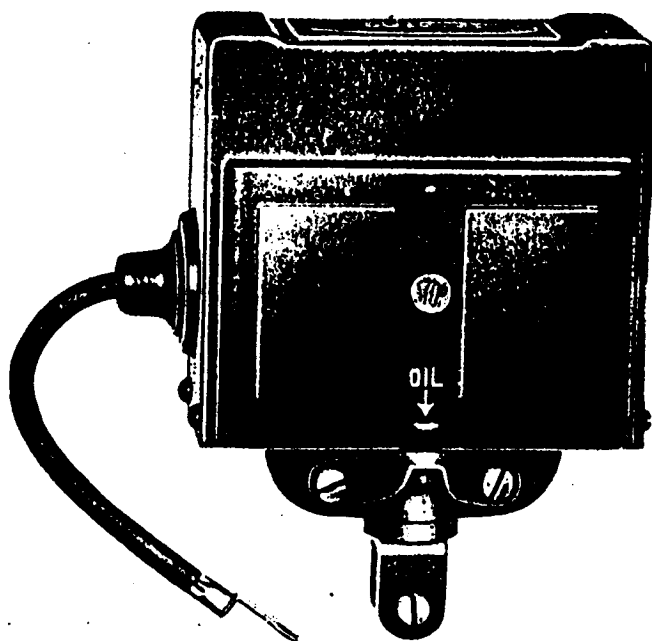


COMPLETE INSTRUCTIONS AND PARTS LIST
FOR CARE AND OPERATION OF
TYPE EK
WICO MAGNETOS



**WICO-BUILT
IGNITION**

Wico Electric Company
WEST SPRINGFIELD, MASSACHUSETTS

Service Instructions for Type EK WICO Magneto

This book contains complete instructions for caring for the Type EK WICO Magnetos and also explains how they operate, so that the man who uses them can thoroughly understand them. The Type EK WICO Magneto is a very simple device that every engine runner can keep in order as easily as he can any part of his engine. This book is written for the express purpose of making this fact clear to every user of WICO Magnetos.

It sometimes happens that trouble arising from defective spark plugs, poor fuel mixture, and other causes, for which the magneto is not to blame, is attributed to the magneto. If these instructions are followed when trouble occurs, the responsibility can be definitely placed and time saved.

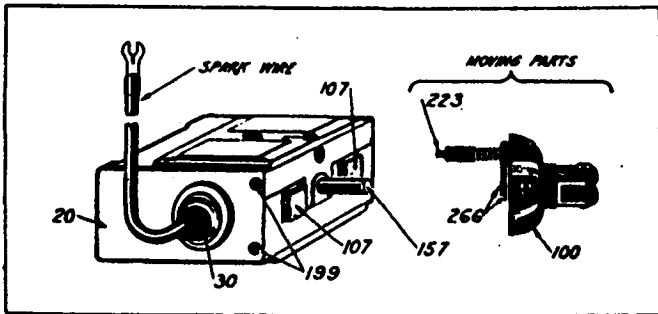


Fig. 1—Magneto, Moving Parts Removed

The distance between spark plug points should be from .015 inches to .025 inches (the thickness of five or six sheets of paper.) The insulator (Porcelain or Mica) inside base of spark plug must be kept clean (free from carbon), because the electricity from the magneto leaks through the carbon on the insulator instead of jumping across the points, and makes it hard or impossible to start the engine or makes it fire irregularly. Excessive oiling of engine and too rich a fuel mixture may deposit carbon on the insulator. Use a thin knife blade, a rag, and gasoline for cleaning. A plug will sometimes show a spark when tested outside of the cylinder and yet fail to fire the engine when replaced in the cylinder. This shows that the plug is "leaky", because of carbon or because the porcelain insulator is cracked. A "leaky" plug will spark outside the cylinder and not inside because the spark can jump through the air easier than it can jump through the compressed charge inside the cylinder, especially when the engine is cold.

Clouds of black smoke from exhaust indicate too rich a mixture. Screw needle valve in a trifle until smoke disappears. If engine misses or fires back through carburetor or mixing valve, mixture is too lean. Screw needle valve out a trifle. If engine does not fire regularly mixture is probably too rich. Too rich a mixture will waste gasoline and carbonize engine and spark plug.

HOW TO START

(See Figures II, IV, V and VII)

Put advance lever (403) in the starting position (See Figure II for Type No. 1 drive, Figure IV for Type No. 2 drive, and Figure VII for Type No. 3 drive) Be sure the spark wire (Figure 1), is connected to the spark plug. If engine is provided with a priming cup, prime engine by pouring a small amount of gasoline into the cup and letting it flow into the cylinder. If there is no priming cup, instructions accompanying engine will show how to choke air intake for same purpose. Turn flywheel in the

direction in which it will run. If engine does not start after turning a few times, prime with a little more gasoline. If the engine then fails to start remove spark wire from spark plug, release compression by holding intake valve open also open priming cup, and spin the flywheel rapidly a few times to blow out excess gasoline, due to priming charge being too heavy. (Removal of spark wire is to prevent ignition blowing back when intake valve is open and starting outside fires). Then prime engine again, using less gasoline than at first, and again turn flywheel in direction in which it will run. In extremely cold weather, a much heavier priming charge can be used safely. Engines failing to start in hot weather, especially when they are warm, are usually primed too heavily and require blowing out as described above. After engine comes up to speed, move the advance lever (403) to the running position. (See Figure II for Type No. 1 drive, Figure IV for Type No. 2 drive and Figure VII for Type No. 3 drive.)

THE TYPE EK WICO MAGNETO METHODS OF DRIVING

There are three general types of drive for the Type EK WICO Magneto:—

- Type No. 1, Eccentric and Strap Drive (See Figures II and III).
- Type No. 2, Push Rod Drive (See Figures V and VI).
- Type No. 3, Combination Drive (See Figure VII).

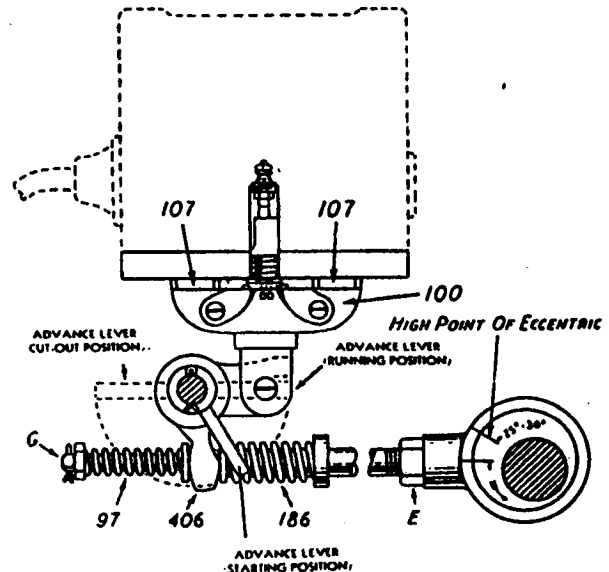


Fig. II—Type No. 1 Drive; Armature Ready to Trip, Advance Lever Retarded

TYPE NO. 1 DRIVE

(Figures II and III)

