it is our earnest desire that every Elto owner receive complete satisfaction from his motor.

This guarantee is automatically voided when any change is made in the motor, such as decreasing the weight of any part or the substitution of parts not of our manufacture, or when any special fuel or combination of fuels is used, other than the grades of gasoline in common commercial distribution.

ELTO OUTBOARD MOTOR CO.


PRESIDENT

General Operating Directions

(All references in these instructions as to left and right positions are based on the assumption that operator is facing front [carburetor side] of motor).

SPARK PLUGS—Remove the corks from both cylinders and screw spark plugs into place, making sure that a copper gasket is in place with each plug to avoid loss of compression. Be sure to tighten securely.

SPARK PLUG HOODS—Connect securely the secondary wire terminals to spark plugs. Then slip rubber hoods over terminals. These hoods are not intended to act as a waterproof covering, but are only to prevent shocks from the spark plug. In salt water use, it is best to remove these hoods entirely to prevent shorting.

FUEL AND LUBRICATION—The gas tank holds one full gallon, enough for nearly two hours' running at full speed.

An aluminum oil measuring cup is included with the motor equipment. This cup holds one-third pint. Mix gasoline (HIGH TEST if possible) and high grade MEDIUM body automobile engine oil in the following proportion: 1 measuring cup of oil to each gallon of gasoline. Shake thoroughly in a separate can and pour through a fine strainer when filling ELTO tank. Never run motor without proper amount of oil thoroughly mixed with gasoline, for this will seriously damage engine. Our Guarantee will not cover injury to motor caused by lack of oil.

UNFOLD RUDDER—To unlock rudder, raise tiller yoke (part to which steering ropes are attached) and swing rudder. Then turn flywheel until propeller is vertical. Rudder will then clear propeller and can be snapped into place.

When again folding rudder, remember that it folds only to the right.

BRACKET ADJUSTMENT—After motor has been placed over the stern and set at a true center position, tighten up the two thumb screws by hand (NO NOT USE A WRENCH).

To adjust motor to proper angle, first swing motor to vertical position and then adjust screw "B", which will hold motor in this position.

Nut "A" controls the tension of the friction discs and should be drawn up securely to keep motor tilted out of water when not in use or when beaching the boat.

ARRANGE TILLER ROPES—A 12 ft. length of steering rope, equipped with snaps, is supplied as regular equipment. These snaps are to be fastened to the eyelets on the motor ropes.

If desired, the boat can be equipped with special pulleys and a small steering wheel and other boat equipment can be added. You will find these accessories listed in the rear of this book.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Front View of Elto Motor

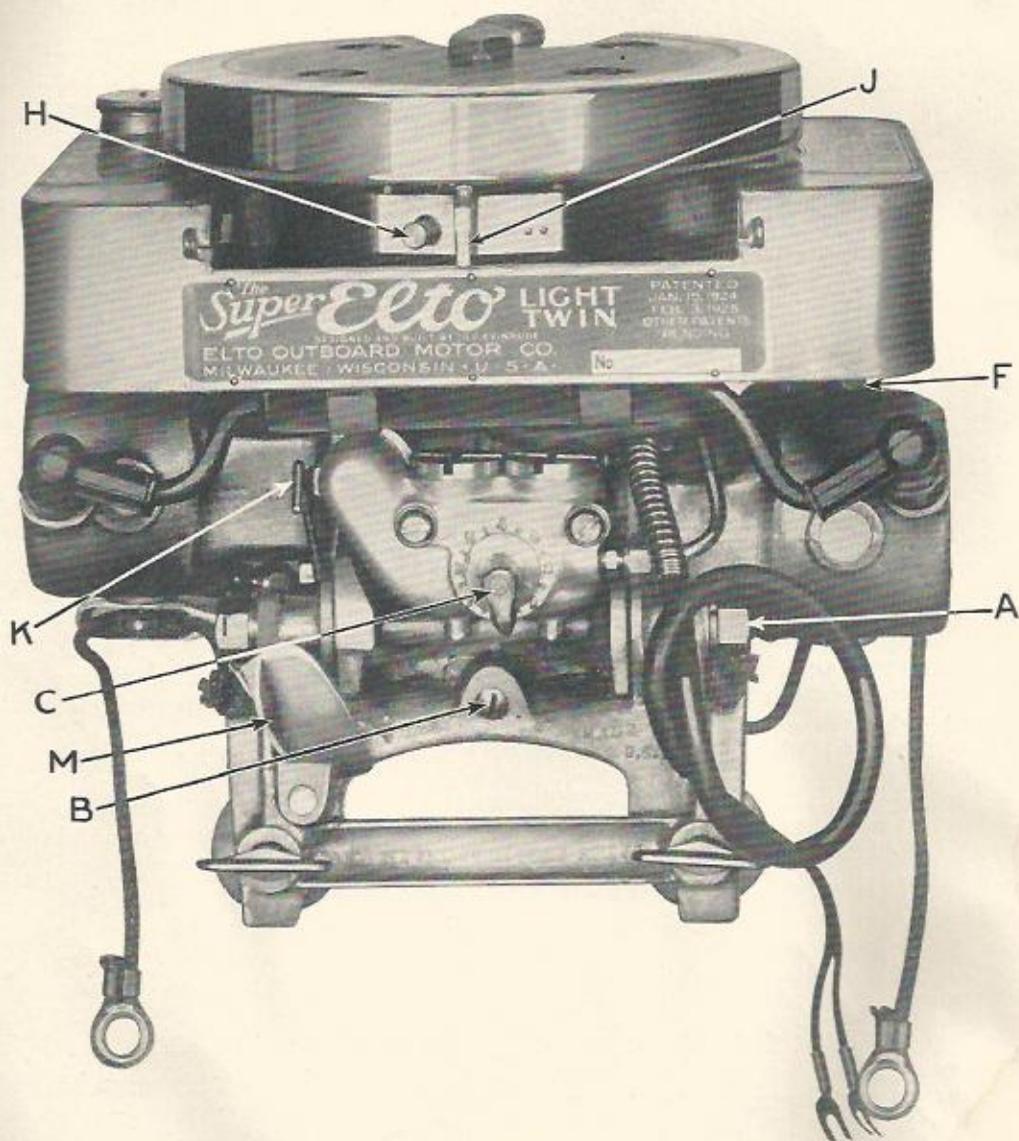


Fig. 36

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

TIMER SPEED CONTROL—There is a small hole in the timer handle in which a small cord or wire may be fastened. The ends of the cord may then be passed through the small eyelets on the gas tank. This will permit stopping and will furnish speed control from any part of the boat. To stop motor, pull the cord; this will draw the timer lever to the extreme left, where the timer button will engage with the automatic stop.

CONNECT BATTERY—Attach the two coil wire terminals to the spring terminals on the battery binding posts. These connections can be made on either the "Positive" or the "Negative" posts of the battery and are interchangeable. When disconnecting wires from battery, take hold of the terminal; do not pull on the battery wires, as this in time is apt to loosen the soldered connections. The battery can be hung on the thumb screws with the snaps or laid on the bottom of the boat.

SET TIMER LEVER—"J" to a position just left of center (as illustrated in Figure 37). If motor does not start promptly on the first or second bump of wheel against compression, advance timer more towards center.

OPEN AIR INTAKE in gas tank cap by turning screw out as far as it will go.

OPEN CUT OUT by pulling up on rod "K". This affords the proper exhaust relief for starting. After motor gets under way the cut out can be closed.

CARBURETOR—The gasoline needle valve "C" should be closed completely. Turning the indicator to the right or clockwise closes the valve, and to the left or counter clockwise opens the valve. When the valve is closed the indicator will be on Figure "O". Then open the needle valve from 1 to 1½ full turns, varying according to gasoline used, weather and atmospheric condition. Raise the check valve stems at the bottom of carburetor until the gasoline runs down. Place flywheel handle to rear as indicated on Figure 38 and rock flywheel back and forth a number of times between compression points "A" and "B", as illustrated. Then rapidly bump flywheel against compression "A", letting go of the flywheel handle the same instant. This movement of starting should be a quick snap and not a slow pull. Flywheel will take the retarded spark and run clockwise or to the right for forward. It is never necessary to crank motor over compression "B".

When motor starts gradually advance timer handle "J" to right and close down needle valve "C" to the best running point, which is generally between Nos. 5 and 3 on the dial.

SPEED ADJUSTMENT—To obtain full speed, advance timer lever to RIGHT but not to the limit if motor pounds and slows down.

When operating motor at full speed with timer fully advanced, gasoline can be cut down on valve "C" as motor will give better results on a lean mixture. However, when wishing to run at low speed for a considerable length of time, it is best to open valve "C" slightly to give motor a richer mixture.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

TO STOP MOTOR—The handiest way is to quickly retard the timer to the extreme LEFT where the button "H" will engage the automatic stop. The motor can also be stopped, regardless of timer position, by **PRESSING AND HOLDING DOWN** stop button.

