

Magneto Ignition

ADDS POWER

The Magneto is the only dependable self-contained unit which produces high-tension sparks for ignition—independent of battery or coil.

*Eisemann Service Stations
are in all Principal
Automobile Centers.
Send for List.*



BROOKLYN, N. Y.

DETROIT, MICH.

CHICAGO, ILL.

EISEMANN



MAGNETO TYPE G4

2nd Edition

for

*Four
Cylinder
Engines*

Instructions
for
Installing

?

DO YOU KNOW

That too much oil is positively the most frequent cause of magneto trouble.

That oil on the expensive platinum breaker points will cause them to burn away in less than one-quarter of their normal mileage.

That the most effective thing you can do to keep your magneto on the job is to carefully read, *and follow*, the oiling instructions on page 6.

Do not over-oil or allow your magneto to become very oily.

?



Type G4-II Edit.

with

**Fixed or Variable
Spark Control**



*General Offices and Factory
Brooklyn, N. Y.*

Branches

429 Willis Avenue, W. - Detroit, Mich.
2005 So. Michigan Avenue Chicago, Ill.

Service Stations in all Principal Automobile Centers

LIST UPON REQUEST

Type "G4-II Edition" Magneto

Difference Between I and II Edition—Since this booklet is intended more as an instruction book than as a catalog, no general description will be attempted beyond a brief explanation of the fundamental differences between the "G-4—I Edit." and the "G4—II Edit.," to which latter this booklet applies. There are only two essential points of divergence, *neither of which affects the interchangeability of the magnetos on the engine.*

The flat spring style of contact breaker used in the I—Edit. is replaced by a "rocker-arm" type, of slightly more rugged construction, in which the arm is actuated by riding over two flat steel cams, as may be seen in Fig. 1 below.

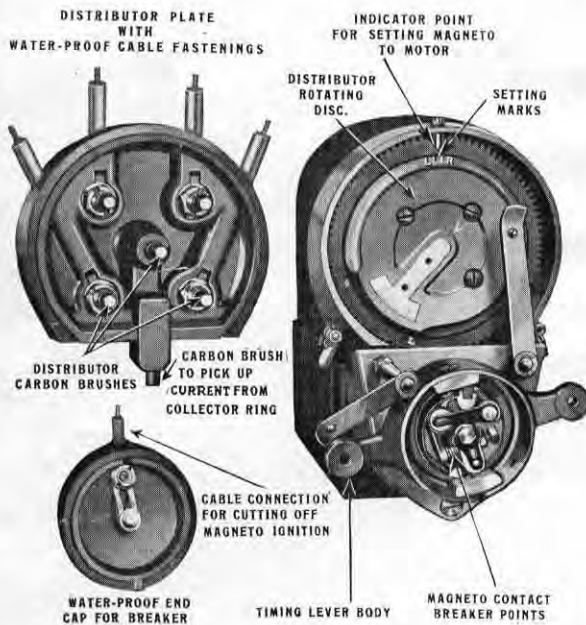


Fig. 1

The other chief difference is in the design of the frame, or housing, which is of a new unit-cast construction, whereas the I—Edit. housing was built up of several parts screwed together. This unit-casting has the advantage that it is extremely rigid, thus

positively eliminating all danger of loosened screws or end plates, etc., due to vibration or accidental twisting. Another beneficial result from the absence of any joints is that it forms an absolutely water, oil and dust tight protection for the vital elements, such as the winding and the condenser. Further, since it can now be bored out and machined all in one piece, and because of its rigidity, it is possible to hold more closely the running clearance between the armature and the poles of the magnets. This tends to give increased magnetic efficiency and, as a result, a much hotter spark.

Installation

Rotation and Speed—Magnetos are made to turn in either direction, and *care must be taken when ordering to state the correct rotation as seen from the driving end of the magneto.* If no definite information is given about the direction, it will be taken for granted that it is required clockwise, and the apparatus corresponding will be sent. The direction of rotation is marked with an arrow on the driving end. The drive must be positive, either by gears or chain. We recommend the use of the former in conjunction with a flexible coupling.

