

# Robert Bosch

## PRODUCTS



### INSTRUCTION BOOK

for

### FC1A MAGNETOS

UNITED AMERICAN BOSCH CORPORATION  
ROBERT BOSCH MAGNETO CO., INC.  
LONG ISLAND CITY-NEW YORK



TRADE MARK OF

ROBERT BOSCH A.-G.

7655/1



## INSTRUCTIONS FOR THE OPERATION AND MAINTENANCE OF MAGNETOS FC 1 A

These Robert Bosch Magnetos are designed for use on small one cylinder gasoline engines. They combine light weight and compact construction with reliability and a high standard of electrical performance.

Each magneto is a completely enclosed unit, with all joints packed so as to be dirt tight and water tight. The construction is simple, without exposed terminals or wiring. These features insure maximum reliability and quiet operation and add to the attractive appearance of the magneto.

These types are high tension magnetos, having both primary and secondary windings on the armature core. When the armature is rotated a current is produced in the primary winding which, at the moment of its maximum strength, is interrupted by an interrupter rotating together with the armature. This action produces a high tension current in the secondary winding of the armature. The current is conducted through the high tension cable to the spark plug where the spark jumps across the electrode and ignites the mixture in the cylinder.

### STARTING

The ignition should be retarded at starting, if the magneto is provided with a manual timing control. However, to give highest efficiency, when the engine is running, the spark should be advanced as much as the engine will stand without knocking.

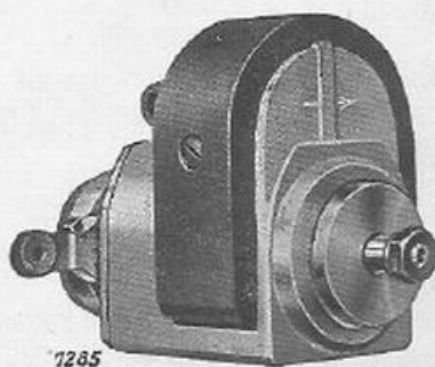
### IGNITION SWITCH

If the magneto is provided with a short circuiting terminal, ignition may be cut off by means of a short circuiting switch, or push button, which is connected between this terminal and the engine frame. When the switch is closed, ignition cannot occur.

### CARE and INSPECTION

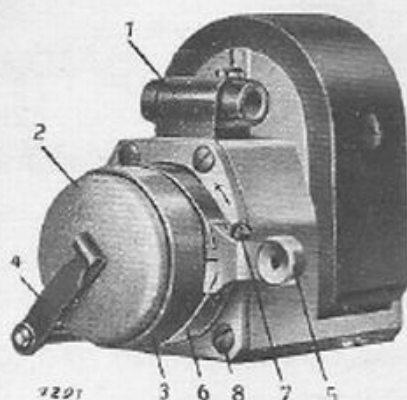
Once installed, these magnetos require very little care. They need no lubrication in service. They contain sufficient lubricant to last until the instrument requires a general inspection, which we suggest should be made about once a year.

Fig. 1



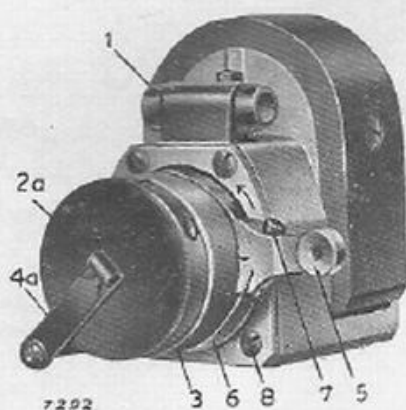
FC1A Magneto  
(viewed from shaft end)  
( $\frac{1}{3}$  actual size)

Fig. 2



FC1A Magneto  
(viewed from interrupter end)  
( $\frac{1}{3}$  actual size)

Fig. 3



FC1A Magneto  
(viewed from interrupter end, with short circuiting terminal)  
( $\frac{1}{3}$  actual size)

- 1 = Collector brush holder
- 2 = End cap
- 2a = End cap with short circuiting terminal
- 3 = Interrupter housing
- 4 = End cap holding spring

- 4a = Holding spring for end cap with short circuiting terminal
- 5 = Control arm
- 6 = Control arm holding band
- 7 = Control arm fastening screw
- 8 = Rear end plate fastening screw

## Armature

This is mounted on ball bearings which are packed with Robert Bosch Lubricant US 505. This need not be replaced for 30,000 to 40,000 miles (2,000 to 3,000 hours of service). The felt packing in the contact breaker housing is saturated with oil which will last for a long time. It is sufficient to renew these lubricants when the engine is given a complete overhauling.

## Interrupter

About once in every 100 hours of service, remove the interrupter end cap and inspect the condition and adjustment of the contacts.