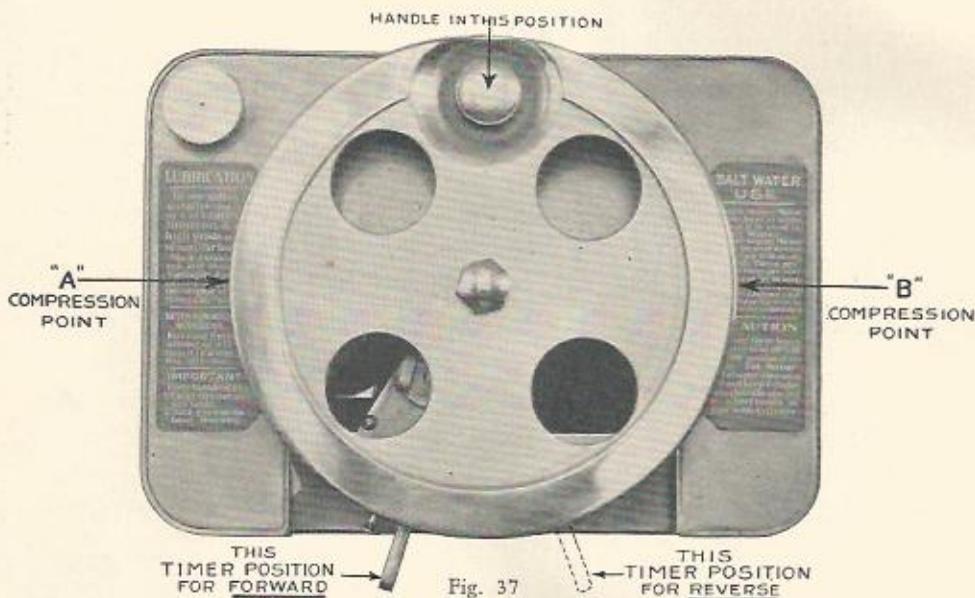


Fig. 37

When again starting motor it is necessary to move timer to its proper starting position.

TO REVERSE MOTOR—Move tilting latch "M" on bracket to the RIGHT and hold in this position. Set timer lever RIGHT of center as indicated on Figure 37, then bump flywheel rapidly to RIGHT against compression "B" as shown on Figure 38. The latch is automatically held in position as long as the motor continues to operate in reverse.

Motor can also be reversed when in operation by first moving tilting latch to RIGHT and then pressing down stop button and quickly releasing it, with timer in a position RIGHT of center. To automatically start forward when in reverse move timer to a position LEFT of center, press and quickly release button.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

With a little practice the operator will become expert in going from forward to reverse and vice versa in this easy manner.

ALWAYS SEE THAT TILTING LATCH IS ENGAGED WHEN REVERSING MOTOR, AND DISENGAGED WHEN RUNNING FORWARD.

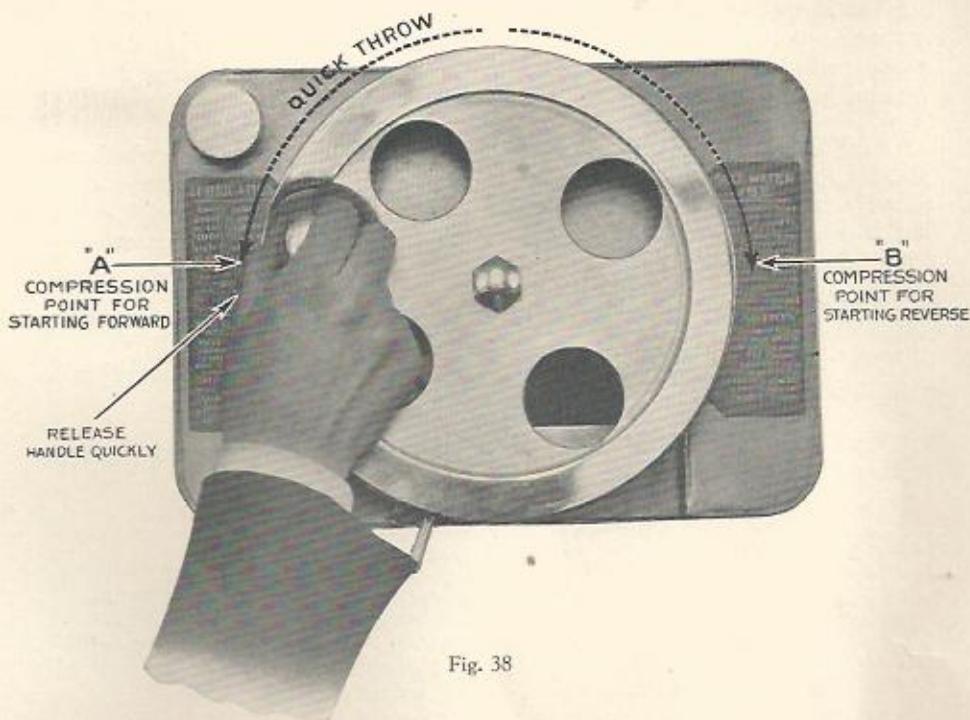


Fig. 38

Cautions

FRICITION ADJUSTMENT—Have friction nuts "A" fairly tight so that when motor is tilted it will not drop back into place and cause damage.

COOLING SYSTEM—Always see that the water circulates properly. If water does not flow from both outlets look for obstructions at the intake. When the timer is retarded to the fullest extent the motor may run so slowly at times that the pump will not work properly. In this event increase the speed of the engine until water again circulates.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

It is also of importance that both of the rudder intakes are submerged when the boat is under way.

The Propello-Pump is self-draining. However, it takes a few seconds for it to drain completely. It is therefore important not to tilt the motor too quickly when stopping it, especially in cold weather. **LET IT DRAIN FIRST.** This will avoid freezing of cylinder jackets.

The Propello-Pump system does not function when the motor is running in a reverse direction, but this is of no consequence, as the motor is absolutely guaranteed to function for any reasonable length of time in the reverse direction without harm.

FLYWHEEL NUT—If motor pounds, it is well to determine whether or not the flywheel nut is drawn down tightly. This nut must be drawn down securely at all times with a wrench and hammer. If it becomes loose, it will be but a short time before the keyway in the crankshaft is severely damaged or flywheel hub cracked.

FUEL—Never run motor without lubricating oil mixed with the gasoline.

DO NOT pour lubricating oil into Gasoline Tank. Mix it thoroughly in a **SEPARATE CAN** with the gasoline.

NEVER REFILL TANK immediately after stopping motor; allow muffler to cool for a few minutes.

Further Information on the Operation of the Motor

TIMER LEVER FRICTION—Should the timer become so loose that it will not remain in a set position, it can be tightened by moving it to the extreme right side and drawing up set screw located where the timer is fastened to the motor.

MOTOR COUGHING OR STOPPING AT LOW SPEED—Should motor cough or sputter at low speed, increase the gasoline mixture by opening the needle valve a quarter turn or more, however, when the timer is again advanced, close the needle valve to the normal running point for high speed.

MIXTURE TOO LEAN OR TOO RICH—Do not run the motor with too lean a mixture. Too lean a mixture causes excessive heat in the muffler, whereas too rich a mixture causes carbon accumulation and fouled plugs. Find the best running point and hold this point for best performance.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Safety Cushion Drive

The propeller and also the various gears and shafts are protected by the Safety Cushion Drive. This consists of a driving collar and cushion spring in the propeller wheel. This cushion spring is a heavy coil spring, one end of which enters a hole in the hub of the propeller wheel, the other end entering the collar. The driving collar is fastened to the propeller shaft with a brass pin.

When striking an obstruction the spring tightens, relieving the shock, thus producing the cushion effect.

There is very little chance of the cushion spring breaking, as the weakest point is the drive pin passing through the collar and shaft. Should either the pin or spring become broken by too great a shock, this would be evidenced by motor speeding up and boat stopping. To replace the brass drive pin it is, of course, necessary to first remove the cotter and propeller nut. The wheel can then readily be slipped off of the shaft together with the cushion spring. It is then well to force the driving collar off of the shaft with a screw driver. The sheared portions of the brass pin can then be driven out of the collar and shaft and a new pin installed.

APPLYING THE POWER PROPERLY — The importance of properly mounting your motor on the boat must not be overlooked. In order to obtain full propeller efficiency, if the motor is mounted on a round bottom boat, the top of the propeller should be even with the bottom of the keel or a trifle lower, if mounted on a flat bottom boat the top of the propeller should be at least six inches below the bottom of the boat.

Trolling Speed

Generally, a satisfactory trolling speed can be obtained with the ELTO Motor by retarding the spark lever. There are certain kinds of trolling, however, which require still slower boat speeds. We furnish a trolling attachment for this purpose. The price of this troll guide is listed in the rear of this book under Accessories.

Possible Troubles

CARBURETION—If motor does not start after following operating directions check as follows:

See that air intake in filler cap is open, that tank is filled with gas, and that dirt strainer under tank is clean.