In the Type No. 1 Drive the Magneto is operated by an eccentric and strap from the crank shaft or half-time shaft of the engine. There are several forms of this drive, but they are all the same in principle. The armature (100) is held against the cores (107) by the return spring (97) and by the magnetic attraction of the cores. The spark is produced by pulling the armature about 1/16" to 3/32" away from the cores (This is called "tripping"

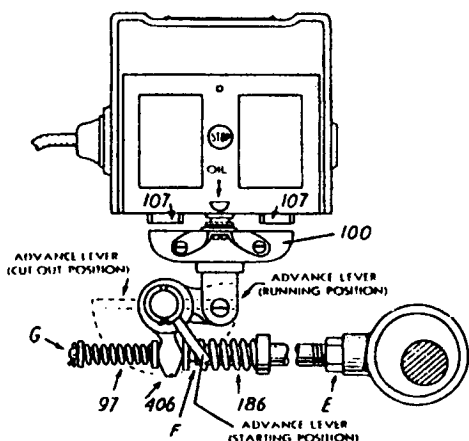


Figure III—Type No. 1 Drive; Armature Just Tripped, Advance Lever Retarded

the armature). This is done by the drive spring (186) which bears against the end of the rocker arm (406) and is compressed as the eccentric turns until finally the trip shoulder (F) inside the spring bottoms against the end of the rocker arm and instantly breaks the magnetic contact between the cores and the armature which is then snapped away from the cores by the compressed drive spring. As the eccentric continues to revolve, the pressure of the drive spring is relieved and the return spring (97) draws the armature back to the cores again where it remains until the proper time for again making the spark.

Timing Control:

The time of the spark is controlled by the advance lever (See Figure II) which adjusts the rocker arm back and forth with relation to the trip shoulder (See F, Figure III). The advance lever can always be set in two positions (advance and retard) and on some engines it can be set in a third position (cut-out) which will prevent the armature from tripping and thus no spark will be produced.

The advance lever should be in the retard position for starting and in the advance position for running.

Armature Opening:

When the magneto is installed on an engine the eccentric should be properly located on its shaft, so that proper spark control may be secured with the least opening of the armature when the engine is at full speed. Large armature openings are undesirable because they put unnecessary strains on the wearing parts. The maximum armature opening should not exceed 1/4".

Eccentric Setting:

For reversible engines, when the piston is at the end of its compression stroke, the eccentric should be at its point of maximum throw towards the end of the rocker arm.

For non-reversible engines (both 2-cycle and 4-cycle), when the piston is at the end of its compression stroke, the eccentric should be 25° to 30° before its greatest throw towards the rocker arm (See Figure II). In other words, when the eccentric is properly set on 2-cycle non-reversible engines, the flywheel will have to be rotated 25° to 30° beyond compression center before the eccentric reaches its greatest throw towards the rocker arm, and in 4-cycle engines the flywheel will have to be rotated 50° to 60° beyond compression center before the eccentric reaches its greatest throw towards the rocker arm, because in 4-cycle engines the flywheel rotates 2 degrees to the eccentric's 1 degree; while in 2-cycle engines the flywheel rotates 1 degree for every degree that the eccentric rotates.

If this setting of the eccentric is used, the necessary movement of the advance lever to provide the proper advance can be accomplished without giving the armature so great a throw that it will leave the poles more than 1/4".

Timing Adjustment

The lock nut (E) is for the use of the engine builder after properly timing the magneto when it is installed on the engine.

CAUTION: Engine users should not tamper with this nut unless it becomes necessary to adjust the time of spark, and then the trip rod should be moved only enough to insure that the magneto trips at the end of the compression stroke when the advance lever is in the starting position. Tighten lock nut after this adjustment.

Return Spring Adjustment

The adjusting nut (G) on the end of the eccentric rod is for the use of the engine builder for properly setting the return spring (97).

CAUTION: Engine users should not tamper with this nut unless it has to be removed for some purpose. In such cases replace it as follows:—Set the advance lever in the cut-out position (See Figure II), or in the retard position, if the engine has no cut-out position, and turn the flywheel until the driving eccentric is at its point of greatest backward throw from the rocker arm (406). Then set up the adjusting nut (G) until the return spring (97) is completely closed up, then unscrew the nut one turn and lock in place.

TYPE NO. 2 DRIVE

(See Figures V and VI)

This drive is designed for operating the magneto from the valve push rod of the engine by means of the trip finger (404). The armature (100) is held against the cores (107) by the return spring (97) and by the magnetic attraction of the cores. The spark is produced by pulling the armature about 3/32" away from the cores. (This is called "tripping" the armature). As soon as this is done the armature is released ("latched off") and the return spring quickly lifts it back to the cores. The movement of the armature is accomplished so rapidly that it is on the cores about 95% of the time. In Figure V the armature is shown in contact with the cores ready to trip, and drive spring (186) compressed.

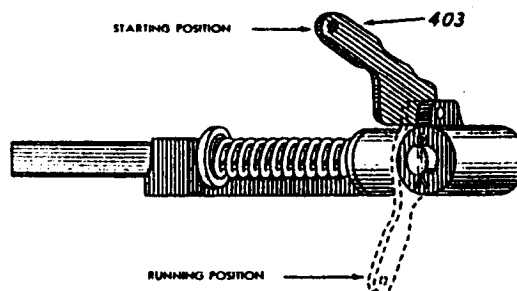


Fig. IV—Trip Finger used in Type No. 2 Drive Only, Showing Starting and Running Positions of Advance Lever

In Figure VI the armature is shown away from the cores and the trip finger about to "latch-off", and release the armature for its return to the cores.

The armature is tripped (pulled down) by the rocker arm (406) when it is engaged by the trip finger on the push rod. After the armature has moved down 1/8", thus opening the breaker points (See Figures VI and IX), the "latch-off" screw (419) disengages the rocker arm from the trip finger latch (404) and the return spring replaces the armature on the cores. The trip finger latch bears against a spring (186), and when the latch engages the rocker arm this spring is compressed until the end of the latch-rod bottoms against the advance lever (403) (See Figure V), and by so doing trips the armature. Then the compressed spring drives the latch forward and thereby gives a very rapid movement to the armature.

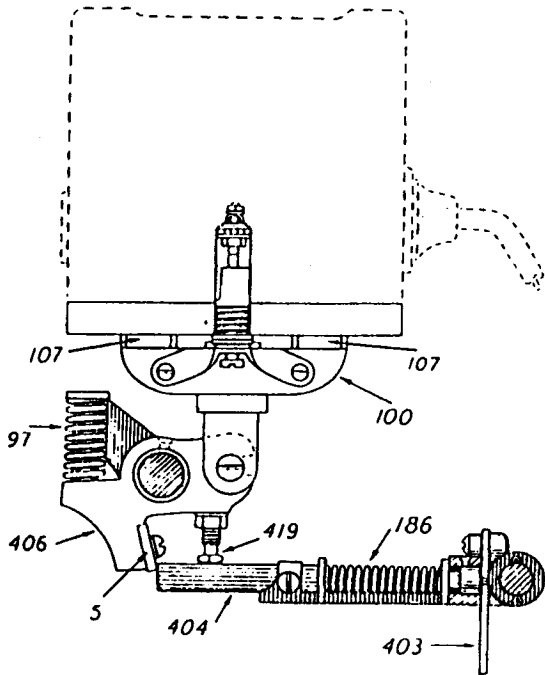


Fig. V—Type No. 2 Drive: Armature Ready to trip

Timing Control:

The time of the spark is controlled entirely by the advance lever (403) which can be set in either of two positions. When the handle points straight out from the engine (See Figure IV) the spark is retarded for starting. When the handle points downward (See Figures IV and V) the spark is advanced for running.