As two sparks occur in each revolution of the armature, the magneto must rotate as follows:

4 Cylinder, Four-Cycle Engines—**Engine Speed.**

Timing to the Engine—Variable Spark—As the spark occurs when the primary circuit is broken by the opening of the platinum contacts on the breaker mechanism, it is necessary that the magneto should be so timed that at full retard position of the timing lever body the platinum contacts just begin to open when the respective piston of the engine has reached its highest point on the compression stroke. Turn engine by hand until piston of No. 1 cylinder is on dead center (firing point), remove the distributor plate from the magneto and turn the driving shaft until the setting mark on the distributor disc is in line with the setting screw as shown in Fig. 1. (For magneto rotating clockwise,

use setting mark "R," and for anti-clockwise, use mark "L.") With the armature in this position, the platinum contacts are just opening, and the metal insert of the distributor disc is in connection with carbon for No. 1 cylinder. The driving medium must now be fixed to the armature shaft without disturbing the position of the latter, and the cables connected to the spark plugs. (See Fig. 2.)

Timing to the Engine—Fixed Spark—In fixed ignition where the timing of the spark never varies, the object in view is to find a medium between the occurrence of the spark at full retard and full advance. It must not occur too late, as the engine will overheat and lose power, nor occur too early, as the engine will kick back when cranking, or knock when laboring hard, such as hill climbing. It is evident, therefore, that the spark must occur before the piston reaches dead center, and as some engines, for certain reasons, can stand more advance than others, there is no pre-determined rule for the timing which would apply to all engines. It is, therefore, advisable to find out from the maker of the engine at what distance before the piston reaches dead center the spark should occur for fixed ignition.

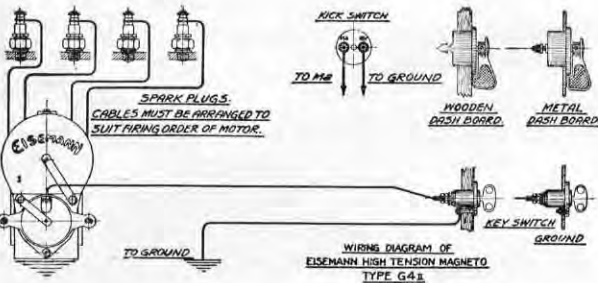


Fig. 2

With piston in position as mentioned above, the setting mark on the distributor should then be brought in line with the setting screw, and the driving medium (either coupling or gear) should be fixed in this position.

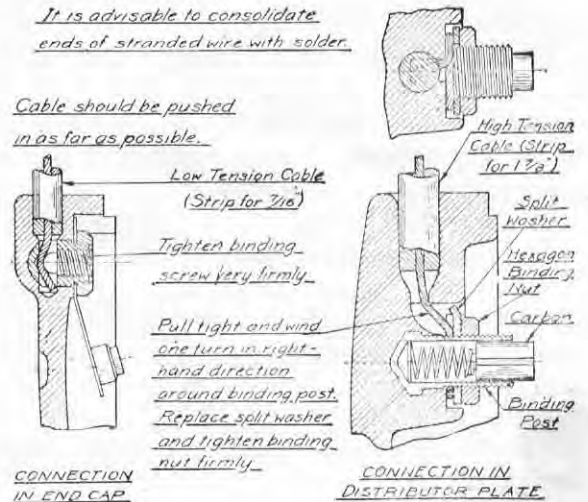


Fig. 3

Wiring—The attaching of the cables to the spark plugs must be made in accordance with the firing order of the engine. For connection between switch and magneto, see Fig. 2. The proper fastening of the cables is of great importance, in order to prevent water making a short-circuit between the connections. Fig. 3 illustrates how these cables should be attached. This internal method of attaching the cables is another of our exclusive features and makes a water-tight and solid connection.