If all these items are O. K. check to see that needle valve "C" is open sufficiently for starting. Then raise check valves under carburetor, let the gas drip from check valves a few seconds to be sure it flows freely.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

FLOODED MOTOR—If, after considerable cranking, motor still does not start, it is probably flooded. The next step to take is to close the needle valve "C" completely, rock the flywheel a number of times and bump it quickly against compression. If motor has been flooded it should start after a few bumps burning the superfluous gas. The needle valve "C" should then be again opened for starting.

Ignition Troubles and How to Locate Them

DIRTY SPARK PLUGS—If gasoline is found to be flowing freely and motor still does not start, the spark is evidently at fault.

HOW TO TEST SPARK—To determine whether motor is getting the proper spark, remove both spark plugs, examine plugs to see that the porcelains are intact and not broken. Then check gap at spark plug points. This should be about 1/32 of an inch. Also see that spark plugs are clean. Connect wires to battery terminal posts and then ground one of the spark plug terminals to any metal part of the motor, and hold the other wire about one-fourth inch away from the cylinder, turning the flywheel around slowly. This action should produce a spark at every revolution. If no spark whatever is apparent, it is due to one of the following causes: Weak or damaged batteries, defective timer or defective coil, or possibly a loose terminal on the battery wire.

WEAK OR DAMAGED BATTERY—The spark should jump at least one-quarter inch from wire terminal to cylinder when testing spark according to directions in the foregoing paragraph. A spark measuring less than this is a proof of a weak battery.

The battery can be tested with an ammeter or by shorting the terminals with a wire or a piece of metal. When fully charged the battery will register about thirty amperes and if it registers under fifteen amperes it is well to try a new battery. If the battery tests O. K., it is well to check the wires for breaks leading from the battery to the coil, and from the coil to the timer.

BATTERY RUNNING DOWN—If the gap between the contact points in the timer should become clogged in any manner, this would result in the battery running down in a very short period of time. It is then necessary to adjust the timer points by following the information given below:

DEFECTIVE TIMER—The timer mechanism consists of the well known Atwater Kent Unisparker. Its initial adjustment made at the factory should be good for several seasons of ordinary use.

The lifter in the timer mechanism trips at every revolution of the flywheel, giving a sharp "click" or "snap." To determine if timer is in perfect condition turn the flywheel by hand and if this sharp "click" is not heard it is a clear indication that the timer needs repairing. If no Service or Repair Shop familiar with the Atwater Kent ignition is available, take off the complete timer box after

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

removing flywheel as follows: First remove the nut and place a block of hard wood or brass on the end of the shaft. Hit the block a fairly good blow with a hammer, lifting up on the flywheel at the same time. In taking off the wheel be careful not to lose the key, which is apt to drop out. Send complete timer and coil back to us for repair. Tampering with this type of ignition by mechanics not familiar with it and its extremely fine adjustment is apt to ruin it entirely, and we advise the user to avoid this source of additional trouble and expense and return the timer to us. When returning the timer it is also well to return the coil so that both parts can be adjusted and tested out together.

Water may occasionally get into the timer and corrode or rust the points. The timer points are extremely delicate, therefore requiring very careful adjustment. We again caution the user against having the adjustment made anywhere but at a recognized Atwater Kent Service Station or a Repair Shop familiar with this system of ignition.

ADJUSTMENT OF TIMER POINTS—When it becomes necessary to take up the distance between these points due to natural wear, remove timer. Also remove eccentric strap and timer cover, and then the contact spring, and with a new fine file dress down the high spots. Remove shim washers from under the contact screw head until the gap between the points is correct, or .009" to .010", never closer.

DEFECTIVE COIL—To test the coil, after first determining that battery, timer and spark plugs are in good condition, connect the terminals to the battery binding posts. Then after removing the timer cover, the primary circuit of the coil can be "shorted" or closed by taking a small piece of wire and touching the two binding posts to which the coil wires are attached within the timer. By holding the wire on one of these connections and quickly touching the other connection for a second, a spark one-fourth inch or better should be produced at the secondary or spark plug terminals.

This is a positive manner of determining whether the difficulty is due to a defective coil or whether it is due to a defective timer. If no spark is produced in this manner, it is then evident that the trouble is in the coil, as the "shorting" at these points has the same effect as the contact produced by the timer points when motor is running. If a spark is produced, the trouble is evidently in the timer.

Do not attempt to substitute any other make of coil for that furnished with the motor, as this coil has been especially designed for the ELTO.

Do not attempt to take the coil apart, as it is securely sealed and is also completely filled with an insulator. When returning the coil to be repaired or tested, it is also well to send the timer, so that both can be adjusted and tested together.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Care of Motor

GEARS—It is important to give attention to the propeller gears which are located in the lower housing. These should be packed with cup or soft grease at least every two hundred miles. In cases where the motor is in constant use in exceptionally sandy water, such as is encountered in some rivers, it is best to pack the gears with grease more often.

The grease is to be supplied to the gear housing by removing the small plug over which is stamped in the casting the word "grease." The use of a grease gun is necessary to force grease through this opening. This grease plug opening is known as a 1/8" pipe thread. A standard grease gun or gun fitting can be purchased suitable for that size thread if desired. (See accessories.)

TIMER—Although the timer needs no special attention, it is well to oil the eccentric strap at the point where it runs on the flywheel hub eccentric, especially when the motor is new and is being "run in."

The oil that is mixed with the gasoline is forced up through the main crankshaft bearing by the crankcase compression. This lubricates through a drilled hole in the eccentric strap, down to the rocker shaft and also into the timer mechanism. The appearance of oil on the rocker shaft pin is always an indication that the motor bearings are receiving the proper lubrication.

It is best to remove the timer case cover about once a season and place a drop or two of very light "gun oil" on the various moving parts of the timer mechanism.

Cover Motor

The canvas hood, which is sent free of charge upon return of the registration card, properly filled out, should always be used to protect the ELTO when not in use, especially in rainy weather and at night when the air becomes damp.

PROPER POSITION OF MOTOR WHEN NOT IN USE—
It is best to keep motor in upright position when not in use.

WHEN PUTTING MOTOR AWAY FOR THE SEASON—
It is well to remove both the spark plugs and inject plenty of lubricating oil into the cylinders. The flywheel is then to be revolved a number of times in order to work this oil thoroughly into the pistons and rings. The plugs should then again be screwed into place. This will keep the parts well lubricated and eliminate danger of rusting.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

It is best to keep the motor in a dry place in order to protect it as much as possible. If it is apt to be subjected to dampness, it will be well to apply a liberal coat of soft grease or oil over the entire surface of the motor. This can easily be removed with a cloth saturated with gasoline when the motor is again to be used. Also fill the gear case with grease.

KEEP FLYWHEEL HANDLE IN A FORWARD POSITION or in line with one of the cylinders when motor is not in use. This brings the pistons up near the top of the stroke, thereby closing the ports in the cylinders. This will prevent moisture from entering the cylinders through the open exhaust ports. Closing the ports in this way, especially when the motor is not to be used for some time, permits the pistons and rings to retain the lubricating oil which the air entering the cylinders would otherwise dry up.

IF MOTOR HAS BEEN COMPLETELY SUBMERGED IN WATER—Remove the timer cover after removing flywheel as follows: First remove the nut and place a block of hard wood or brass on the end of the shaft. Hit the block a fairly good blow with a hammer, lifting up on the flywheel at the same time. In taking off the wheel be careful not to lose the key, which is apt to drop out. Drain out the water in the timer to eliminate any danger of the timer mechanism becoming rusted. Oil the parts of the timer mechanism, using a very light "gun oil." The coil will not be affected, as it is securely sealed and filled with a waterproof insulation. No doubt there will be water in the cylinders and crankcase, this will have to be removed to prevent the rings from becoming rusted. To remove the water, remove the carburetor and drain the crankcase, also carburetor. Take out the spark plugs and revolve the flywheel rapidly by hand for some time. Thereafter, add a small portion of lubricating oil to the cylinders. Also be sure to drain the gasoline tank thoroughly, including the feed pipe, to avoid the trouble which would follow in running the motor again, with water in the gasoline.

When the Elto Is Used in Salt Water

It has been unquestionably proven by thousands of owners that the ELTO Motor affords many years of most dependable and efficient service if given the proper care and protection. By this is meant that the motor, when not in use, should always be tilted out of water. At night the motor should *always* be removed from the boat to protect it from fog and damp salt air.

In addition to this, it is very necessary to go over the entire motor, especially the underwater parts, frequently with an oily cloth. If this is faithfully done, it will prevent the accumulation of the salt deposit, which, if left to collect, will cut down the speed and efficiency of the motor to a great extent.

If motor is in daily or continual use in salt water, the application of several coats of good marine or spar varnish over its entire surface will do a great deal to protect it.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Our Service Department

When you purchased your Super Elto Motor, you chose it because you considered it the best outboard on the market; also because you felt that you could secure prompt and intelligent service when you needed it.

We consider our Service Department one of the most important in our organization. With rare exceptions, all service inquiries and parts orders are handled within 24 hours.