Timing Adjustment:

When the magneto is installed on the engine, the proper timing is secured by locating the bracket which supports the trip finger, shown in Figure IV, at such a position on the push rod that the magneto trips at the end of the compression stroke when the advance lever (403) is in the starting position.

Engine users should not tamper with the setting of this bracket unless it is found that something has occurred to make the magneto trip otherwise than above.

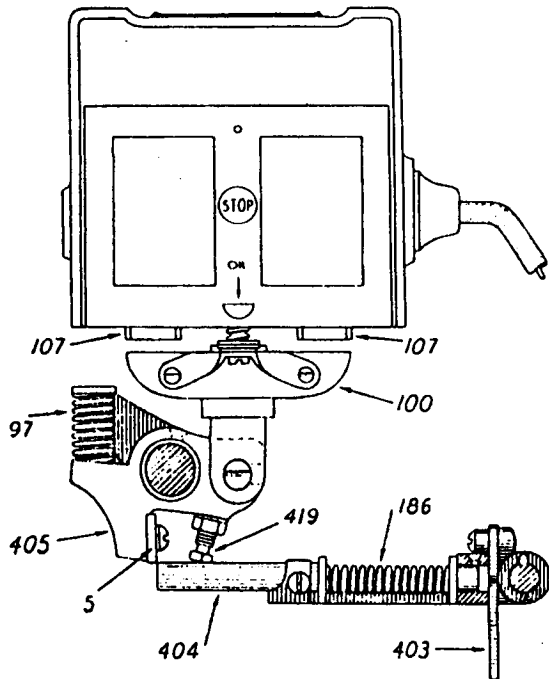


Fig. VI—Type No. 2 Drive: Rocker Arm Ready to Latch Oil

TYPE NO. 3 DRIVE

(See Figure VII)

The Type No. 3 drive is a combination drive, possessing some of the features of each of the No. 1 and No. 2 drives. This drive is operated from the valve push rod as in the Type No. 2 drive, except that there is no "latch-off" of the trip mechanism, and the drive spring (186), return spring (97), rocker arm (406) and trip shoulder (F) operate in exactly the same manner as in the Type No. 1 drive. The lock nut (E) is provided for locking the trip rod in position when timing the magneto as in the Type No. 1 drive.

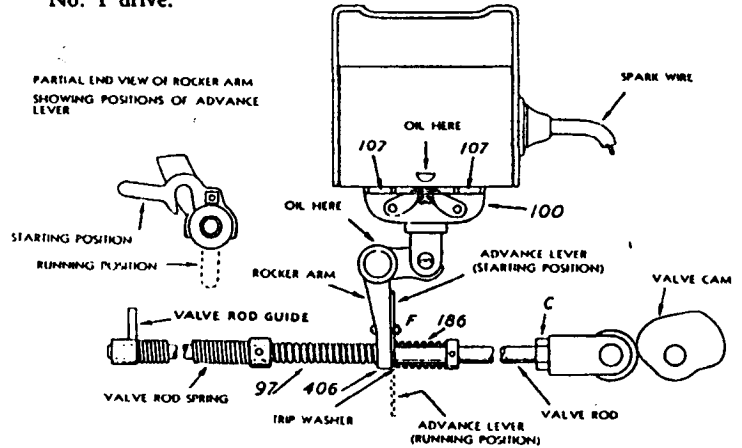


Fig. VII—Type No. 3 Drive

The spark advance is obtained by means of an advance lever attached to the rocker arm. To advance the spark the advance lever is pushed down into position between the rocker arm and the trip washer, thus the trip shoulder bottoms against the rocker arm earlier in the rotation of the cam.

The proper dimensions for the rocker arm and ignition rise on the cam will be determined by the Wico Electric Company for each particular type of engine.

CARE OF TYPE EK WICO MAGNETOS

The following simple instructions for the care of the Type EK WICO Magneto tell all that you need to know to keep it in perfect condition. Follow these instructions exactly and do not experiment.

The need for making adjustments or replacements will seldom, if ever, arise, but all parts of the magneto are so accessible that adjustments and replacements can easily be made when required.

MAGNETS

Do not remove the magnets (141) (See Figure VIII). You will instantly destroy their magnetism and gain nothing, because every part of the magneto that may conceivably require renewal can be replaced without removing the magnets and without weakening them.

MOVING PARTS

All moving parts (See Figure I) can be withdrawn from the magneto by lifting the armature (100) from its magnetic contact with the cores (107). This operation does not weaken the magnets. When replacing the armature make sure that the oil pad (266) slips over the guide rod (157).

REMOVAL OF COVERS

(See Figure D)

The covers of the magneto are held in place by the band (20) which is fastened by four screws (199), two at each end of the magneto. The removal of these screws allows the band to be lifted and the covers to be removed.

OILING

The Type EK Wico magneto will last for years if properly oiled, but if allowed to run dry its life will be very much shortened. The drive mechanism should be oiled each day the engine is used. When the engine is being used every day, oil the magneto at the marked oil-hole (See Figures III, VI and VII) once a week with the regular engine oil. If engine is not used every day oil the magneto less often.

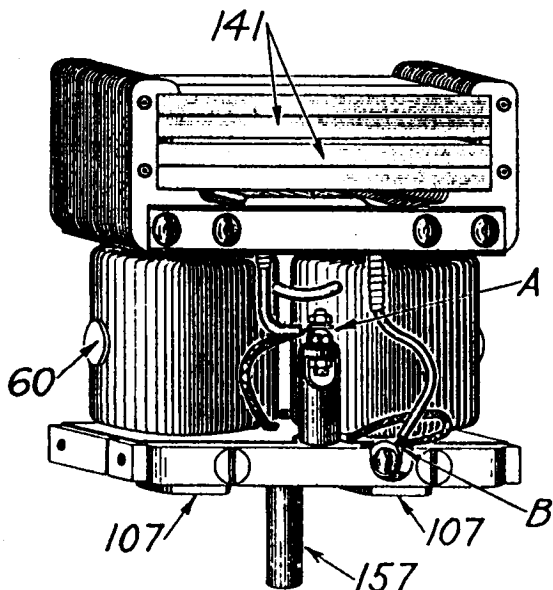


Fig. VIII—Covers Off, Moving Parts Removed
CLEANING

Where Type EK WICO Magnetos are to be used in the open, dirt and grit will collect on all of the exposed portions of the machine. This is to be expected and no decrease of the spark strength will be caused thereby. If, however, the working parts are kept clean their life will be prolonged. After many hours of

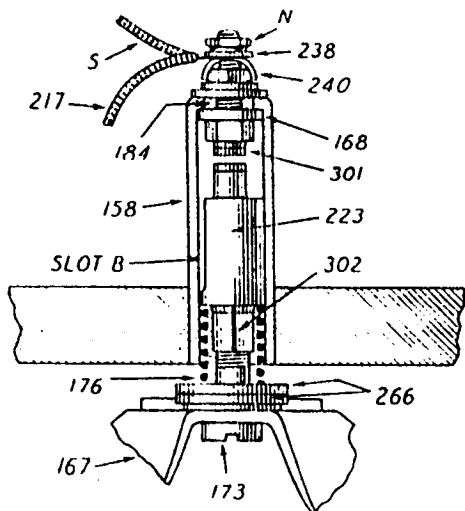


Fig. IX—Breaker Point Details

operation, if the magneto has been oiled frequently and heavily, oily muck may have collected inside the breaker point tube around the upper contact, and this may slightly weaken the spark. Remove the front cover, (See Removal of Covers) withdraw the moving parts (See Figure I) and with a clean rag and a small hardwood stick wipe off the oily muck wherever it has gathered.