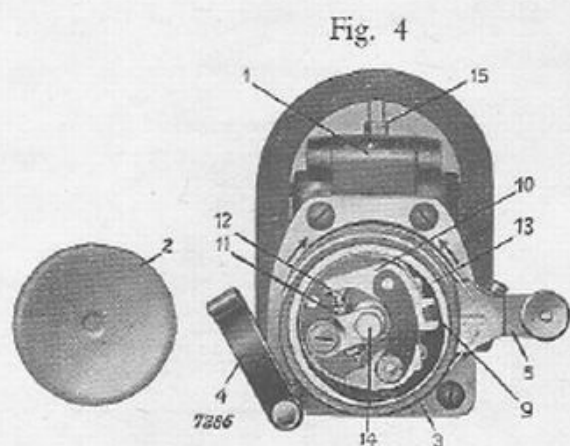
The maximum gap between the contacts when open should not exceed .015" (.4 mm). Check this by means of a gauge on Bosch wrench ZAS 1/1 and adjust the contact screw if necessary.

Clean and flatten dirty, uneven or pitted contacts carefully with a small file. Do not use emery paper for this purpose. The contacts are made accessible by removing the interrupter housing and can be opened by depressing the interrupter lever.

Do not permit oil to get on the interrupter contacts. This will cause improper contact, faulty operation and rapid contact wear.

The interrupter can be removed from the magneto for replacement

of parts by unscrewing the interrupter fastening screw. When replacing, care must be taken to put back the interrupter in its proper position as indicated by key and keyway. Be sure to engage the interrupter housing stop pin (23) in the groove (24) marked with a red arrow to show the direction of magneto rotation (Fig. 6).



FC 1 A Magneto  
with end cap removed

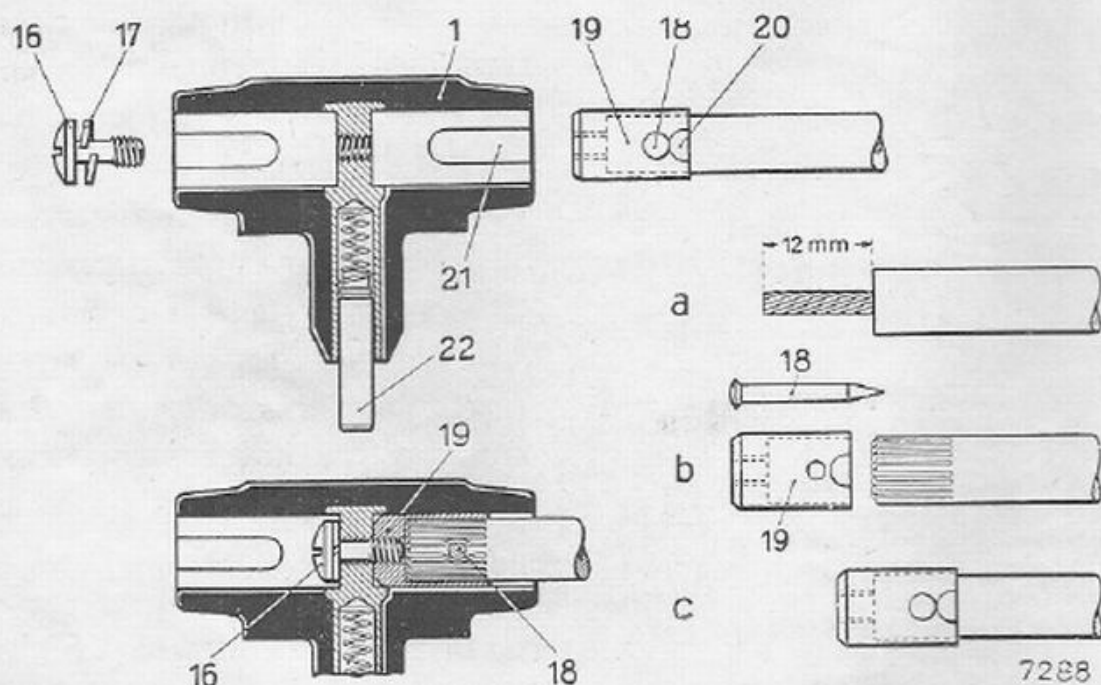
- 1 = Collector brush holder.
- 2 = End cap.
- 3 = Interrupter housing.
- 4 = End cap holding spring.
- 5 = Control arm.
- 9 = Interrupter lever fiber block.
- 10 = Interrupter lever.
- 11 = Platinum screw-long.
- 12 = Platinum screw-short.
- 13 = Cam.
- 14 = Interrupter fastening screw.
- 15 = Collector brush holder fastening screw.



## Attachment of High Tension Cable

As indicated in Figure 5, the high tension cable is fastened in the collector brush holder by a screw and threaded bushing. The design is such that the cable can be inserted from either side. If for any reason the high tension cable is replaced, use cable of  $9/32$ " (7 mm) outside diameter. Remove the insulation from the end of the cable for about  $1/2$ " as shown in sketch a and bend the strands back over the insulation as indicated in sketch b. Insert the cable end into the large opening in the threaded bushing and fasten by means of a rivet (sketch c). Insert the cable with bushing into the collector brush holder with its projection fitting into the corresponding groove in the collector brush holder. Fasten with screw and lock washer.