If the occasion demands, we will give preference to the Service Department's requirements over Sales and Production.

Members of our Service Department are specially trained to render intelligent assistance to Elto users. Information is on file in this Department covering Elto Motors of all models in service under varied conditions.

While we have given in this book the information essential to securing the highest type of service from your Super Elto Motor, users may occasionally be confronted with unusual conditions not covered in this manual. At such times our Service Department should be consulted so that the trouble can be remedied to the users' entire satisfaction. The user should supply all information possible, including the number of his motor.

Through direct experience and years of contact with Elto owners our Elto Service Department is splendidly equipped to take care of the servicing of Elto Motors of any model and we cordially invite Elto users to take advantage of this complete service.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Complete List of Parts and Accessories

Also Instructions on How to Order

For their convenience, as well as ours, we ask our customers to carefully follow our instructions in ordering ELTO repair parts.

Always give the serial number of the motor for which the part or parts are required. This is very important, and is necessary to intelligently fill your order. If you cannot give us the number of the motor, state when and from whom the motor was purchased.

Order by Part Number, giving Name of part also.

Code Words. Use code words when ordering by telegram, but not when ordering by letter or telephone.

Shipping Instructions. State whether shipment is to come forward by express, freight or parcel post.

Remittance. Always accompany your order by cash sufficient to cover the cost of the articles and transportation charges. This will save both time and money, and will eliminate the annoyance of a C. O. D. shipment. Postage will be accepted in payment of orders not exceeding \$1.00.

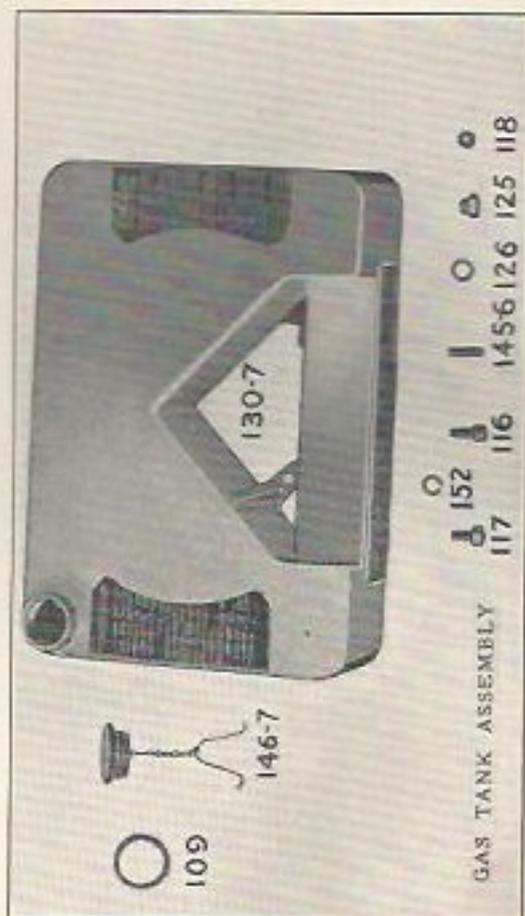
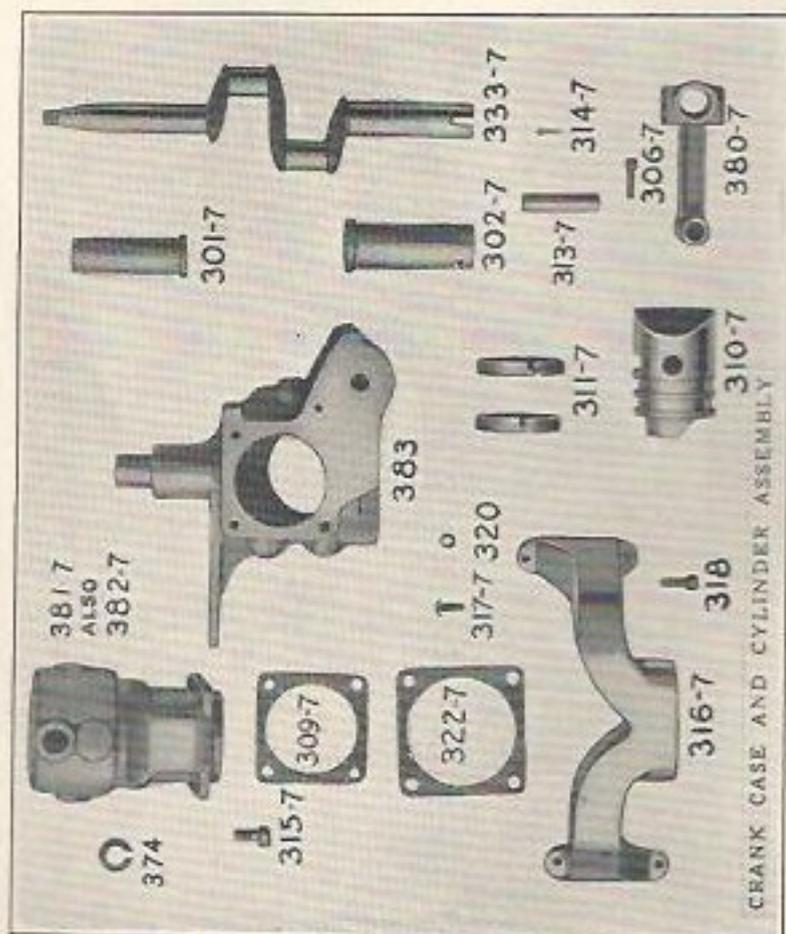
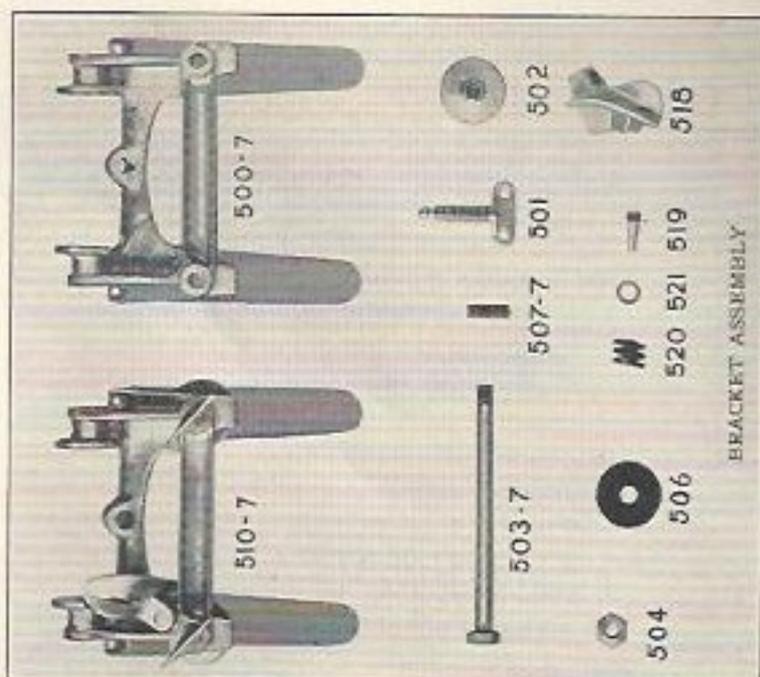
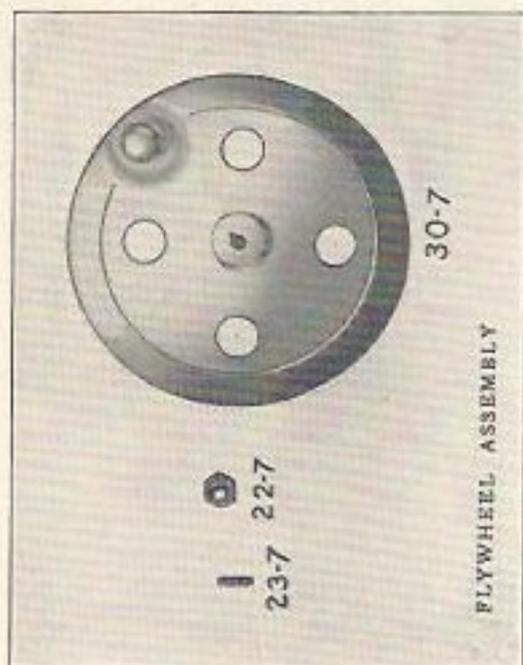
Instructions for Returning Parts. Tag each part with motor number from which it is removed. Place name and address plainly on each tag, and at the same time advise us by letter what parts are being returned and your object in returning them.

Transportation charges must be prepaid on all parts returned to the factory.

Prices quoted in this booklet are subject to change without notice.

ELTO OUTBOARD MOTOR COMPANY
Milwaukee, Wis., U. S. A.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.



Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

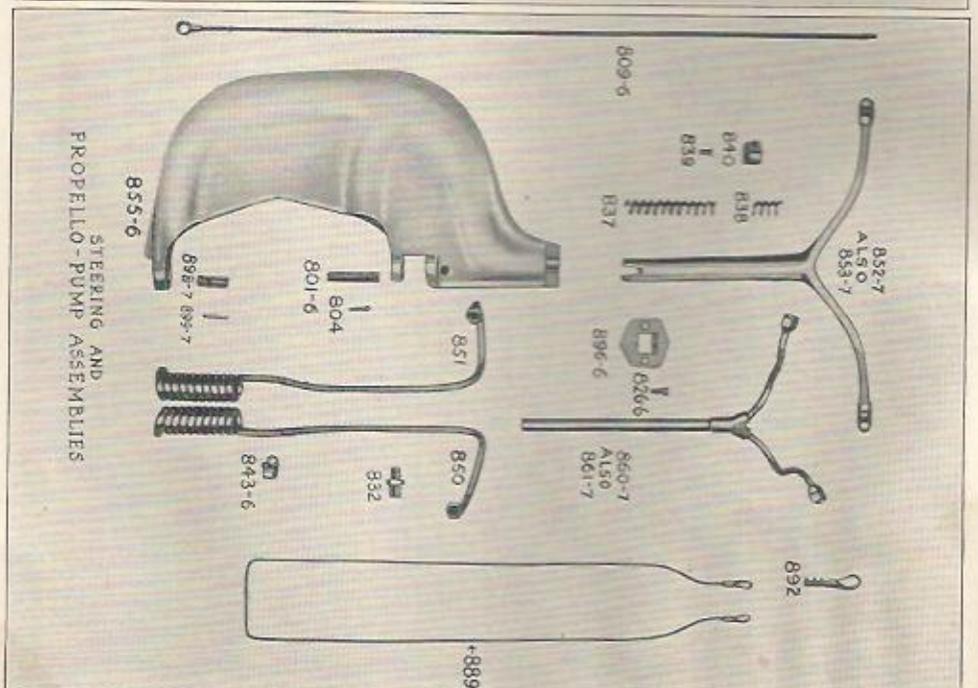
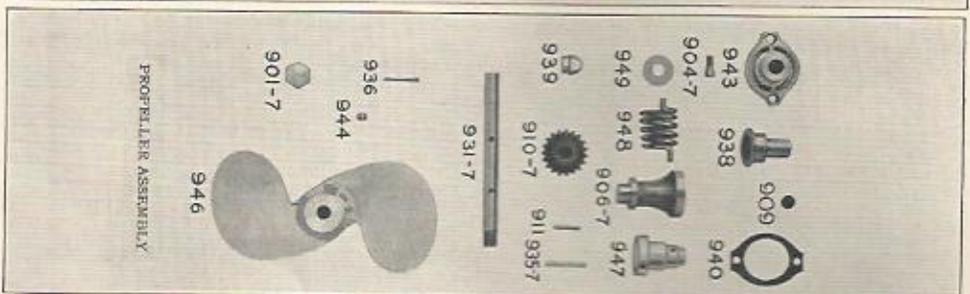
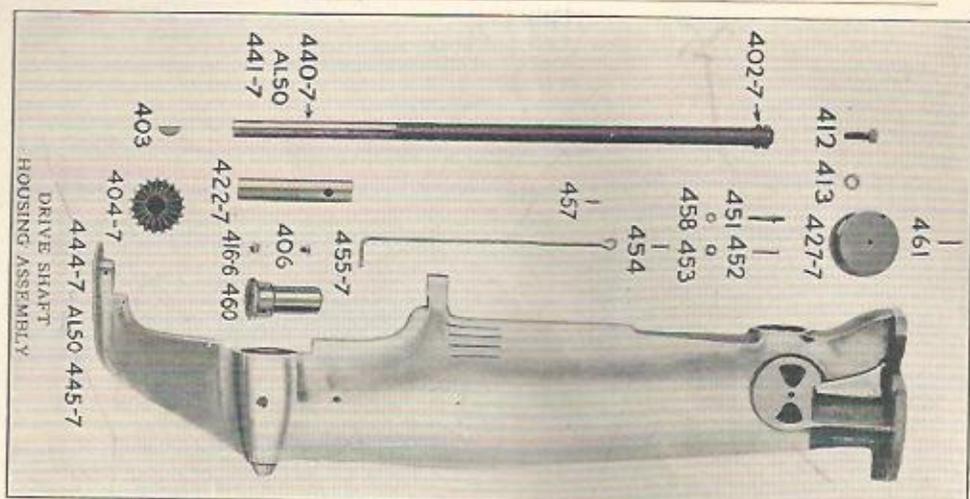
Fly-Wheel, Gas Tank, Crank Case, Cylinder and Bracket Assemblies

Part No.	Code	Name of Part	No. of Pieces Used on Each Motor
FLYWHEEL ASSEMBLY			
22-7	Frav	Flywheel nut.....	1
23-7	Fremd	Flywheel key.....	1
24	Evict	Flywheel handle only (not shown).....	1
25	Evince	Flywheel handle spring only (not shown).....	1
26	Evite	Flywheel handle pin only (not shown).....	1
27	Evoke	Flywheel handle sleeve only (not shown).....	1
30-7	Fresco	Flywheel with handle.....	1
GAS TANK ASSEMBLY			
109	Abhor	Cap gasket.....	1
114-7	Friar	ELTO name plate (not shown).....	1
116	Abode	Screw, front.....	2
117	Aboon	Screw, rear.....	1
118	Dree	Washer, rear.....	1
125	Drib	Strainer cap.....	1
126	Drift	Cap gasket.....	1
130-7	Frijol	Tank complete with all fittings.....	1
145-6	Exert	Strainer screen.....	1
146-7	Frit	Filter cap assembly.....	1
147	Exhale	Name plate (lubrication) (not shown).....	1
148-7	Friz	Name plate (instruction) (not shown).....	1
150	Exit	Timer control eyelet (not shown).....	2
151	Expel	Timer stop (not shown).....	1
152	Fro	Tank bracket screw lock washer (same as 413).....	1
CRANK CASE AND CYLINDER ASSEMBLY			
301-7	Fronc	Crankshaft bearing (upper)...	1
302-7	Frore	Crankshaft bearing (lower)...	1
CONNECTING ROD ASSEMBLY			
306-7	Froth	Connecting rod screws.....	4
309-7	Frow	Cylinder gaskets.....	2
*310-7	Frump	Piston (right or left).....	2
311-7	Fry	Piston rings.....	4
313-7	Fup	Wrist pin.....	2
314-7	Fugue	Cotter for wrist pin.....	2
315-7	Fune	Cylinder cap screw.....	8
316-7	Fungi	Exhaust manifold.....	1
317-7	Fur	Manifold screw (upper).....	4
318	Anele	Manifold screw (lower).....	2
320	Angel	Manifold screw lock washer.....	6
322-7	Furor	Crank case gasket.....	1
333-7	Fust	Crankshaft.....	1
374	Fye	Cylinder screw lock washer (same as 413).....	8
*380-7	Gab	Connecting rod (right or left).....	2
†381-7	Gable	Cylinder (left).....	1
†382-7	Gait	Cylinder (right).....	1
383	Gamete	Crank case with 301-7 bearing.....	1
BRACKET ASSEMBLY			
500-7	Gamin	Bracket only.....	1
501	Adomis	Thumb screw.....	2
502	Adroit	Thumb screw button.....	2
503-7	Gamy	Bolt.....	1
504	Advert	Nut.....	1
506	Adytum	Friction washer.....	2
507-7	Gan	Adjusting screw.....	1
509	Erase	Lock washer (not shown).....	1
510-7	Ganoid	Bracket complete.....	1
518	Garth	Tilting lock.....	1
519	Gast	Tilting lock pin.....	1
520	Gaum	Tilting bolt tension spring.....	1
521	Gavot	Washer for tilting bolt.....	1

* Pistons and connecting rods are interchangeable and can be used in either right or left positions.