Maintenance

Oiling—It is impossible to place too much importance on cautious oiling of the magneto. Hence, remember that the following instructions are of vital importance to the efficiency of the instrument in general and to the life of the contact points in particular.

For lubricating the ball bearing at the breaker end, two oil wells, with hinged covers are provided, one on each side of the housing, just back of the timing arm. Both of these lead to the same bearing and only the one which is more accessible should be used. This well *should positively not receive more than one drop every 1,000 miles or so.* Good, *clean* cylinder oil will do, but **do not over-oil at this point** if you wish to avoid trouble.

At the driving end two oil holes will be found. The larger one leads to the plain bearing carrying the distributor shaft and should be given about 15 drops every 1,000 miles or so. The smaller hole leads to the ball bearing at the driving end, and should receive 4 or 5 drops in the same distance.

Cleaning—The contact points of the breaker mechanism and, in fact, the entire breaker itself, should be thoroughly cleaned with gasoline as often as they accumulate even a trace of oil or dirt. The distributor rotating disc, the carbon brushes and the collector ring should likewise be cleaned occasionally with a soft cloth moistened with gasoline. For obvious reasons all the parts should be allowed to dry before attempting to run.

Cables—In order to obtain the best results the cables should be at once replaced if they show signs of cracking or wearing.

Contact Points—The contact points should be inspected occasionally to see that they are clean and flat, and also that the maximum gap between the points is in accordance with the gauge on the special adjusting wrench, or about 0.012" to 0.014".

Spare Parts—A list of spare parts and illustrations of same are shown on pages 10 and 11. After a year of normal service it is advisable to carry in reserve a few carbon brushes for the distributor plate, as well as an extra set of contact points.

Locating Troubles and Remedying Them

If the engine misfires or refuses to start, and the ignition is suspected, it should first be ascertained whether the trouble lies in the magneto or in the spark plugs. The latter should be examined first, as they are the most frequent cause of trouble.

Spark Plugs—If the missing is in one cylinder only or in different cylinders, the corresponding spark plugs should be examined to see that the gap is not too large. This gap between the electrodes should be between 1/64 and 1/32 of an inch. In no instance should it exceed 1/32 of an inch. On the other hand, a gap less than 1/64 of an inch is liable to cause missing at low throttle opening. Also, the spark plug may be short-circuited through carbon or oil, or the insulation may be cracked. Cleaning with gasoline or replacing is the remedy.

Contact Points—Clean same with gasoline until the contact surface appears quite white or, if pitted, use a fine file—but very carefully—so that the surfaces remain square to each other. For this purpose a special file may be procured from us at nominal cost. The correct gap of the contact points is 12/1000" (.3 m/m). As these contacts wear away in time, they should be regulated by giving the adjustable screw a forward turn, care being taken to *securely tighten the lock nut.* This can be accomplished, without removing the timing lever or breaker mechanism, by means of the combination wrench which is furnished with each magneto and which includes a gauge for the regulation of the gap between the contacts. It is very essential that this gauge be used as the gap is very deceptive when judged by eye alone.

If the contact riveted to the rocker-arm, or that of the adjustable screw should be worn down entirely, it would necessitate a change of either or both. When the adjustable screw is replaced or adjusted, care must be taken that the lock nut is securely tightened in place.

Wiring—The wiring should be carefully examined and checked in accordance with the firing order of the engine. If cables are cracked or chafed, they should be replaced. All connections must be kept clean and tight.

Testing Magneto—If, after following these instructions, the engine still refuses to start, the magneto should then be tested by removing the distributor plate and resting a screw-driver on the magneto housing, holding same about $\frac{1}{8}$ " from the collector ring. Then, if upon rotating the armature, a spark jumps across the $\frac{1}{8}$ " gap, it shows that the trouble does not lie in the magneto, but in some other part of the engine, possibly in the carburetor.