ADJUSTMENTS

Breaker Points:
(See Figures II, V and IX)

The breaker point contacts are perfectly adjusted at the works of the Wico Electric Company, and no re-adjustment will be required

through thousands of hours of use, except when installing new contacts, at which time proceed as follows:—

On engines using the type No. 1 Eccentric and Strap Drive, the breaker point contacts (223) and (301) should just open when the armature (100) is about 1/16" away from the cores (107). On engines using the type No. 2 Push Rod Drive or the type No. 3 Combination Drive the breaker point contacts (223) and (301) should just open when the armature (100) is 3/32" away from the cores (107).

To adjust contacts, withdraw the moving parts and loosen the lock nut (302) (See Figure IX) on the stem of the breaker point. Replace the moving parts and insert metal strips either 1/16" or 3/32" thick (See above) between the armature and the face of the cores. Hold the contact (223) from turning by inserting a key in the slot (B) in its side. Turn the screw (173) until the contact (223) just fails to touch the contact (301). Then remove the armature from the magneto and set up the nut (302) tight against the lock washer and contact, taking care that the screw does not turn in the contact while doing this. Replace armature and check this adjustment.

As soon as adjustment has been made, be sure to remove the strips that you placed between armature and cores.

Latch-Off of Trip Finger:
(See Figures V and VI)

The rocker arm (406) of the Type No. 2 Drive is provided with a screw (419) and lock nut for adjusting the "latch-off" of the trip finger. This screw must be set so that the latch (404) will slip off the lip of the rocker arm just after the breaker point has been opened by the downward movement of the armature. If the screw is screwed OUT too far the breaker points will not open and the magneto will not spark.

If the screw is screwed IN too far the trip finger will drive the armature down too far and possibly break the return spring or the parts that hold it.

This adjustment will be made originally by the engine builder and should not require attention thereafter. **IT HAS NOTHING WHATEVER TO DO WITH THE TIMING OF THE SPARK.** If necessary the adjustment can be made as follows:—

Trip the armature (100) from its contact with the cores (107) and insert strips of metal 3/32" thick between the armature and the face of the cores. Move the push rod slowly until the latch of the trip finger reaches the rocker arm. The edge of the latch should then just engage the edge of the latch block (5) on the rocker arm, and the adjusting screw (419) should be bearing on the top side of the latch (See Figure VI), so that the least further movement of the push rod will cause the latch to slip off the latch block.

If the latch does not engage the latch block when the armature is set as above, the adjusting screw should be screwed in until the latch just engages. If the latch engages the latch block too much (more than 1/32"), unscrew the adjusting screw to give the proper engagement. Loosen the lock nut on the adjusting screw (419) before attempting to change adjustment and be sure to set it up tight after the adjustment has been made. Before attempting to start the engine, remove the metal strips which were placed between the armature and the cores.

REPLACEMENTS

Breaker Points:
(See Figure IX)

The best results will be obtained if both contacts are renewed whenever one of them fails. If either contact fails it may leave the other in such uneven shape as to spoil a new contact.

To replace moving contact (223):—Withdraw the armature group (See "Moving Parts"), loosen nut (302) and unscrew the contact (223) from the screw (173). Screw on the new contact, being careful to replace the lock washer between the contact and nut.

To replace fixed contact (301):—Remove the front cover and withdraw the moving parts (See Figure I). Disconnect condenser lead (S) and primary lead (217) from breaker point tube (158) (See Figure IX). Remove all nuts and washers from shank of the contact (301) and push contact down and out of tube. There

are two insulating washers (168 and 184) inside of tube and these should be removed also. New insulating washers (168 and 184) and new nuts will be supplied with each new fixed contact and these should always be used in replacements.

Place insulating washers on new contact and insert in tube, replace outside insulating washer, cover it with the lock washer and screw the nut up tight. Replace the two washers (240 and 238) and the nut (N). Insert the two leads and set the nut up tight. Replace the moving parts (be sure the felt pads 266 are in place) and check up the adjustment of breaker points as explained under "Adjustments." Be sure the nut 302 is set up tight.

Spark Wire:

(See Figure X)

The spark wire on the latest type of magneto is provided with a spring clip soldered to the end of the wire which snaps into the terminal block (30). To replace the spark wire it is only necessary to pull the old wire out of the terminal block and push in a new wire.

In some of the earlier magnetos the wire is provided with a threaded sleeve on the inner end, which screws into a shouldered brass washer in the terminal block (30). To replace this spark wire, it is only necessary to unscrew it and insert a new wire and screw it up tightly into place. Spark wires are provided by the manufacturer with the threaded sleeve in place on the end of the wire.

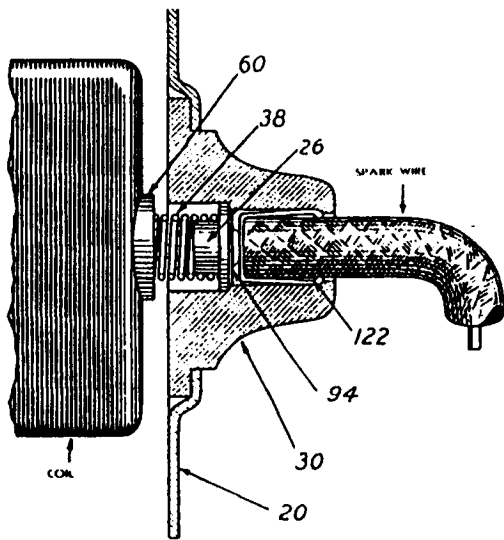


Fig. X—Section Showing Details of High Tension Terminal

Latch and Latch Block Edges:

(See Figures V and VI)

If the edge of latch (404) of Type No. 2 Drive becomes worn where it engages latch block (5), a fresh edge can be obtained by clamping the latch in a vise and pulling it out of the trip finger and giving it a quarter turn before replacing it. A fresh edge on the latch block (5) may be obtained by loosening the latch block screw and giving the latch block a quarter turn before replacing it. The screw is headed over at its outer end and the heading should be filed off before attempting to loosen the screw. Be sure to replace the lock washer and set screw up tight. The latch-off screw (419) should be removed to get at the latch block screw. After the latch block is replaced, the latch-off adjustment should be made as described under "Adjustments."

TROUBLE HUNTING

If ignition trouble is suspected disconnect spark wire from plug and observe spark between wire and engine frame, by holding end of wire about 1/8" from frame while cranking engine. If no spark is produced when magneto is operated, the trouble can be located by proceeding as follows:—

See that the armature (100) returns and makes a firm contact with the cores (107) after being tripped off.