† Cylinders must be ordered especially for right or left positions.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

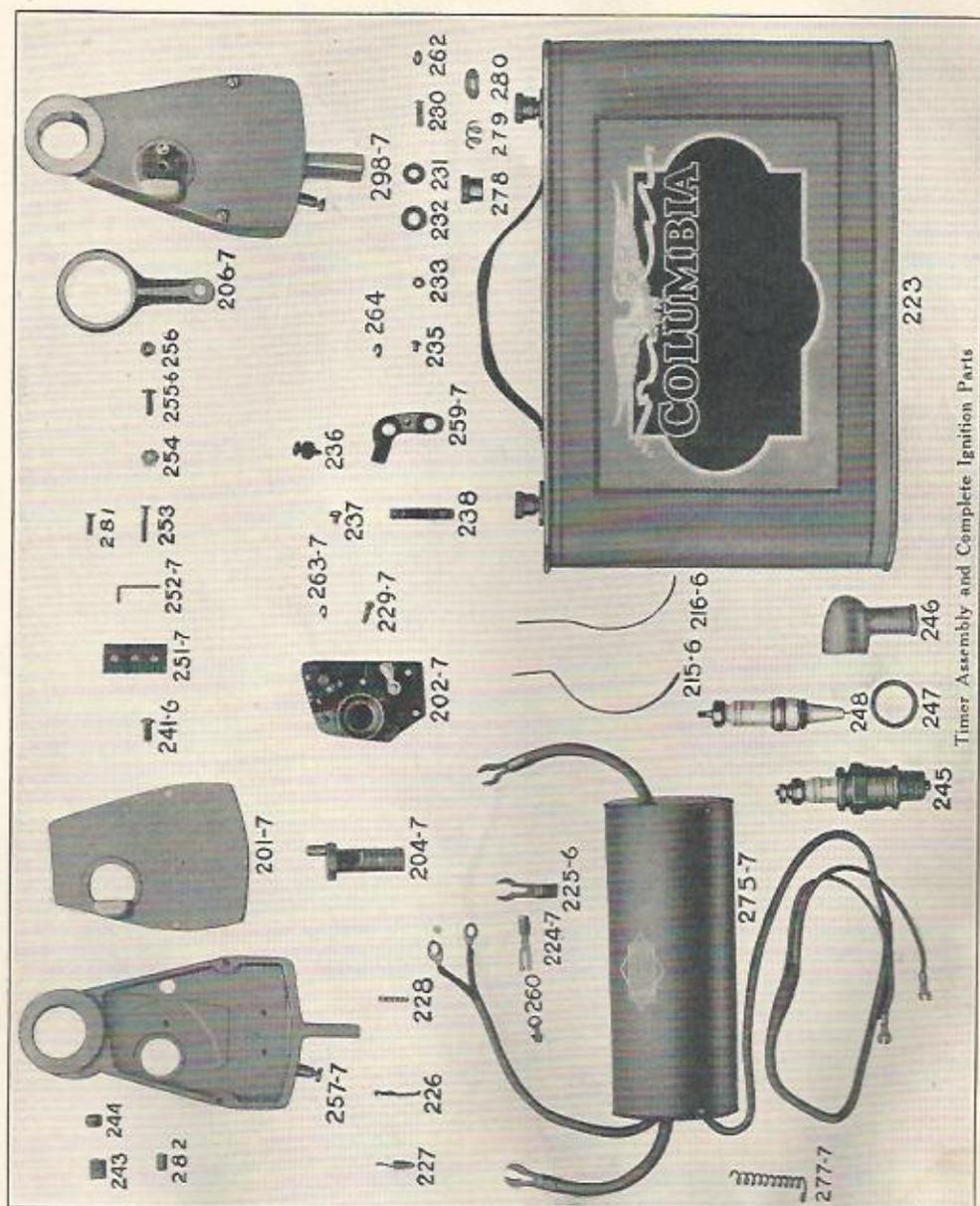


Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Drive Shaft Housing, Propeller, Steering and Propello-Pump Assemblies

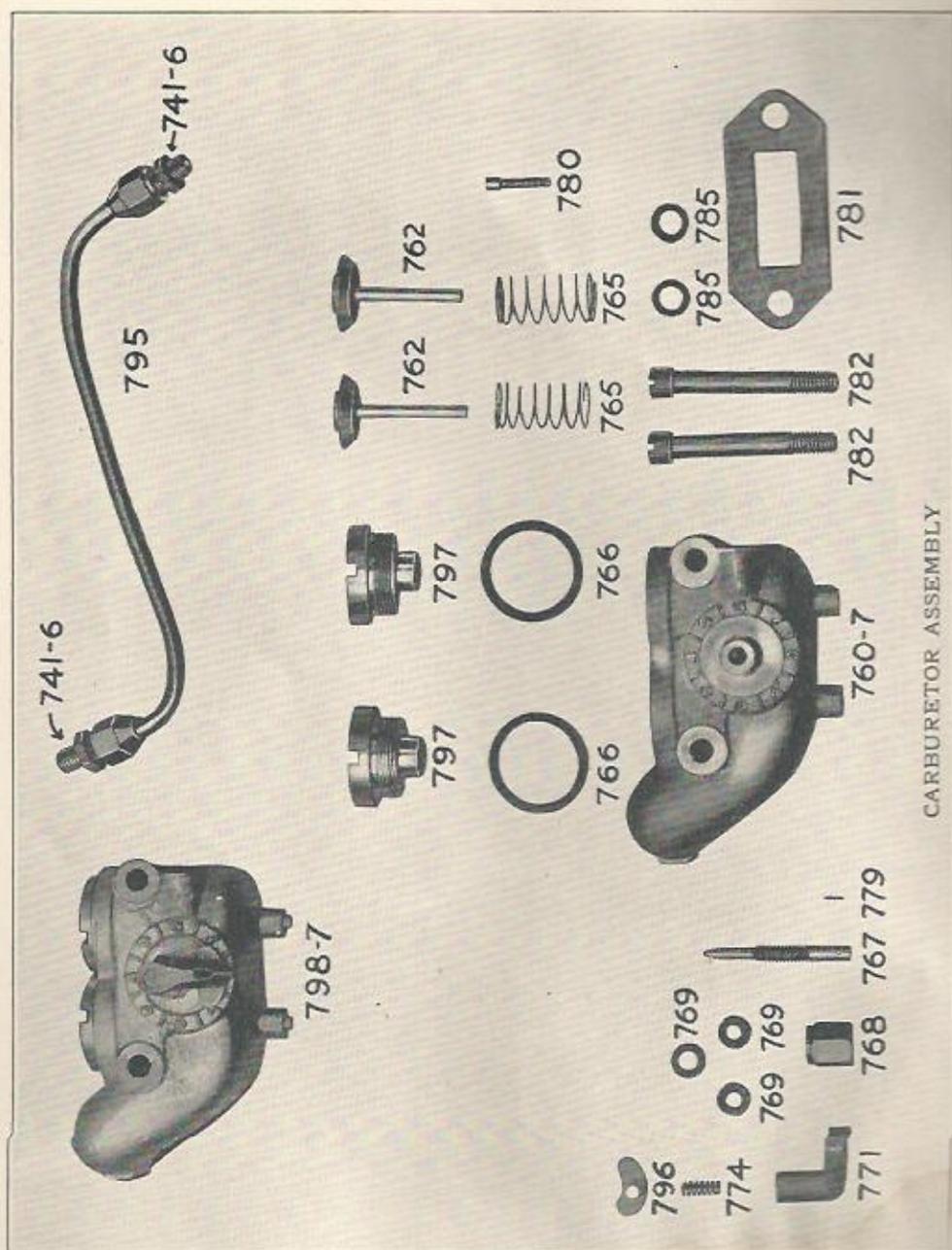
Part No.	Code	Name of Part	No. of Pieces Used on Each Motor
DRIVE SHAFT HOUSING ASSEMBLY			
402-7		Gawk	2
403		Drive shaft pin	1
404-7		Drive shaft key	1
406		Drive shaft gear	1
412		Bearing retaining screw	4
413		Flange screws	4
416-6		Flange screw lock washers (same as No. 152 & No. 374)	4
422-7		Grease plug (same as 944)	1
427-7		Drive shaft bearing	1
440-7		Cut-out cover	1
441-7		Drive shaft with pins (model J)	1
*444-7		Drive shaft with pins (model K)	1
*445-7		Housing comp. with 302-7, 460 brgs., 943 gear case cover comp., 904-7 cover screws and 939 thrust brg. hole plug (model J)	1
451		Housing comp. with 302-7, 460 brgs., 943 gear case cover comp., 904-7 cover screws and 939 thrust brg. hole plug (model K)	1
452		Cut-out cover stud	1
453		Cut-out cover shoulder pin	1
454		Cut-out cover washer	1
455-7		Cut-out cover cotter	1
457		Cut-out cover rod	1
458		Cut-out cover stud lock pin	1
460		Cut-out cover nut	2
461		Drive shaft gear thrust bearing Cut-out cover stop pin	1
* Housing furnished with bearings because bearings are pressed in by machine. 943 gear case cover and 939 plug furnished because they are fitted, finished and polished with the housing. Housing can be furnished without cover and plug if desired.			
STEERING ASSEMBLY			
801-6		Rudder pin (upper)	1
804		Rudder cotter pin	1
809-6		Tiller rope with eyelet	2
826-6		Bracket screw	2
832		Pipe half union	4
837		Yoke hold-down spring	1
838		Tube hold-down spring	1
839		Tube clamp screw	1
840		Tube clamp	1
843-6		Outlet coil clamps	2
850		Outlet coil complete (right)	1
851		Outlet coil complete (left)	1
852-7		Tiller yoke complete (model J)	1
853-7		Tiller yoke complete (model K)	1
855-6		Rudder complete	1
860-7		Fulcrum tube comp. (model J)	1
861-7		Fulcrum tube comp. (model K)	1
889		Boat rope with snaps (12 feet)	1
892		Snap only	2
896-6		Tiller yoke bracket	1
898-7		Rudder pin (lower)	1
899-7		Rudder retaining pin (lower)	1
PROPELLER ASSEMBLY			
901-7		Propeller nut	1
904-7		Cover retaining screw	2
906-7		Propeller thrust bearing	1
909		Plug for thrust bearing	1
910-7		Propeller gear	1
911		Propeller gear pin	1
931-7		Propeller shaft	1
935-7		Drive collar pin	1
936		Propeller nut cotter pin	1
938		Cover bearing only	1
939		Thrust bearing hole plug	1
940		Gear case cover gasket	1
943		Gear case cover comp. with 938	1
944		Grease plug (same as 416-6)	1
946		Propeller with grease plug	1
947		Propeller drive collar	1
948		Propeller drive spring	1
949		Propeller washer	1

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.