But if a spark DOES NOT jump across the $\frac{1}{8}$ " gap previously mentioned, the magneto should be sent to the nearest EISEMANN branch or service station to be examined by experts.

Magnets—A re-magnetization of the magnets will only be necessary if these have been taken away from the apparatus and allowed to remain a long time without both ends of the magnets being connected with a piece of soft iron. The same thing occurs if the armature is taken out of the pole pieces without a conducting rod of iron being held across both poles. This piece must remain on the poles until the armature is again between the pole pieces.



Cut-Off Switches

(Dimensions on Request)



Kick Type

An Attractive, yet Rugged Switch for
Use on Dash or Seat Riser.

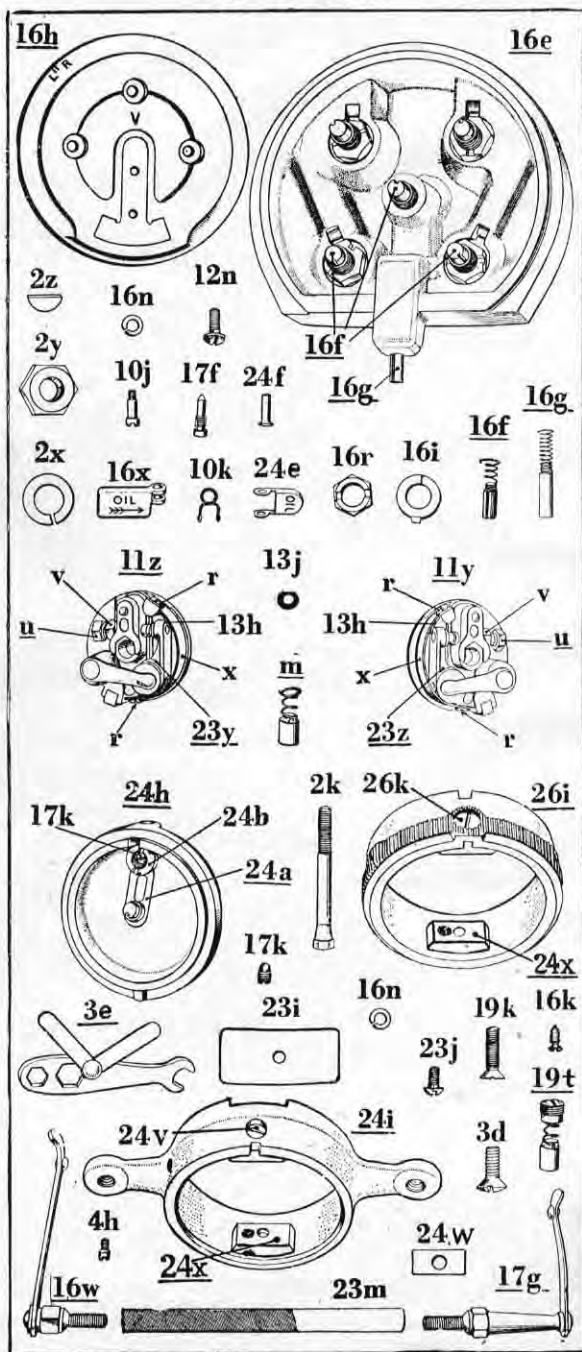
Can be Worked by Hand or Foot.
Removable Handle.



Key Type

A Neat and Convenient Style of Switch.
Two Removable Pocket Keys.
Key Non-Losable in "Off" Position.

Illustration of Spare Parts
Type G4 - II Edit.