Fig. 5



- |                                   |  |
|-----------------------------------|--|
| 1 = Collector brush holder.       | 19 = Cable terminal ferrule.           |
| 16 = Cable fastening screw.       | 20 = Projection on ferrule 19.         |
| 17 = Fastening screw lock washer. | 21 = Groove in collector brush holder. |
| 18 = Cable fastening rivet.       | 22 = Collector brush.                  |

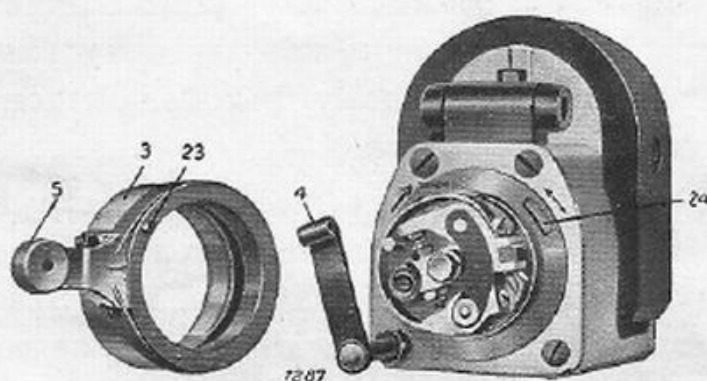
## SUGGESTIONS

If the Engine Misses Explosions, inspect the ignition wiring for possible short circuits. Be sure that the terminals are clean and tight and that the insulation is in perfect condition.

**Spark Plugs:** With properly chosen Robert Bosch plugs spark plug trouble should not occur. If a spark plug is suspected of giving trouble, remove it for examination. **If the insulator is badly sooted, this may short circuit the electrodes and prevent the spark from jumping.** Sooting may be caused by too rich a mixture, by too much lubricating oil in the cylinder, or by too small a gap between the electrodes. **Wash off the carbon with gasoline** and consult the engine manufacturer's service station, if the trouble cannot be readily located. If the gap between electrodes has become too large, adjust this by bending in the outer electrode. **The gap should be .019" to .023" (.5 to .6 mm).**

**If the Engine Fails to Start,** it is advisable to check the ignition system. Disconnect the cable which leads from the magneto to the ignition switch by removing the interrupter end cap. If this remedies the trouble, the switch cable is grounded, either by damaged insulation or by one of its terminals touching a grounded part of the engine.

Fig. 6



FC1A Magneto with interrupter housing removed

3 = Interrupter housing.  
4 = End cap holding spring.  
5 = Control arm.

23 = Interrupter housing stop pin.  
24 = Timing slot for interrupter housing stop pin.

**Magneto:** If the wiring and spark plug are in good condition, but the magneto still fails to operate when the switch cable is disconnected, next inspect the interrupter as directed in the foregoing. If this is in proper condition, examine the collector brush holder and check the timing of the magneto to the engine.

If, after observing the foregoing instructions, the trouble cannot be located, it is advisable to send the magneto for inspection and repair to a Robert Bosch Authorized Service Station, or to the Robert Bosch Magneto Company, Inc., 3601 Queens Boulevard, Long Island City, New York.

## TIMING TO THE ENGINE

Since magnetos are timed when installed by the engine manufacturer, the following instructions apply only if the magneto has been dismantled from the engine.

The timing of the magneto to the engine consists of bringing the magneto armature into proper relation to the position of the engine piston and connecting it to the engine in this relation.

Turn the engine crankshaft until the piston on its compression stroke corresponds to the position of maximum engine efficiency with fully advanced ignition. Generally speaking, this position can be assumed as 1/10 of the piston stroke before dead top center. Some engines, however, can take more advance without knocking. Very frequently the position of dead center is marked on the flywheel. If not, it can be ascertained very easily by means of a feeler rod.

Turn aside spring 4, and remove the contact breaker end cap 2 or 2a from the magneto. If the magneto has a manual timing control arm, put this into the position of maximum advance by turning it opposite to the direction of rotation as far as it will go. Then turn the magneto armature shaft in the direction of the arrow until contacts 11 and 12 begin to open. Couple the magneto to the engine in this relation.