Timer Assembly and Complete Ignition Parts

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.



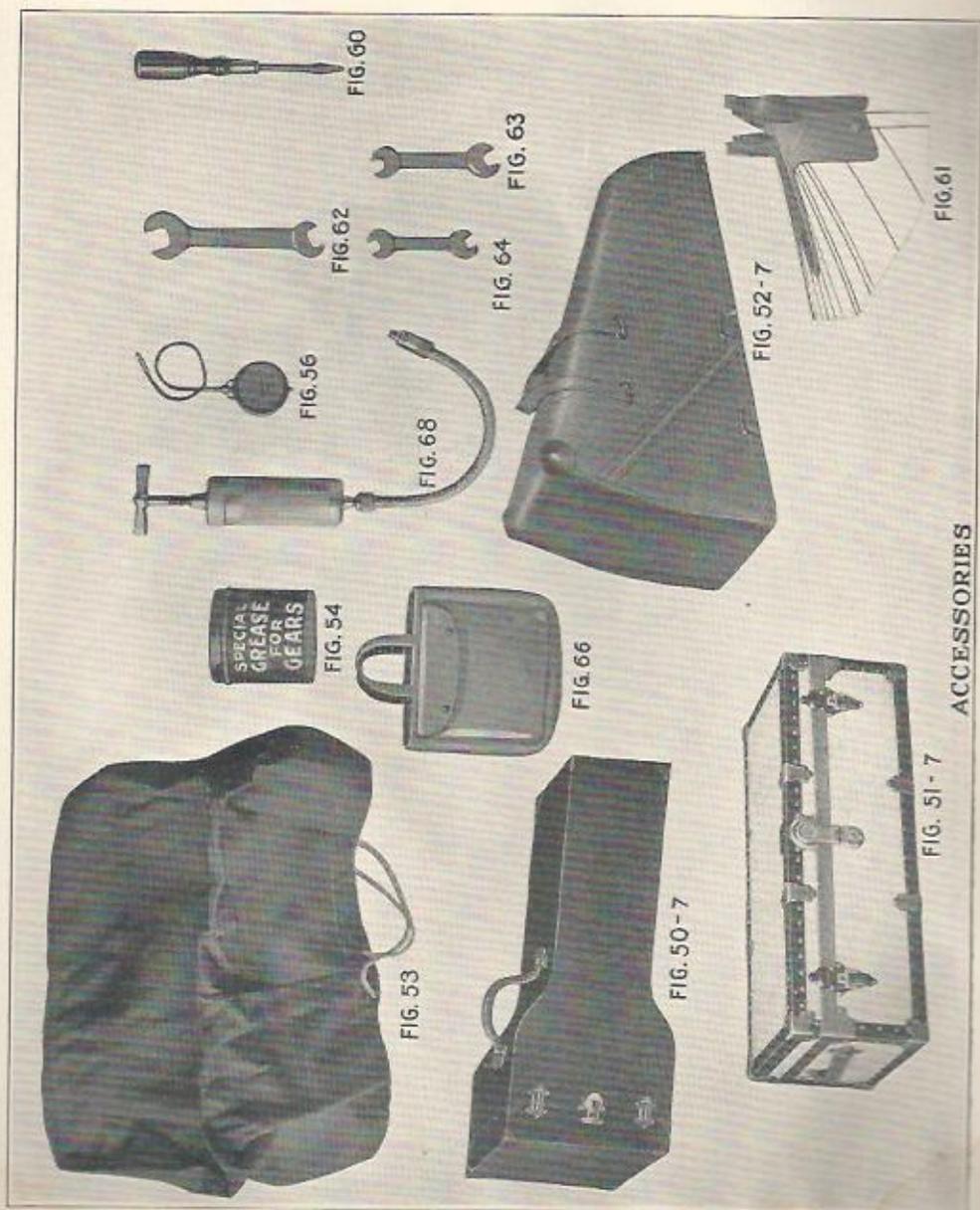
CARBURETOR ASSEMBLY

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Carburetor Assembly

Part No.	Code	Name of Part	No. of Pieces Used on Each Motor
CARBURETOR ASSEMBLY			
741-6	Fasces	Half union	2
760-7	Haw	Body only	1
762	Faun	Air inlet valve	2
765	Fause	Air inlet valve spring	2
766	Faze	Top gasket	2
767	Feal	Needle valve	1
768	Featly	Packing nut	1
769	Fee	Packing gasket	3
771	Feign	Indicator	1
774	Fenne	Friction spring	1
779	Ferule	Indicator guide rivet	1
780	Fervid	Cleaning screw	1
781	Fescue	Flange gasket	1
782	Festal	Flange screw	2
785	Fettle	Screw gasket	2
795	Flite	Feed pipe complete	1
796	Fochhn	Indicator friction	1
797	Foh	Top with cushion spring	2
798-7	Hept	Carburetor complete	1

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.



Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Accessories

Part No.	Code			
*Fig. 50-7	Helot	ELTO carrying case.....	10" x 14" x 37"	16 lbs.
*Fig. 51-7	Hem	ELTO trunk.....	11 1/2" x 15 1/2" x 38"	35 lbs.
*Fig. 52-7	Hob	ELTO canvas carrying bag (collaps).....	9 1/2" x 37"	5 lbs.
Fig. 53	Chafe	ELTO canvas hood or cover.....		
	Chary	ELTO shipping case (not shown).....	12" x 16" x 43"	38 lbs.
Fig. 54	Chaise	One pound can "ELTO" special gear case grease.....		
	Chalk	Three pound can "ELTO" special gear case grease (not shown).....		
	Ichor	Five pound can "Elto" special gear case grease (not shown).....		
	Elan	Troll guide (not shown).....		
Fig. 56	Chela	Ammeter (for testing battery).....		
Fig. 60	Chap	Screw driver.....		
Fig. 61	Chapel	Bracket (aluminum casting) for pointed stern boat.....		
Fig. 62	Eddie	Large wrench for flywheel, bracket and spark plug.....		
Fig. 63	Edit	Medium wrench for propeller nut and pipe connection.....		
Fig. 64	Educe	Small wrench for carburetor and gasoline line.....		
Fig. 66	Flaunt	Battery carrier and tool kit.....		
Fig. 67	Frap	Motor lock, with two keys (shown on page 32, Fig. 67).....		
Fig. 68	Holla	Alemite grease gun complete with hose.....		
	Hyoid	Hose only for above (not shown).....		
	Hyrax	Fitting only for above (not shown).....		

*NOTE: In ordering these containers state whether long or short model.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

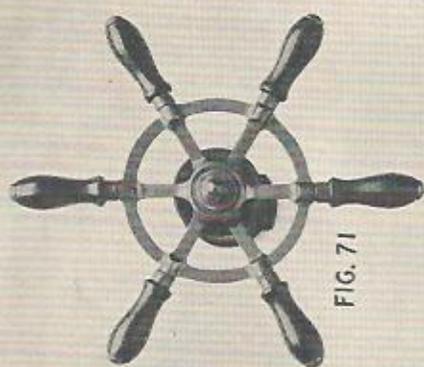


FIG. 71



FIG. 72



FIG. 74

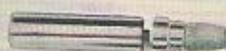


FIG. 70

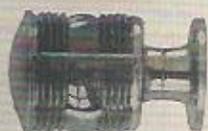


FIG. 73



FIG. 69

BOAT EQUIPMENT

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Boat Equipment

Government regulations require all motor boats, operated on navigable waters, to be equipped with items Nos. 69, 70, 72 and 73.

In addition the operator is required to have two copies of the pilot rules and regulations in his possession. (These can be secured from your local custom officials.)

Part No.	Code	Description
Fig. 69	Holm	Life preserver pillow made of black Spanish leather filled with fine java kapoc.
Fig. 70	Horal	Mouth boat whistle, full tone, nickel plated with wooden mouthpiece
Fig. 71	Hued	Steering wheel, 12" diameter, polished brass, mahogany drum and handles
Fig. 72	Hydra	Pyrene extinguisher (quart size)
Fig. 73	Hylas	Electric outboard light, highly polished bronze, red and green Fresnel lenses with 6 volt bulb.
Fig. 74	Hyson	Boat sheave (polished bronze)
Fig. 75	Manse	Folding Boat Seat (padded seat and back rest 11" x 11" x 16" high) (not shown)
Fig. 78	March	Spare Gas Can (not shown)

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Front Sectional View of the Super Elto

GASOLINE TANK—Heavily nickel plated. Dull finish. Capacity slightly over 1 gal. or enough for about 2 hrs. running at full speed.