List of Spare Parts

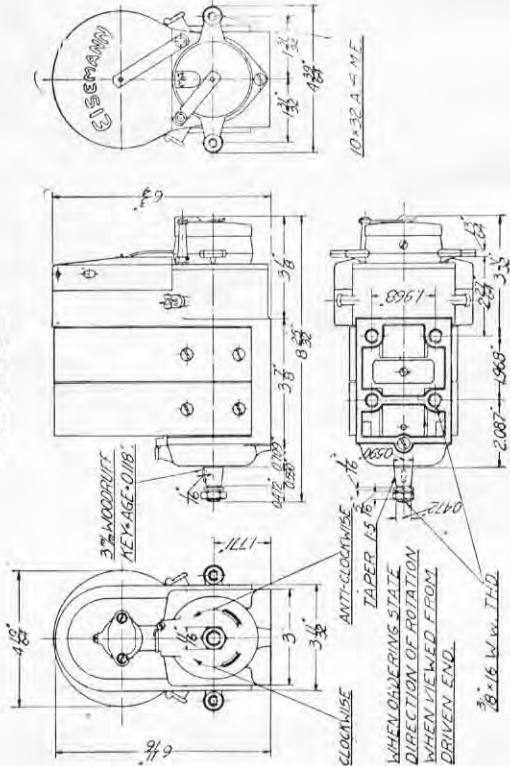
Type G4 - II Edit.

Index Letter	Ordering No.	DESCRIPTION
m	9132	Ground Carbon, with Spring, Complete, for Magneto Breaker.
r	6566	Fastening Screw for Each End of "x".
u	6809	Platinum Contact Screw for Magneto Breaker.
v	4191	Lock Nut for "u".
x	13539	Long Flat Spring for Magneto Breaker.
2 k	3790	Fastening Screw for Complete Magneto Breaker.
2 x	13047	Split Washer for Driving Shaft.
2 y	6525	Hexagon Nut for Driving Shaft.
2 z	6516	Woodruff Key ($\frac{1}{8}$ "-Age"), for Driving Shaft.
3 d	6607	Fastening Screw for Magnets.
3 e	9018	Wrench with Contact and Spark Plug Gauges, Complete.
4 h	4578	Timing Lever Stop Screw (on End Plate, Breaker End).
10 j	6603	Retaining Screw for "16x".
10 k	4390	Spring for "16x" and "24e".
11 y	13576	Breaker, Complete, with <i>Platinum</i> Contacts and Ground Carbon (Anti-Clockwise Only).
11 z	13575	Breaker, Complete, with <i>Platinum</i> Contacts and Ground Carbon (Clockwise Only).
12 n	6537	Fastening Screw for Distributor Rotating Disc.
13 h	6567	Reinforcing Spring for Each End of "x".
13 j	7244	Spacing Washer for Breaker Rocker-Arm (Underneath Springs).
16 e	9464	Distributor Plate, Complete, with Carbon Brushes.
16 f	9462	Carbon with Spring, Complete, for Distributor Plate (at Rotating Disc.)
16 g	9463	Carbon with Spring, Complete, for Distributor Plate (at Collector Ring).
16 h	9484	Distributor Rotating Disc (For Variable Timing Only).
16 h	9485	Distributor Rotating Disc (For Fixed Timing Only).
16 i	9414	Split Washer for Distributor Plate.
16 k	9372	Safety Spark Gap Screw, 3 m/m Thread, Old Style (see also "17f").
16 n	9407	Split Washer for "12n".
16 r	9415	Hexagon Binding Nut for Distributor Plate.
16 w	13424	Holding Stud with Spring for Distributor Plate.
16 x	9398	Oil Hole Cover on Driving End.
17 f	9408	Magneto Setting Screw and 4m/m Safety Spark Gap Screw, New Style, (see also "16k").
17 g	13560	Holding Stud with Spring, Complete, for End Cap.
17 k	9437	Connection Screw for Top of End Cap.
19 k	5015	Fastening Screw, for Triangular End Plate (on Breaker End).
19 t	9769	Ground Carbon in Base of Housing, Complete with Spring and Retaining Screw.