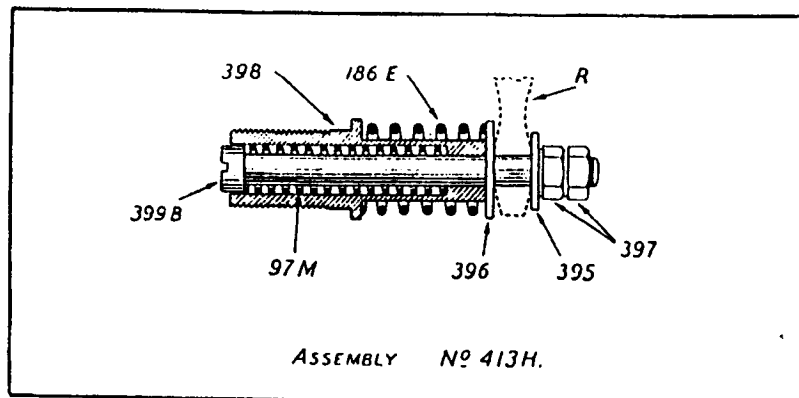
Failure to make firm contact indicates a weakened or broken return spring (97) or friction of moving parts caused by lack of oil. Remove any dirt from between armature and face of cores.

Turn the flywheel over slowly and see that when the armature (100) is tripped it snaps quickly away from the cores (107). Failure to do this indicates binding or friction or a broken drive spring (186).

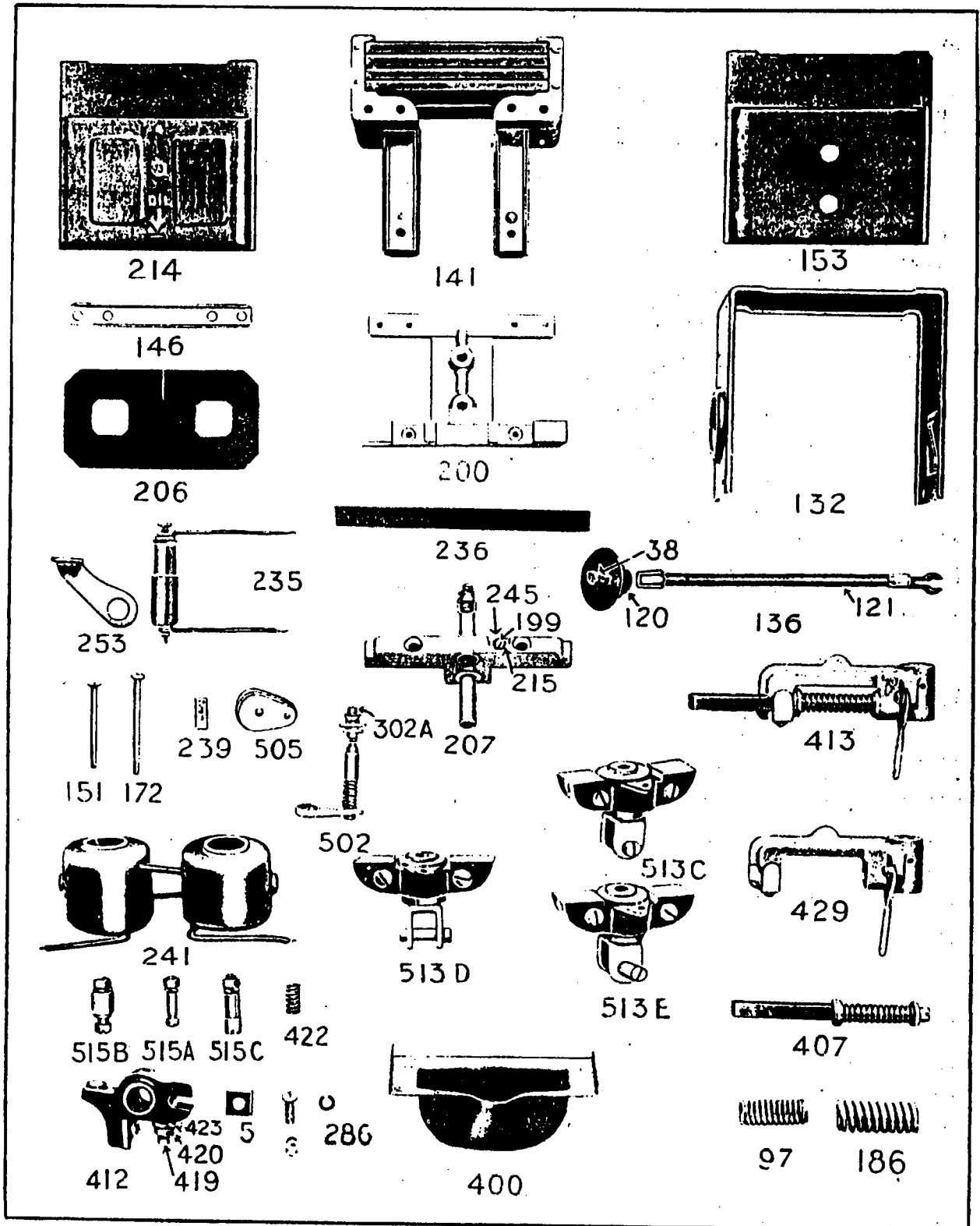
Remove the front cover and use a small wire or piece of wood to remove any dirt from the surfaces of the contacts (301 and 223) and from the insulating washer (168) (See Figure IX). See that electrical connections are tight at points A and B (See Figure VIII).

Check up the "latch-off" of the trip finger in Type No. 2 Drive and if wrong, make it right (See "Adjustments").

Drive 1A Trip Finger for Wico Type "E K" Magneto



Replacements: When renewing any parts of this trip finger adjust as follows: Assemble trip finger as shown in Assembly 413-H. When drive spring is fully compressed as shown, that is, with washer No. 396 in contact with tube No. 398, screw down nut No. 397 until spring 97-M is neither loose nor compressed. Then lock with second nut No. 397; or if there is only one nut, rivet end of rod to prevent loosening of this nut.



WICO ELECTRIC COMPANY, WEST SPRINGFIELD, MASSACHUSETTS, U. S. A.

NOTE: There are a few Special Armature Groups, Drive Springs, Return Springs and Trip Fingers in use that are not listed. These can be secured by giving the Engine make and model or the magneto number.