MOTOR—Two cylinder, two cycle, water-cooled; $2\frac{1}{2}$ " bore, 2" stroke. Up to 1700 R. P. M. Offset, opposed cylinders permitting straight power thrust.

SPARK PLUGS—Metric size; standard make.

CRANK SHAFT—Chrome nickel steel drop forging, case hardened and ground. Long main bearings; lower $3\frac{1}{4}$ " long by 1" diameter. Upper $3\frac{1}{2}$ " long by $\frac{5}{8}$ " diam. Crank pins $1\frac{1}{2}$ " long by $\frac{3}{4}$ " diam. All bearings closely ground.

CONNECTING RODS—Special heavy duty phosphor bronze, split at crank pin end. Cap held by heat-treated chrome nickel steel screws.

SUPER *Elto* Specifications

BRACKET—Special lynite casting, strong and rigid. Fits any stern up to 2" thick. Bracket width $7\frac{3}{4}$ "; friction clutches permit tilting of motor. Bronze drop-forged thumb screws and buttons.

CYLINDERS—Close-grained grey iron, dull nickel finish—polished heads. Combustion chamber except at heads water-jacketed. Bore ground and lapped to mirror-like finish—accuracy .0002 inch. Combustion chamber entirely machined to eliminate carbon. Specially treated to resist rust and corrosion.

PISTONS—Fine close-grained grey iron. Extra long, perfectly balanced. Machined, ground and lapped. Deflector and head entirely machined.

PISTON RINGS—Special fine semi-steel. Lapped to perfect fit in piston grooves, and into cylinders.

WRIST PINS—Chrome nickel steel $\frac{3}{8}$ " diam., hollow, case hardened and ground.

DRIVING DEPTH—Measurement from top of arch of bracket to center of propeller wheel, Model J 21"; Model K 24".

SAFETY SHOE—Lower end of housing forms a substantial safety shoe to protect propeller when striking obstructions or running aground.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Side Sectional View of the Super Elto

FLYWHEEL—Grey iron. Entire top and rim machined and nickel-plated. Diam. 9 1/4". Starting handle drops flush into rim. Specially treated to resist rust and corrosion.

IGNITION—Arwater-Kent Unispark with special non-vibrating high power coil mounted under tank, fully protected. Timer located below flywheel, actuated by eccentric on flywheel hub. Coil and timer water-proof and compact. Current is supplied by Columbia Hot Shoe battery, sealed in metal case and positively water-proof. Battery size 2 1/4" x 7 1/4" x 10 1/4", weight 2 lbs., guaranteed to last full season.

CARBURETOR—Cast aluminum alloy. Mechanical valve type. Contains two light, quick acting automatic valves giving doubly fine vaporization. No float, no dripping of gasoline. No flooding when not operating.

CRANK CASE—Lyrite—one piece. Bronze bearing pressed in and easily renewable.

PROPELLO-PUMP—(Patented). Combining scoop, propeller pressure and syphon effect. Perfect water circulation. No parts to wear, no valves to stick. Self draining.

GEARS—Chrome nickel steel with perfect generated teeth; case hardened, hole ground.

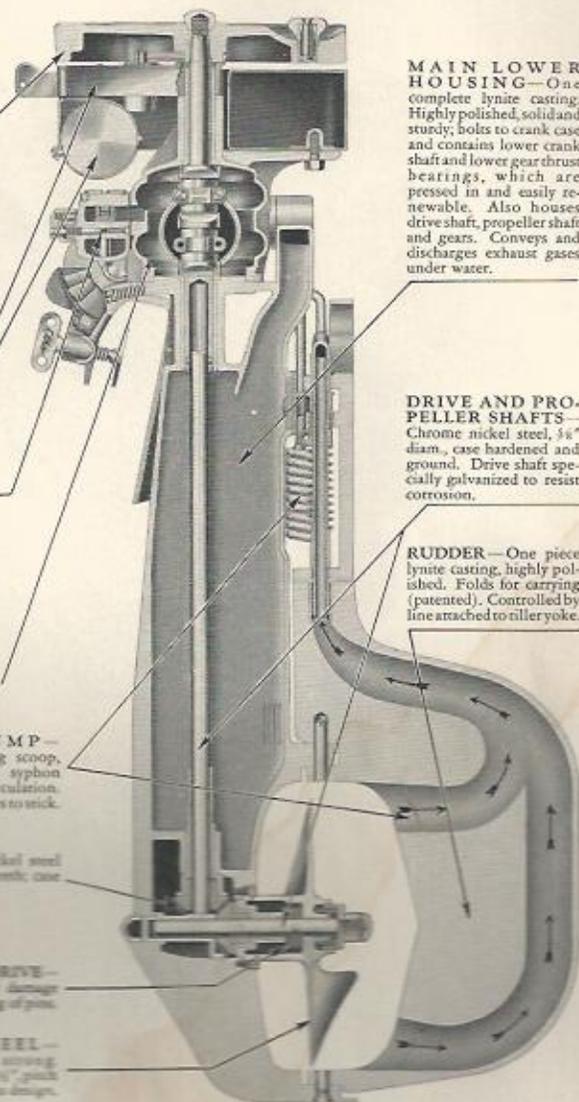
SAFETY CLUNION DRIVE—Entirely avoids propeller damage and eliminates the danger of pin.

PROPELLER WHEEL—Lyrite; exceptionally strong highly polished. Diam. 7 1/2" pitch 7 1/2". Two blade, webless design.

MAIN LOWER HOUSING—One complete lyrite casting. Highly polished, solid and sturdy; bolts to crank case and contains lower crank shaft and lower gear thrust bearings, which are pressed in and easily renewable. Also houses drive shaft, propeller shaft and gears. Conveys and discharges exhaust gases under water.

DRIVE AND PROPELLER SHAFTS—Chrome nickel steel, 3/8" diam., case hardened and ground. Drive shaft specially galvanized to resist corrosion.

RUDDER—One piece lyrite casting, highly polished. Folds for carrying (patented). Controlled by line attached to tiller yoke.



Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.

Motor Lock

Price List on Accessories on Page 27

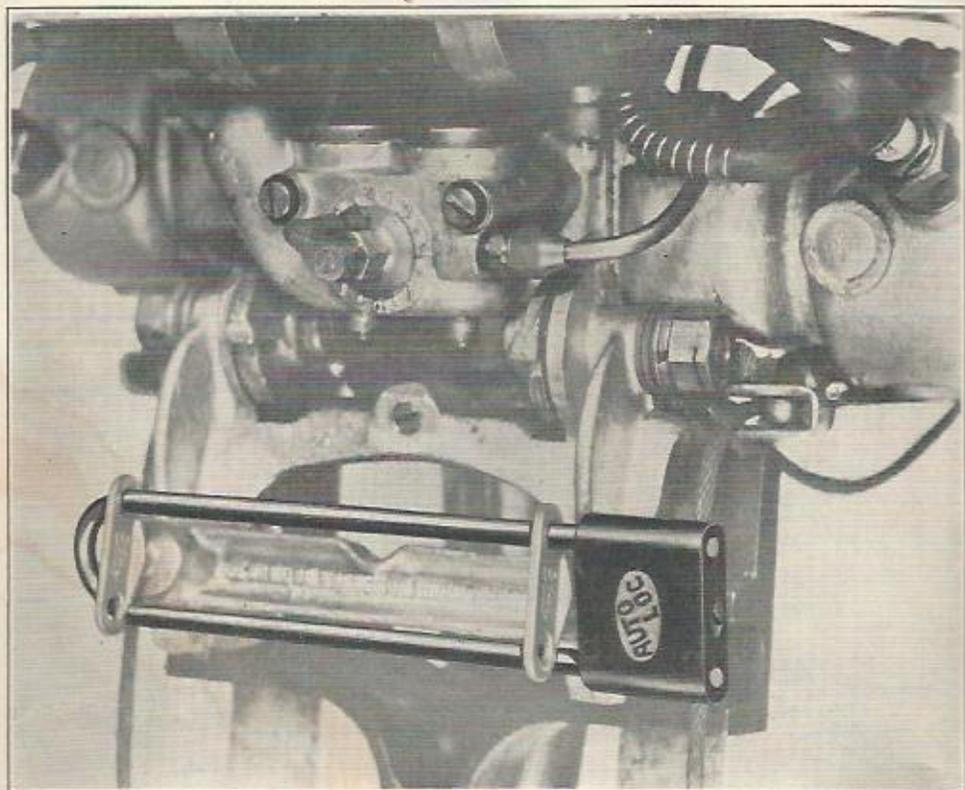


Fig. 67

This lock affords a temporary protection when leaving your motor attached to the boat. It can be attached quickly, as it slips through the holes in the motor thumb screws after they have been drawn down securely.

Do not fail to give the serial number of motor stamped on name plate when ordering parts or writing for information.