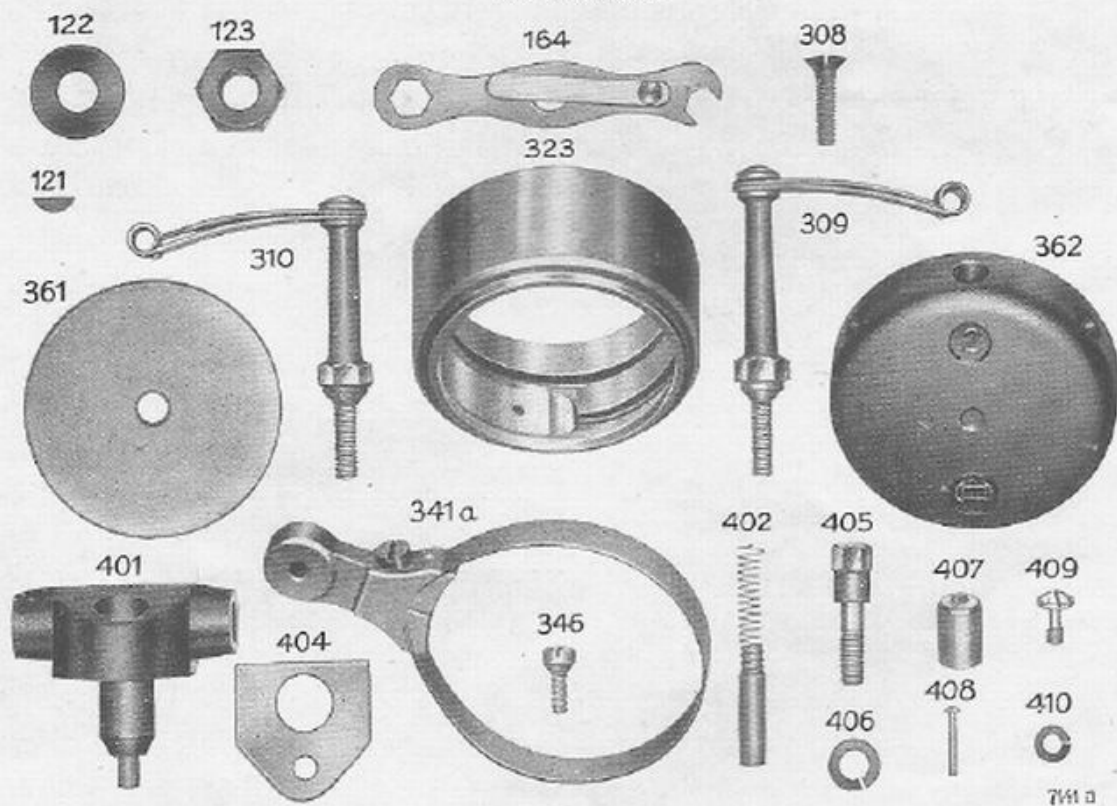
If, with this timing, an ignition knock occurs when the engine is operated with a fixed spark magneto, or with a manually controlled magneto in full advance position, this indicates that the spark is set too early. In this case, retune the magneto to the engine but with the piston set slightly later in the compression stroke. Repeat this until the engine runs under full load without knocking when the spark is fully advanced. To operate at maximum efficiency the engine should be given as much ignition advance as it will stand without knocking.



## PARTS LIST for FC1A MAGNETO

Illustration Number	Description of Parts	Part Number
121	Armature shaft Woodruff key . . . . .	NKE 2/2
122	Armature shaft washer . . . . .	NMS 416/1
123	Armature shaft hexagon nut . . . . .	NMU 46/3
164	Magneto wrench . . . . .	ZAS 1/1
308	Rear end plate fastening screw . . . . .	NSR 731/19
309	End cap holding post and spring for ZDE 17/1 . . . . .	ZFT 3/2
310	End cap holding post and spring for ZDE 12/1 . . . . .	ZFT 3/1
311	Filler spring in unused timing slot . . . . .	ZMF 8/9
	*Filler spring in timing slot—fixed spark . . . . .	ZMF 8/8
323	Interrupter housing with stop pin . . . . .	ZNC 9/1
341a	Control arm and band, with hole .236" . . . . .	ZHE 1/4
346	Control arm fastening screw . . . . .	WSR 6/1
361	End cap without short circuiting terminal . . . . .	ZDE 12/1
362	End cap with short circuiting terminal . . . . .	ZDE 17/1
401	Collector brush holder with brush and spring . . . . .	ZSA 4/1
402	Collector brush and spring . . . . .	WSK 33/1
404	Collector brush holder gasket . . . . .	WNF 7/1
405	Collector brush holder fastening screw . . . . .	WSR 17/1
406	Collector brush holder fastening screw spring washer . . . . .	NMS 409/1
407	Cable terminal ferrule . . . . .	WMH 1/1
408	Cable fastening rivet . . . . .	WNI 2/1
409	Cable fastening screw . . . . .	WSR 21/1
410	Cable fastening screw spring washer . . . . .	NMS 407/1
	*Robert Bosch magneto grease 1/2 lb. tube . . . . .	US 505

\* Not illustrated





# PARTS LIST for FC1ARS58 MAGNETO

(Used on Homelite Plants)