THE EISEMANN MAGNETO

Index Letter	Ordering No.	DESCRIPTION
23 i	13429	Cover Plate for Inspection Hole in Base of Housing.
23 j	9443	Fastening Screw for "23i".
23 m	13155	File for Smoothing Contact Points.
23 y	13536	Breaker Rocker-Arm, Complete, with <i>Platinum</i> Contact (Clockwise Only).
23 z	13537	Breaker Rocker-Arm, Complete, with <i>Platinum</i> Contact (Anti-Clockwise Only).
24 a	13526	Short-Circuiting Spring for End Cap, Complete, with Brush.
24 b	13523	Round Nut for Fastening "24a".
24 e	13692	Hinged Oil Cover for Each Side of Housing, near Breaker End.
24 f	13693	Expanding Rivet for Retaining "24e".
24 h	13525	End Cap, Complete, with Short-Circuiting Brush.
24 i	13707	Timing Lever, Complete, with Flat Cams (Variable Timing Only).
24 v	13564	Fastening Screw for Cams (in "24i" Only).
24 w	13518	Shim (0.002") for Adjusting "24x".
24 w	13527	Shim (0.004") for Adjusting "24x".
24 x	13522	Flat Cam for "24i" and "26i".
26 i	13649	Timing Lever, Complete, with Flat Cams (Fixed Timing).
26 k	7320	Fastening Screw for Cams (in "26i" Only).

Dimensions



reserves the right to change the design or add improvements to its product at any time without incurring any obligations to have such changes or improvements incorporated in any apparatus delivered or in service.



LISTA COMPLETA DE REPUESTOS PARA
EL MAGNETO GS-4

- 3531 Remache para el resorte de retención de la palanca del ruptor
- 3552 Pasador del núcleo del inducido
- 3568 Arandela aisladora del cojinete de bolas de 15 mm.
- 3569 Listón aislador del cojinete de bolas de 15 mm.
- 3763 Mecha de lubricación de la palanca de distribución
- 3790 Tornillo de fijación del ruptor
- 4191 Contratuerca del tornillo de contacto
- 4352 Arandela del tornillo de fijación del soporte de conexión
- 4390 Resorte de la tapa del agujero de lubricación
- 4578 Tornillo de retención o tope de la palanca de distribución
- 5015 Tornillo de fijación de la placa triangular
- 5090 Resorte de sujeción del tornillo de fijación del ruptor
- 5102 Bloque de contacto
- 5108 Tornillo de fijación del bloque de contacto
- 5111 Arandela del resorte de sujeción 5090
- 6521 Arandela de fieltro del eje del magneto
- 6525 Tuerca del eje del magneto
- 6537 Tornillo para el soporte de conexión 9771 y la placa de cierre 13515
- 6559 Manguito de aislamiento del tornillo de fijación del ruptor
- 6565 Manguito de aislamiento del tornillo 5108
- 6566 Tornillo de fijación del resorte del ruptor
- 6567 Resorte de refuerzo de la palanca del ruptor
- 6603 Tornillo de la tapa del agujero de lubricación
- 6607 Tornillo de fijación del imán
- 6809 Tornillo de contacto de platino
- 6980 Arandela espaciadora de 0.1 mm. para el cojinete de 15 mm.
- 6981 Arandela espaciadora de 0.2 mm. para el cojinete de 15 mm.
- 6982 Arandela espaciadora de 0.3 mm. para el cojinete de 15 mm.
- 7244 Arandela para el tornillo 6566
- 7320 Tornillo largo para la leva chata de las palancas moldeadas
- 7495 Tornillo de fijación del piñón
- 9018 Llave calibradora para los contactos
- 9051 Tornillo de fijación del disco del distribuidor
- 9076 Tornillo de retención del manguito excéntrico
- 9132 Escobilla de carbón del ruptor (a la masa), con resorte
- 9169 Llave calibradora para los contactos
- 9179 Chaveta Woodruff
- 9378 Listón aislador del soporte de conexión
- 9398 Tapa del agujero de lubricación, a derecha o izquierda, según vaya marcado
- 9407 Arandela de seguridad para los tornillos 9443, 6537, 13911
- 9408 Entrehierro de seguridad y tornillo de presión
- 9433 Manguito de aislamiento del tornillo del soporte de conexión
- 9437 Tornillo de conexión del cable de la tapa lateral
- 9443 Tornillo de la tapa del agujero de inspección
- 9475 Mecha de lubricación con resorte para el cojinete excéntrico
- 9585 Tornillo de fijación de las placas laterales del inducido
- 3580 Manguito de aislamiento del soporte de conexión