Symbol	Name	List Price
IKA-5	Latch Block	\$.35
IKA-6	Latch Block Screw	.05
M-32XA	Breaker Point Tube Insulating Washer	.05
IKA-33	Secondary Interlead	.05
IKC-38	Terminal Contact Spring (3/4" long)	.10
IKD-38	Terminal Contact Spring (3/8" long)	.05
M-52X	Breaker Point L. W.	.05
12-74F	Name Plate	.15
IKB-94	Ground Contact	.05
IKA-97	Return Spring Free Length 1 1/4" Trip Length 1 1/4" O.D. .630 I.D. .476	.35
IKC-97	Return Spring Free Length 1 1/4" Trip Length 1 1/4" O.D. .458 I.D. .310	.35
IKD-97	Return Spring Free Length 2 1/4" Trip Length 2 1/4" O.D. .474 I.D. .310	.35
IKE-97	Return Spring Free Length 1 3/4" Trip Length 1 1/2" O.D. .649 I.D. .458	.35
IKF-97	Return Spring Free Length 1 1/2" Trip Length 1 1/2" O.D. .664 I.D. .500	.45
IKG-97	Return Spring Free Length 2 1/4" Trip Length 2 1/4" O.D. .564 I.D. .400	.35
IKJ-97	Return Spring Free Length 1 3/4" Trip Length 1 3/4" O.D. .458 I.D. .310	.45
IKK-97	Return Spring Free Length 1 1/2" Trip Length 1 1/2" O.D. .390 I.D. .600	.35
IKL-97	Return Spring Free Length 2 1/4" Trip Length 2" O.D. .404 I.D. .631	.35
IKM-97	Return Spring Free Length 2" Trip Length 1 3/4" O.D. .320 I.D. .505	.35
IKO-97	Return Spring Free Length 1 1/2" Trip Length 1 1/2" O.D. .395 I.D. .605	.35
IKBX-103	Coil Group (right hand)	6.00
IKBX-104	Coil Group (left hand)	6.00
IKAX-107	Core Group	1.95
IKBX-120	Terminal Block Group (Screw Type)	.50
IKCX-120	Terminal Block Group (Push Type)	.80
IKDX-121	Lead Wire Group (Screw Type (12") (Use A-355))	.50
IKFX-121	Cable End (Screw Type)	.05
IKA-122	Cable End (Push Type)	.05
IKA-124	Secondary Interlead Tube	.05
IKAX-152	Side Band Group	1.60
IKFX-156	Terminal Group (IKDX-121 and IKBX-120) 6"	1.00
IKHX-156	Terminal Group (A-355 and IKCX-120) 6"	.95
12-X140C	Fixed Contact Group	1.00
IKCX-140	Fixed Contact Group (Use 12-X140C)	1.00
IKAX-141	Magnet and Core Group	9.25
IKAX-145	Deck only (no fixed contact)	1.95
IKA-146	Cross Arm	.15
IKA-151	Deck Screw	.05
IKA-152	Front Cover (Plain)	.55
IKC-152	Front Cover (No Oil Hole)	.55
IKA-153	Back Cover	.55
IKB-168	Breaker Point Insulating Washer (inside)	.05
IKA-172	Pole Yoke Screw	.05
IKC-173	Breaker Point Rod	.10
IKA-176	Breaker Point Spring	.10
IKB-177	Breaker Point Insulating Washer (outside)	.05
12-182	Name Plate Rivet (Use M-32XA)	.05
IKB-184	Drive Spring Free Length 1 1/4" Trip Length 1 1/4" O.D. .500 I.D. .270	.45
IKA-186	Drive Spring Free Length 1 3/4" Trip Length 1 3/4" O.D. .765 I.D. .460	.45
IKB-186	Drive Spring Free Length 1" Trip Length 3/4" O.D. .716 I.D. .462	.45
IKC-186	Drive Spring Free Length 1 1/2" Trip Length 1 1/2" O.D. .839 I.D. .585	.45
IKD-186	Drive Spring Free Length 1 3/4" Trip Length 1 3/4" O.D. 1.01 I.D. .640	.45
IKE-186	Drive Spring Free Length 1 1/2" Trip Length 1 1/2" O.D. .700 I.D. .500	.45
IKF-186	Drive Spring Free Length 1 1/4" Trip Length 1 1/4" O.D. .717 I.D. .462	.45
IKH-186	Ground Connection Screw	.05
IKA-199	Side Band Screw	.05

Symbol	Name	List Price
A-199X	Magneto Buffer Spring (Witte 2, 3, 4, 6 and 8 H.P.)	.40
A-199XA	Magneto Buffer Spring (Witte 15, 20 and 30 H.P.)	.40
IKA-200	Assembly Plate	1.90
IKD-206	Coil Gasket	.05
12-X207	Deck Half Group (includes fixed br. point)	3.15
IKB-208	Breaker Point Contact Washer	.05
IKIFX-214	Front Cover Gr. (push button switch)	.90
IKGX-214	Front Cover Gr. (push button switch, no oil hole)	.60
IKD-223	Breaker Point Movable Contact (Use 12-223D)	.60
12-223D	Breaker Point Movable Contact	.60
12-X235	Condenser Group (Use X6194)	.05
IKA-236	Deck Gasket	.05
IKB-238	Breaker Point Lead Clamping Washer (Use 2965)	.05
IKA-239	Coil Wedge	.05
IKA-240	Breaker Point Lead Clamp	.05
IKBX-241	Coil Group IKBX-103 and IKBX-104 with Connection Wires	12.30
IKA-242	Drive Spring Adjusting Washer (3/4" thick)	.05
IKB-242	Drive Spring Adjusting Washer (1/2" thick)	.05
IKB-245	Ground Lead Clamp Washer	.05
IKB-253	Return Spring Support	.10
IKC-253	Return Spring Support (for armature yoke (fork special))	.10
IKC-257	Breaker Point Spring Washer	.05
12-258B	Armature Fork Bolt (Standard)	.10
12-258C	Armature Fork Bolt (long head)	.45
12-258E	Armature Fork Bolt (1 1/2" long)	.25
IKB-266	Breaker Point Lubricating Strip	.05
12-284C	Armature Fork Bolt Nut Standard	.05
IKA-285	Armature Fork Bolt Bushing Standard	.20
IKB-286	Latch Block Screw Lock Washer	.05
12-X296D	Breaker Point Moving Group	1.70
12-302	Breaker Point Nut (3/8" thick)	.05
12-302C	Breaker Point Nut (1/2" thick)	.05
*A-355	Lead Wire Group (Push Type (12"))	.50
IKA-362	Armature Fork Bolt Lock Washer	.05
IKA-363	Armature Fork Bearing Block	.50
IKA-374	Trip Finger Clip	.05
IKA-376	Trip Finger Clip Screw	.05
IKA-387	Ground Connection Screw L. W.	.05
IKA-402	Latch Rod	.25
IKC-403	Advance Lever	.05
IKA-406	Rocker Arm	1.60
IKAX-407	Latch Group	.95
IKA-410	Buffer Spring (Novo)	.35
IKAX-412	Rocker Arm Group	1.95
IKBX-412	Rocker Arm Group (Use IKAX-412)	4.35
IKCX-413	Trip Finger Group	4.75
IKGX-413	Trip Finger Group (Barrel Type)	4.75
IKA-415	Drive Spring Washer	.05
IKA-419	Latch-off Screw	.10
IKB-419	Latch-off Screw (Use IKA-419)	.10
IKA-420	Latch-off Screw Nut	.10
IKA-422	Trip Finger Support Spring	.05
IKA-423	Latch-off Screw Lock Washer	.05
IKCX-429	Trip Finger Frame Group	3.10
IKA-430	Ground Spring Washer	.05
12-X502D	Breaker Point Set (replacement)	2.75
IKBX-505	Breaker Point Lubricating Felts	.15
IKAX-511	Set of Coil Connecting Wires	.25
IKCX-513	Armature Group	3.75
IKDX-513	Armature Group	4.00
IKEX-513	Armature Group	4.00
IKGX-513	Armature Group	4.00
IKAX-515	Armature Fork Bolt Group	.35
IKBX-515	Armature Fork Bolt Group	.95
IKCX-515	Armature Fork Bolt Group	.75
IKB-518	Breaker Point Ground Button	.05
IKA-519	Breaker Point Ground Spring	.05
IKA-520	Breaker Point Ground Spring Rivet	.05
2965	Breaker Point Lead Clamp Washer	.05
X6494	Condenser Group	1.95

* Add \$.01 for each additional inch.