Illustration Number	Description of Parts	Part Number
121	Armature shaft Woodruff key . . . . .	NY 345/5
122	Armature shaft lock washer . . . . .	NY 345/11
123	Armature shaft hexagon nut . . . . .	NY 345/9
164	Magneto wrench . . . . .	ZAS 1/1
308	Rear end plate fastening screw . . . . .	NSR 731/19
310	End cap holding post and spring . . . . .	ZFT 6/1
311	Filler spring in unused timing slot . . . . .	ZMF 8/8
323	Interrupter housing with two stop pins . . . . .	NY 345/7
341a	Control arm and band, with hole .236" . . . . .	ZHE 1/4
346	Control arm fastening screw . . . . .	WSR 6/1
361	End cap with short circuiting device . . . . .	ZDE 28/2
401	Collector brush holder with brush and spring . . . . .	ZSA 4/1
402	Collector brush and spring . . . . .	WSK 33/1
404	Collector brush holder gasket . . . . .	WNF 7/1
405	Collector brush holder fastening screw . . . . .	WSR 17/1
406	Collector brush holder fastening screw spring washer . . . . .	NMS 409/1
407	Cable terminal ferrule . . . . .	WMH 1/1
408	Cable fastening rivet . . . . .	WNI 2/1
409	Cable fastening screw . . . . .	WSR 21/1
410	Cable fastening screw spring washer . . . . .	NMS 407/1
	*High tension cable, 12" long, with loop terminal . . . . .	NY 345/10
	*Robert Bosch magneto grease, 1/2 lb. tube . . . . .	US 505

\* Not illustrated.

For interrupter parts see following page.

### WHEN ORDERING PARTS, PLEASE SPECIFY

1. Type of Magneto for which part is required (type designation will be found engraved on magneto frame).
2. Part letter and number, together with description as shown in list.

NOTE: Do not order parts by illustration number, as they do not identify parts sufficiently.

# INTERRUPTER ZUB 9/2Z, ZUB 10/2Z

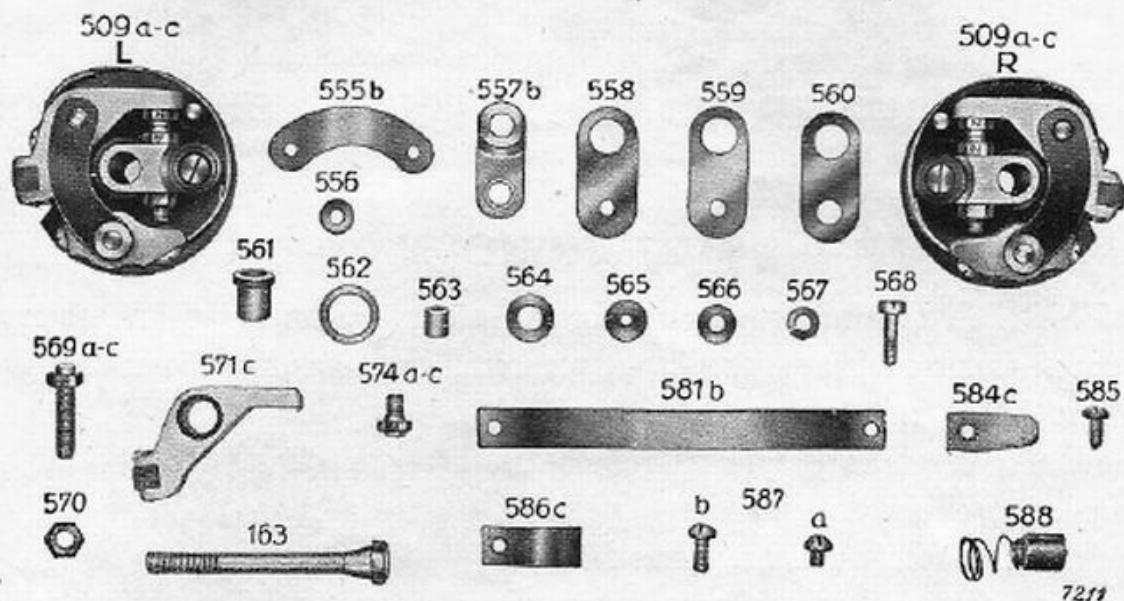


Illustration Number	Description	Part Number
509b L	Interrupter complete—anti-clockwise	ZUB 9/2
509b R	Interrupter complete—clockwise	ZUB 10/2
555 b	Interrupter lever holding spring	ZBF 7/1
556	Interrupter lever holding spring washer	NMS 66/1
557 b	Contact block	ZKT 1/1
558	Contact block insulating plate—thin	ZPT 13/2
559	Contact block insulating plate—thin (spacing plate)	ZPT 13/3
560	Contact block insulating plate—thick	ZPT 13/1
561	Interrupter center bushing	WNB 3/1
562	Contact block brass ring	WMS 8/1
563	Contact block insulating bushing	NNB 5/7
564	Contact block insulating washer—thick	WNS 5/1
565	Contact block insulating washer—thin	NNS 65/2
566	Contact block washer—under spring washer 567	WMS 9/1
567	Contact block spring washer	NMS 405/1
568	Contact block fastening washer	NMS 4/1
569 b	Platinum screw—long	ZKV 3/3
570	Platinum screw lock nut	WMU 2/1
571 c	Interrupter lever with bearing bushing	ZUH 6/1
574 b	Platinum screw—short	ZKV 9/3
581 b	Interrupter lever operating spring	ZBF 9/1
584 c	Interrupter lever stop spring	ZBF 6/2
585	Interrupter lever stop spring fastening screw	NSR 277/8
586 a	Reinforcing spring—on interrupter lever—small	ZBF 8/5
586 b	Reinforcing spring—on interrupter lever—large	ZBF 8/7
586 c	Reinforcing spring—on disc—small	ZBF 8/4
586 d	Reinforcing spring—on disc—large	ZBF 8/6
587 a	Operating spring fastening screw—on disc	NSR 277/5
587 b	Operating spring fastening screw—on lever	NSR 277/11
588	Interrupter grounding brush and spring	WSK 9/1
163	Interrupter fastening screw	WSR 5/4