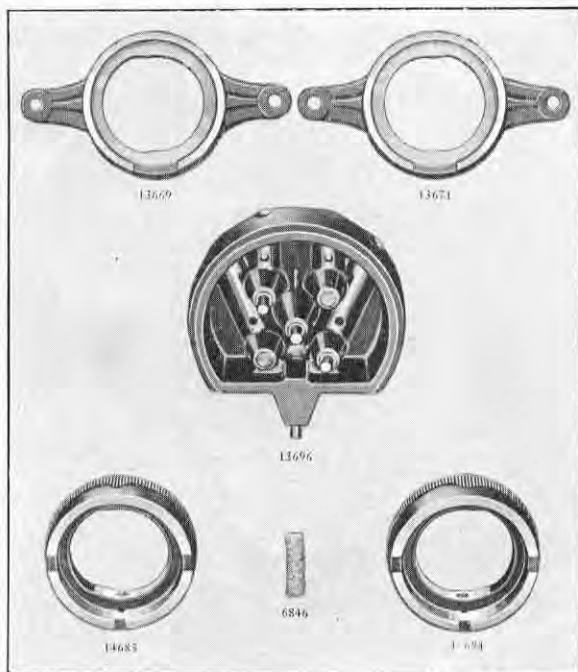
LISTA COMPLETA DE REPUESTOS PARA EL MAGNETO GS-4

- 9769 Escobilla de carbón a la masa, para la caja, completa
- 9771 Soporte de conexión
- 9811 Tornillo de conexión para los cables del distribuidor
- 9922 Escobilla de carbón del distribuidor, con resorte
- 13047 Arandela de seguridad del eje del magneto
- 13155 Lima para los contactos
- 13186 Cojinete de bolas de 15 mm., completo
- 13420 Rueda dentada del distribuidor, completa con su eje
- 13424 Perno de sujeción de la placa del distribuidor
- 13426 Placa del distribuidor con escobillas, completa
- 13429 Tapa del agujero de inspección
- 13432 Disco del distribuidor
- 13436 Inducido, completo
- 13437 Piñón
- 13438 Anillo colector
- 13440 Núcleo del inducido con arrollamiento
- 13442 Placa lateral de arrastre del inducido, con condensador
- 13445 Placa lateral de arrastre del inducido
- 13446 Placa lateral de la leva del inducido, con soporte de conexión
- 13452 Arandela de seguridad del tornillo 9051
- 13464 Placa lateral de la leva del inducido
- 13466 Caja del magneto, completa
- 13470 Imán
- 13485 Arandela de aislamiento del cojinete de bolas de 13 mm.
- 13486 Listón de aislamiento del cojinete de bolas de 13 mm.
- 13488 Manguito excéntrico con tornillo de tope
- 13515 Placa de cierre del manguito excéntrico
- 13518 Calce de 0.05 mm. para ajustar la leva chata
- 13522 Leva chata
- 13523 Tuerca redonda para poner en corto circuito el resorte de la tapa lateral
- 13525 Tapa lateral completa
- 13526 Escobilla de corto circuito con resorte
- 13527 Calce de 0.10 mm. para ajustar la leva chata
- 13536 Palanca de ruptura de rotación a la derecha, con contacto de platino
- 13537 Palanca de ruptura de rotación a la izquierda, con contacto de platino
- 13538 Resorte de detención de la palanca de ruptura
- 13539 Resorte de la palanca de ruptura
- 13560 Perno de sujeción de la tapa lateral
- 13564 Tornillo corto para la leva chata de las palancas de distribución de latón
- 13565 Listón de aislamiento del bloque de contacto
- 13577 Ruptor de rotación a la derecha, con contactos de platino
- 13578 Ruptor de rotación a la izquierda, con contactos de platino
- 13647 Remache de contacto de platino
- 13649 Palanca de distribución para encendido fijo, completa
- 13653 Placa triangular con cojinete de bolas completo
- 13658 Ruptor de rotación a la derecha, sin palanca de ruptura ni tornillo de contacto
- 13659 Ruptor de rotación a la izquierda, sin palanca de ruptura ni tornillo de contacto