Prices effective as of January 1, 1954 -- subject to change without notice.

TRADE **WICO** MARK

WICO TYPE EK MAGNETO

These instructions state briefly how to take care of the Type EK Magneto, and state how to remedy all probable troubles.

If unusual circumstances arise, reference should be made to the Type EK Instruction Book, which gives more complete information about the Type EK Magneto.

OILING

OIL MAGNETO EVERY WORKING DAY with the same oil that is used in the engine cylinder. Special oil is not required. There is little danger from excessive oiling.

CLEANING

A magneto used constantly in the open will in time become caked with dirt and grease. This condition will cause no decrease in spark strength. If, however, the working parts are kept clean, the life of the magneto will be prolonged. Occasionally remove the front cover of the magneto and also the moving parts and clean around the breaker points with a clean rag and a small hardwood stick. Keep points of contact between the armature and the cores clean by wiping with a clean rag.

MAGNETS

DO NOT REMOVE THE MAGNETS. It is unlikely the magnets will ever need re-charging unless they are removed from the machine.

TROUBLE HUNTING

If ignition trouble is suspected, disconnect spark wire from plug and observe spark between wire and engine frame by holding end of wire about 1/4" from some spot of bare metal on engine while cranking. If good spark is produced trouble is probably a faulty spark plug.

If no spark is produced, see that the armature (100) (see Figure) returns and makes firm contact with the cores (107) after being tripped off. Failure to do so indicates friction of moving parts caused by lack of oil. Remove any dirt from between armature and cores. Turn the flywheel over slowly until the armature (100) is tripped from the cores (107). If the armature does not snap quickly away, or does not open 3/32" to 1/4", it indicates binding, friction, due to lack of oil, or a broken drive spring.

Check up the "latch-off" of the trip finger, as follows:—Trip the armature from the cores and insert a strip of metal 3/32" thick between them. Move the valve rod slowly until the latch (404) reaches the latch block (5) as shown in figure. The latch should engage the latch block about 1/32". If it engages more or less than this, turn the adjusting screw (419) out or in until it engages the proper amount. Loosen the lock nut on the adjusting screw (419) before attempting to change adjustment and be sure to set it up tight after the adjustment has been made. Before attempting to start the engine, remove the metal strip that you placed between the armature and the cores.

MOVING PARTS

All moving parts can be withdrawn from the magneto by lifting the armature (100) from its magnetic contact with the cores (107). This operation does not weaken the contact with the cores (107). When replacing the armature make sure that the felt oil pad slips over the guide rod; and also see that the breaker point contacts are clean, and that there is a good film of oil on the side of the body and spring.

REMOVAL OF COVERS

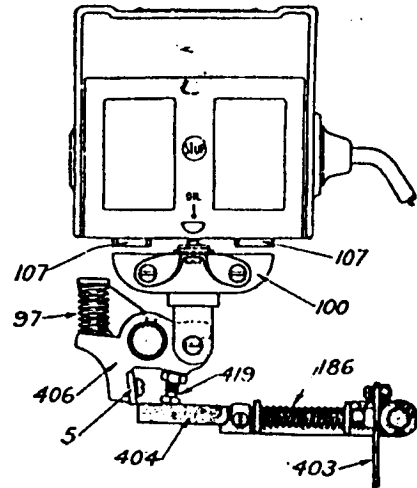
The covers of the magneto are held in place by the band which is fastened by four screws, two at each end of the magneto. The removal of these screws allows the band to be lifted and the covers to be removed.

WARRANTY

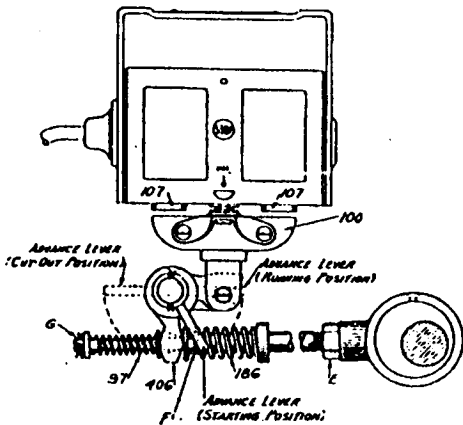
We warrant each piece of apparatus manufactured by us to be free from defects in material and workmanship under normal use and service. Our obligation under this warranty is limited to the furnishing of any part of said apparatus which shall within a period of ninety (90) days after delivery to the original purchaser, be returned either to one of our authorized service stations, or to the factory, transportation charges prepaid, and which, upon examination by one of our authorized representatives, shall disclose to our satisfaction to have been thus defective.

Any magneto or other piece of apparatus shall not be considered to have been under normal use and service if it appears to have been subjected to misuse, abuse, neglect or accident, or if it has been repaired or altered outside of our factory so as, in our judgment, to affect its stability or reliability, or if any part not of Wico manufacture has been substituted for a part of Wico manufacture.

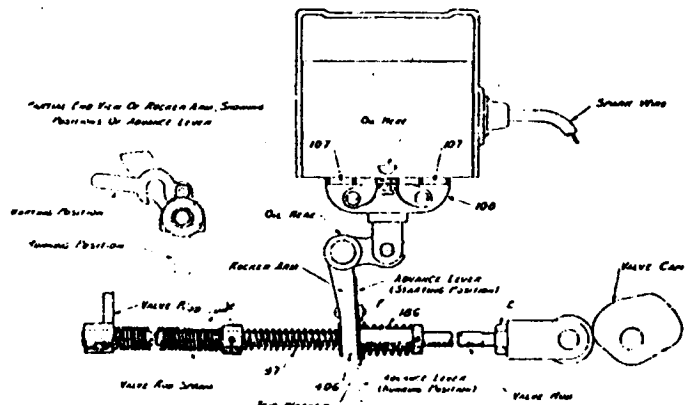
This warranty is in lieu of all other warranties, either expressed or implied; and we do not authorize any person or persons to assume for us any other liability in connection with the sale of our equipment; nor are we responsible for any liability for any damage or injury to any person or part resulting directly or indirectly from design, material, workmanship or installation of any of our apparatus.



Type No. 2 Drive; Rocker Arm Ready to Latch Off



Type No. 1 Drive; Armature Just Tripped, Advance Lever Retarded



Type No. 3 Drive

WICO ELECTRIC COMPANY, SPRINGFIELD, MASSACHUSETTS, U. S. A.

FACTORY
Wico Electric Company
 Springfield, Mass.

LONDON, ENG.
 Wico Electric Company
 Wadsworth Road; Perivale
 Greenford, Middlesex, Eng.

Sales and Service

Sales

TULSA, OKLAHOMA
 L. F. Smith, Southwest District Manager
 115 West 8th Street

CHICAGO, ILLINOIS
 C. G. Waters
 160 E. Illinois Street

OSAKA, JAPAN
 Nippon Wico Magneto Sales Co.
 15 Tosabori-Furumachi, Nishi-ku

LOS ANGELES, CALIF.
 V. T. Chevalier, Western District Manager
 1611 So. Hope Street

Export Sales
WICO ELECTRIC COMPANY
 36 Pearl St., New York City, U. S. A.