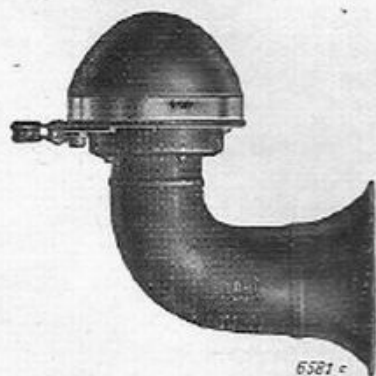


# Robert Bosch

## PRODUCTS

### MASTER HORN

This high frequency vibrator horn, stands without rival in spite of many imitations. It is built to the well known high standards of Robert Bosch master workmanship and permanent dependability, and retains its clear, compelling tone without need of lubrication or adjustment. This horn is constructed to withstand exposure to the dust and dirt, snow and rain to which outside mounted horns are subjected, while its elegant appearance and graceful design make it an ornament to any vehicle.

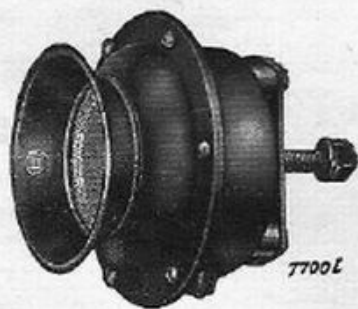


Furnished for 6 and 12 volts. Also for industrial use for 110 volts D.C.

*Ask for booklet.*

### FD HORN

This type of horn is of very compact and of rugged construction. The volume of sound obtained from this instrument is surprising. Its pleasing, penetrating, snappy and attention-getting pitch and the far reaching tone make it suitable for all cars and commercial vehicles large or small.



Furnished for 6 volts.

The FD Horn can be supplied either with bracket for cylinder head mounting, or with special bracket for Ford Model A or with round mounting bracket for handlebar on motorcycle.

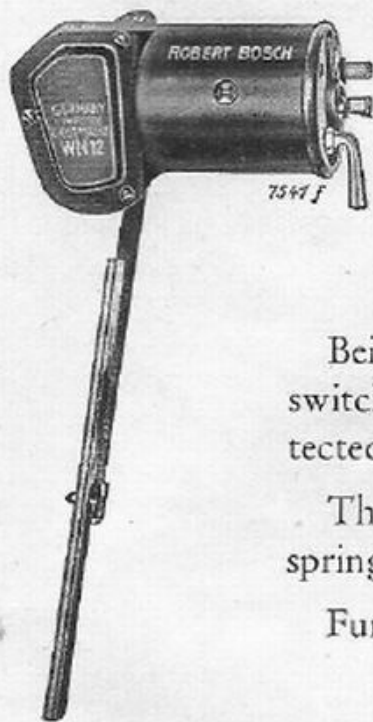
*Ask for booklet.*

# Robert Bosch PRODUCTS

## PYRO-ACTION SPARK PLUGS

These give lasting service of a high standard, usually expected only when plugs are new. Their exclusive "Steatite" insulator does not become permeated by carbon, which is a common spark plug defect. Any oil or liquid fuel which collects on the insulator is immediately burned away. These features mean immunity from fouling. The famous Robert Bosch "crescent gap" gives a broad, flat spark which insures energetic ignition and reduces electrode wear. On account of this feature and the special alloy electrodes used, Robert Bosch Pyro-Action spark plugs rarely need adjustment and have a life many times that of cheaper plugs.

*Ask for folder.*



## WINDSHIELD WIPER

This electric windshield wiper is powerful, quiet and uses very little current. It is very compact, being only 5" long and 2<sup>3</sup>/<sub>4</sub>" high.

Being nicely finished in black enamel with nickelled switch lever, it is pleasing in appearance and fully protected from dirt and water.

The wiper arm is held against the windshield by spring pressure.

Furnished for 6 and 12 volts.