LISTA DE PIEZAS DEL MODELO GS-4

- 13692 Tapa del agujero de lubricación
- 13693 Remache de la tapa del agujero de lubricación
- 13707 Palanca de distribución para encendido variable, completa
- 13823 Disco de ruptor de rotación a la derecha, con resorte
- 13824 Disco de ruptor de rotación a la izquierda, con resorte
- 13841 Arandela espaciadora de 0.1 mm. para el cojinete de 13 mm.
- 13842 Arandela espaciadora de 0.2 mm. para el cojinete de 13 mm.
- 13907 Condensador
- 13910 Tapa del condensador
- 13911 Tornillo de fijación del condensador
- 13929 Listón de aislamiento del condensador
- 13934 Tubo de aislamiento del condensador
- 14610 Cojinete de bolas de 13 mm., completo
- 14742 Arandela de retención del muelle del anillo colector
- 16000 Disco de fieltro del cojinete excéntrico
- 6516 Chaveta Wodoruff de 3 mm. del eje del magneto, especial para coche Dodge
- 17743 Placa lateral de accionamiento del inducido (Dodge)
- 17744 Placa lateral de accionamiento del inducido, con condensador (Dodge)
- 17745 Inducido completo (especial para coche Dodge)

PIEZAS DEL MAGNETO GS-4/2



PIEZAS DEL MAGNETO GS-4/2

- 6846 Mecha de lubricación de la palanca de distribución 18683 y 14684, modelo GS-4/2 de encendido fijo.
- 13669 Palanca de distribución completa (GS-4/2 enc. var. izq. a der.).
- 13671 Palanca de distribución completa (GS-4/2 enc. var. der. a izq.).
- 13696 Placa del distribuidor completa con escobillas.
- 14683 Palanca de distribución completa (GS-4/2 enc. fijo izq. a der.).
- 14684 Palanca de distribución completa (GS-4/2 enc. fijo der. a izq.).

GARANTIA

Todo magneto Eisemann se garantiza contra todo defecto de material y de mano de obra.

Todo magneto nuevo se garantiza por lo que toca a su funcionamiento adecuado en servicio durante un período de noventa (90) días contados desde la fecha de la compra del motor en que iba originalmente instalado.

Las obligaciones que asumimos en virtud de esta garantía se limitan a la reparación o reposición gratuitas de las piezas defectuosas, siendo por cuenta del interesado los gastos de transporte y los que ocasionen el desmontaje y montaje del magneto.

Esta garantía se considerará anulada cuando el magneto haya sido objeto de negligencia o accidente o indebidamente aplicado. El desmontaje o las reparaciones efectuados fuera de nuestros talleres o Estaciones de Servicio oficiales podrá también acarrear la nulidad de la garantía.

Las Estaciones de Servicio Oficiales de la empresa Eisemann están autorizadas a prestar gratuitamente sus servicios de acuerdo con los términos de esta garantía, autorización que no se extiende a ninguna otra entidad.

El reconocimiento definitivo de las reclamaciones presentadas en virtud de esta garantía incumbe al fabricante, a cuya discreción queda el determinar su validez.