DISTRIBUTORS SALES AND SERVICE

NOTE: This list includes only central stations. A complete directory of all authorized Wico Service Stations will be supplied on request.

Alabama	Birmingham	Birmingham Electric Supply Co., 23rd St. & Ave. B	Tennessee	Knoxville	R. T. Clapp Co., 401 No. Broadway
Arizona	Phoenix	Blond Supply Co., 1st St. & Ave. C		Memphis	Automotive Electric Service Company, 1095 Union St.
Arkansas	El Dorado	Magneto Equipment Co., 477 E. Hillboro St.		Nashville	Automotive Electric Service Co., S.W. Cor. 9th Ave. & Church St.
California	Los Angeles	Electric Equipment Company, 111 So. Hope St.		Amarillo	E. S. Gower Electric, 700 Van Buren St.
	San Francisco	Auto Electric & Supply Co., 343 Van Ness Ave.	Texas	Dallas	Beard & Stone Electric Co., 2131 Byron St.
	Denver	Spartan Electric Company, 43 1/2 16th Ave.		El Paso	Bandel Battery & Magneto Co., 423 Texas St.
Colorado	Providence, R.I.	A & J Auto Equipment, 43 Broadway		Fort Worth	Generator Service Company, 1115 Commerce St.
Connecticut	Miami	Electric Equipment Co., 42 N.W. 4th St.		Houston	Beard & Stone Electric Co., Inc., Mikan at Park Ave.
Florida	Tampa	Spencer Auto Electric Co., 607 Cass St.		Kilgore	Magneto Sales & Service Co.
	West Palm Beach	Sub-Lite's Automotive Electrical Service Co., First and Olive Sts.	Utah	San Antonio	E. X. Callahan, 419 425 N. Flores St.
	Atlanta	Auto Electric & Magneto Co., 477 Spring St., N. W.	Virginia	Salt Lake City	Motor Equipment Company, 609 South State St.
Georgia	Butte	Oakley Electric Co., Heyworth & Kiefer Sts.		Richmond	Richmond Battery & Ignition Co., 1519 West Broad St.
Illinois	Chicago	Blond Auto Electric Co., 2111 Indiana Ave.	Washington	Richmond	W. B. Clements, Inc., 221 West Lock Ave.
	Indianapolis	Callaway Auto Electric Co., 480 N. Capitol Ave.		Roosevelt	Pacific Magneto Service, Inc., 2719 First Ave. S.
Indiana	Wabash	C. E. Gower Electric Co., 201 S. Tapscott Ave.	West Virginia	Charleston	McCadden Ignition, 108 Broad St.
Iowa	Keosauqua	Keosauqua Ignition Co., Rose St. at Vanu	Wisconsin	Milwaukee	Wisconsin Magneto Co., 218 N. Broadway
Kentucky	Louisville	Anthony Cowan & Co., Inc., 421 W. Main St.			AUSTRALIA
	New Orleans	John M. Wilbur, 750 St. Charles St.			Carl A. Elliott, Cr. Kent & Market Sts.
Louisiana	Shreveport	Magneto Sales & Service Co., 817 Louisiana Ave.	Australia	Sydney	
	Baltimore	Parks & Hill Automotive Corp., 1041 Calhoun St.	Alberta	Calgary	R. Hunter, 109 Eleventh Ave. W.
Maryland	Boston	A & J Auto Equipment Company, 5 Brighton Ave.		Edmonton	Smith Battery & Auto Elec.
Massachusetts	Cambridge	A. W. Jackson, 152 Dwight St.	British Columbia	Vancouver	Jeffrey & Jeffrey, Ltd., 728 Homer St.
	Detroit	Auto Elec. & Service Co., 90 1/2 Michigan	Manitoba	Winnipeg	Beaton Auto Electric Co., Ltd., 176 Fort St.
Michigan	Minneapolis	Richard I. Reed, Co., Inc., 17 E. Cornell	Ontario	Toronto	A. Gross & Co., 45 Elm St.
Minnesota	Kansas City	P. G. Gower Electric Co., 1619 Wynona St.	Quebec	Montreal	International Electric Co., Ltd., 1037 Beaubien St.
Missouri	St. Louis	Merkel Auto Elec. Co., Inc., 3134 Washington Blvd.	Saskatchewan	Regina	Elek. Motor Service
	Omaha	Carl W. Anderson, Inc., 16th and Jones St.		Saskatoon	Danison Auto Electric Co., 23rd St. and Ave. A
Nebraska	Newark	Henry's, Inc., 276 Hill St.	Cuba	Habana	
New Jersey	Buffalo	Peter Heitrich, 1000 Elliott St.			CUBA
New York	Long Island City	Donner Bros., Inc., 31 Northern Blvd.			Electrical Equipment Co. of Cuba, Avenida de Italia 29
	Rochester	C. L. Hammerman Corp., 18 N. Union St.	Ireland	Dublin	
	Troy	Dalich Electric Service, 204 Fourth St.			IRELAND
North Carolina	Charlotte	Cardinal Iron & Wood Co., 306 No. Graham St.			Hendon Bros., 37 Upper Donnick St., Broadstone
Ohio	Cincinnati	I. W. Harris, 43 W. 9th Ave.	Mexico	D. F. Mexico	
	Cleveland	Industrial Equipment Parts, Inc., 1053 East 61st St.			MEXICO
	Toledo	The McCrossin Manufacturing Co., 25 30 17th St.			Sommer, Herrmann, Y Cia., Sucrs. 3A Calle de La Palma, Num. 35, Ajacubato 299
Oklahoma	Oklahoma City	Ampergen Electric Ignition Co., 725 N. Broadway	Philippine Islands	Manila	PHILIPPINE ISLANDS
	Tulsa	Waco Electric Co., 115 West 8th St.			Caro Electrical Service, 110 Pasha Faura St.
	Yukon	Magneto Ignition, 701 W. Fifth Ave.	Porto Rico	San Juan	PORTO RICO
Oregon	Portland	Ignition Equipment Co., 1111 So. E. Grand Ave.			Nicardo Davila, P. O. Box 475
Pennsylvania	Reading	Smith Auto Elec. Corp., Baylark and Davis Sts.	Roumania	Bucarest	ROUMANIA
	Oil City	Gay Co. Smith's Auto Electric & Magneto House, 13 E. Front St.			Prospusit Electric
	Phila. Inlet	I. W. Harris, Inc., 224 North Broad St.	South Africa	Durban	SOUTH AFRICA
	Pittsburgh	Ignition Equipment Co., 2530 N. Blvd. East		Blombosfontein	Messia, J. M. Moir
	Providence	Continental Ignition Co., 512 E. Gen. Robinson St. N.E.	Orange Free State	Cape Town	Motor Units Pty. Ltd.
Rhode Island	Charleston	A & J Auto Equipment, 44 Broadway		Johannesburg	Thos. Barlow & Sons, Ltd.
South Carolina	Greenville	Chas. L. Reed & Sons, Co., Inc., 280 Market St.	Argentina	Buenos Aires	SOUTH AMERICA
		Bonary & Clemente Co., 209 1/4 Bancroft St.			Amiko Hamish, Rouch 1843, Lima Calle y Comercio



Form S20-SM Printed in U.S.A.

These prices supersede all prices previously issued and are subject to change without notice.