*Ask for booklet.*



## WARRANTY

*We warrant each new unit sold 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 at our factory of any part of said equipment which shall, within one (1) year or-if used on taxicabs or motorbuses within ninety (90) days-after delivery to the original purchaser, be returned to us with transportation charges prepaid and which our examination shall disclose to our satisfaction to have been defective.*

*This warranty shall not apply to any unit which has been subjected to misuse, neglect, accident, or which has been repaired or altered outside of our factory so as, in our judgment, to affect its stability or reliability. We are not responsible for failure of any unit due to defective wiring or improper installation.*

*We do not authorize any person to assume for us any other liability in connection with the sale of our products.*

**ROBERT BOSCH MAGNETO COMPANY, INC.**

3601 Queens Boulevard

Long Island City—New York

# Robert Bosch

## PRODUCTS

### Authorized Service Station in U.S.A. and Canada

To assure to its users the best possible satisfaction from Robert Bosch products, the Robert Bosch Magneto Company, Inc., has built up an extensive organization in the United States and Canada.

Robert Bosch Authorized Service Stations are the only representatives in these countries who are authorized to give service in accordance with the Robert Bosch guarantee. Look for this sign to be sure you deal with official service stations. A directory of Authorized Service Stations will gladly be sent you on request.

All Robert Bosch Products bear the full name "ROBERT BOSCH" and this trademark of Robert Bosch A.-G.





# AUTHORIZED SERVICE REPRESENTATIVES

## Outside of the U.S.A. and Canada

The following list contains the principal houses rendering service on Robert Bosch products. In addition, many other service stations, too numerous to mention, have been appointed in most of the countries listed. Users of Robert Bosch products located in these countries are requested to communicate with the nearest representative listed for the address of the service station most convenient to them.

## NORTH and SOUTH AMERICA

### Outside of the U.S.A. and Canada

**Barranquilla**, A. Held, Correo Apartado 127  
**Buenos-Ayres**, Robert Bosch S.A., Calle Rivadavia, 1857-61  
**Habana (Cuba)**, Albert Eppinger, Ave. Belgica, 10  
**Mexico D.F.**, Sommer, Herrmann y Cia., Suc., Departamento Marquinaría, Apto 299  
**Montevideo (Uruguay)**, Eugenio Barth y Cia., Uruguay, 757

**Rio de Janeiro**, Steinberg & Cia., Rua do Passeio, 62  
**Santiago (Chile)**, Saavedra, Bénard y Cia., Ltda., Sociedad Comercial  
**São Paulo**, Steinberg & Cia., Rua Barão de Itapetininga 16  
**Valparaiso**, Saavedra, Bénard y Cia., Ltda., Sociedad Comercial, Avenida Brasil 929

## EUROPE

**Amsterdam C.**, N. V. Willem van Rijn, Keizersgracht 171  
**Athens**, G. Paléologue & Cie., 20, Rue Santarosa  
**Barcelona**, Equipo Bosch S. A., Mallorca 281  
**Berlin**, Robert Bosch A.-G., Verkaufsbüro Berlin, Charlottenburg 4, Bismarckstraße 71  
**Berlin SW 48**, Eisemann-Werke A.-G., Zweigstelle Berlin, Friedrichstraße 225  
**Breslau II**, Eisemann-Werke A.-G., Zweigstelle Breslau, Taubentzenstraße 35  
**Brussels-Midi**, Allumage-Lumière S.A., 23-25, Rue Lambert Crickx  
**Bucharest**, Leonida & Cie. S.A., Calea Victoriei 53  
**Budapest V**, Bosch Robert, Korl. fel. társaság, Váci Ut 22-24  
**Cologne**, Eisemann-Werke A.-G., Zweigstelle Köln, Mastrichter Straße 13  
**Constantinople**, Constantin Dassira & Georges Dassira, Galata, Rue des Banques, 66-68-70  
**Copenhagen Ø**, A/S Magneto, Øster Farimagsgade 28  
**Danzig**, Alfred Bauch, Langer Markt 32  
**Frankfurt on the Main West**, Robert Bosch A.-G., Verkaufsbüro Frankfurt a.M., Moltke-Allee 47-53  
**Geneva**, Robert Bosch S.A., 78, Rue de Lausanne  
**Glasgow. C.2**, J.A. Stevens Ltd., 218/222 Bothwell Street  
**Hanover**, Eisemann-Werke A.-G., Zweigstelle Hannover, Marienstraße 49  
**Helsingfors**, A.-B. Walfrid Aiftan O.-Y.

**Leipzig C1**, Eisemann-Werke A.-G., Zweigstelle Leipzig, Kapellenstraße 15  
**London. W. 1**, J. A. Stevens Ltd., 21/22 Upper Rathbone Place  
**Luxemburg**, Romain Lecorsais, Ingenieur, Grand'rue 51  
**Madrid**, Equipo Bosch S.A., Calle Viriato 18  
**Milan (126)**, S.A. per il Commercio dei Materiali Bosch, Via Londonio, 2  
**Munich**, Eisemann-Werke A.-G., Zweigstelle München, Karlstraße 42  
**Oporto**, Roberto Cudell, Rua Passos Manuel 41-1º  
**Oslo**, A/S Automagnet, Kongensgate 16  
**Paris XVIe**, Ateliers de Construction Lavallette, 97, Boulevard Exelmans  
**Prague XII**, Robert Bosch G. m. b. H., Marš, Foche 8  
**Rome (127)**, S.A. per il Commercio dei Materiali Bosch, Via Novara, 8-14  
**Sevilla**, Equipo Bosch S.A. Paseo de Colón 4duplº  
**Sofia**, Léon Arié, Uliza Targovska 15  
**Stockholm**, Aktiebolaget Robo, Birgerjarlgatan 25  
**Stuttgart-Berg**, Robert Bosch A.-G., Verkaufsbüro Stuttgart, Stuttgarterstraße 17  
**Turin (110)**, S.A. per il Commercio dei Materiali Bosch, Via A. Vespucci, 52-54  
**Vienna, IX**, Robert Bosch G. m. b. H., Spittelauerlände 5, bei der Friedensbrücke  
**Warsaw**, J. Kestenbaum, Ul. Wilcza 29  
**Zagreb**, Frank I. Drug, Gundulićeva 40  
**Zurich**, Robert Bosch A.-G. Utoquai 57

## ASIA

**Bangkok**, Windsor & Co.  
**Beyrouth**, Eastern Engineering Co., B. P. 257  
**Calcutta**, Martin & Co., Department Bosch Service, 58, Free School Street  
**Canton (China)**, Jebsen & Co., 10, Western Bund  
**Colombo (Ceylon)**, Freudenberg & Co., De Mel Building  
**Hongkong**, Jebsen & Co., 12, Pedder Street  
**Jaffa**, Gebrüder Wagner, P. O. B. 249  
**Kobe**, C. Illies & Co., 84b, Yedomachi.

**Mukden**, Yali Import & Export Co. Ltd.  
**Penang**, N. V. Straits Java Trading Co., Weld Quay  
**Shanghai**, Jebsen & Co., 7, Hankow Road  
**Singapore**, N. V. Straits Java Trading Co., 114, Cecil Street  
**Soerabaya**, N. V. Willem van Rijn's Technisch Bureau, Kaliasin 15  
**Tokio**, C. Illies & Co., 15 Tameike-cho, Akasaka-ku  
**Tsingtau**, Henzler & Co., P. O. Box. 230

## AFRICA

**Alexandria and Cairo**, Equipements Electriques d'Automobiles,  
**Cairo**, 11, Rue Gameh Charkass

**Alexandria**, Rue d'Algérie 8  
**Johannesburg**, F. Hoppert, Anderson Street 96  
**Kilindini (Kenya)**, Smith, Mackenzie & Co.

## AUSTRALIA and NEW ZEALAND

**Melbourne and Sydney**, Robert Bosch Supply & Service Co., Pty. Ltd.  
**Melbourne**, 256/258, Latrobe Street

**Sydney**, 249, Elizabeth Street  
**Wellington**, Jas. J. Niven & Co., Ltd., 152-72 Wakefield Street.

## UNITED AMERICAN BOSCH CORPORATION, SPRINGFIELD, MASS. U.S.A.

Prices effective November 15, 1936 (Supersedes pages B 6, 6a, 6b, Jan. 15, 1934)

For use in  
U.S.A. only

## MAGNETOS

LIST NO. 4

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

## SUPER-ENERGY MAGNETOS

Type	Retail	Type	Retail
FB1C .....	\$26.00	FU4/2B (360°) .....	56.00
FC1A .....	31.00	FU6B .....	63.00
FF1A .....	34.00	FU6/3 .....	66.00
FF2/1x2 .....	38.00	FU6B Automatic Advance .....	88.00
FF2A .....	36.00	FR4D .....	63.00
FFVA .....	36.00	FR4D Automatic Advance .....	88.00
FF4A .....	52.00	FR6C .....	72.00
FF6A .....	60.00	FH4 .....	164.50
FU4B .....	56.00	FH6 .....	203.00
FU4B Automatic Advance .....	80.00	FH8 .....	210.00
FU4/2B (180°) .....	59.00		

## MAGNETOS WITH IMPULSE COUPLINGS

For magnetos fitted with Standard Imp. Couplings C125 and C225A, add .....	9.75
For magnetos fitted with manual control Imp. Couplings CM115, CM125, add .....	11.75
For magnetos with Imp. Couplings C125, C225A less driving member, add .....	8.75
For magnetos with Imp. Couplings C115 less driving member, add .....	9.00
For magnetos fitted with Enclosed Imp. Couplings C225E, add .....	26.75

## SPECIAL MAGNETO TYPES

(For motorcycles, marine, tractor, oil field and other industrial engines)

FC1AR S19/1 (For Homelite Plants) .....	33.00
FC1AL S58A (For Homelite Plants) .....	33.00
FC1AL S82 (For Gravely Motor) .....	32.50
FC1AR S97 (For Eclipse) .....	32.50
FF1AR S52 (For Fairmount Railway Motors) .....	38.00
FF1AR S525 (For Red Wing) .....	39.00
FF2AL S238 .....	43.00
FFVAR S45 (For Harley-Davidson Motorcycle) .....	38.50