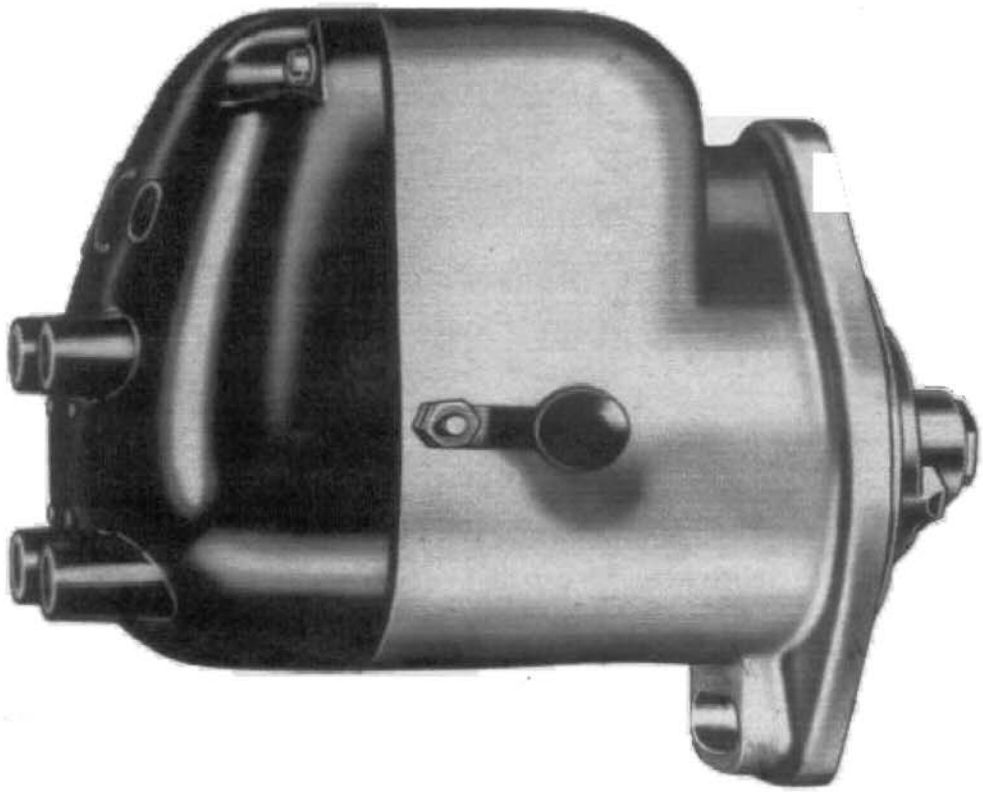
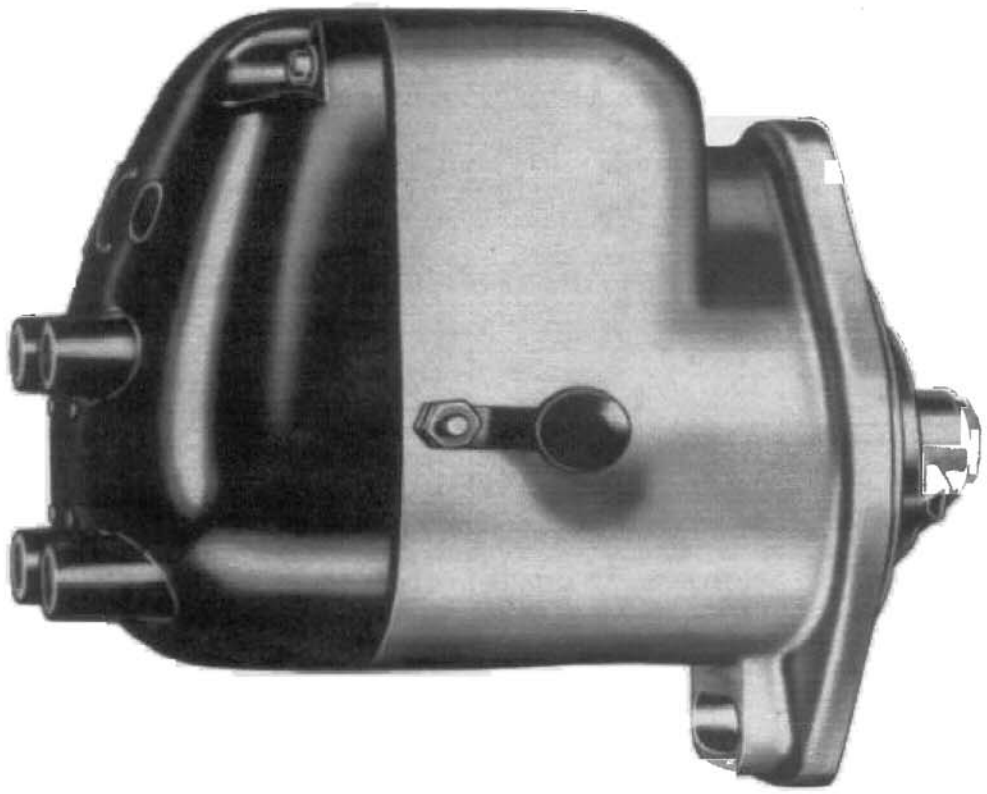


Service Manual and Parts List

for

XH-2525 to XHD-2900



Service Manual and Parts List

for

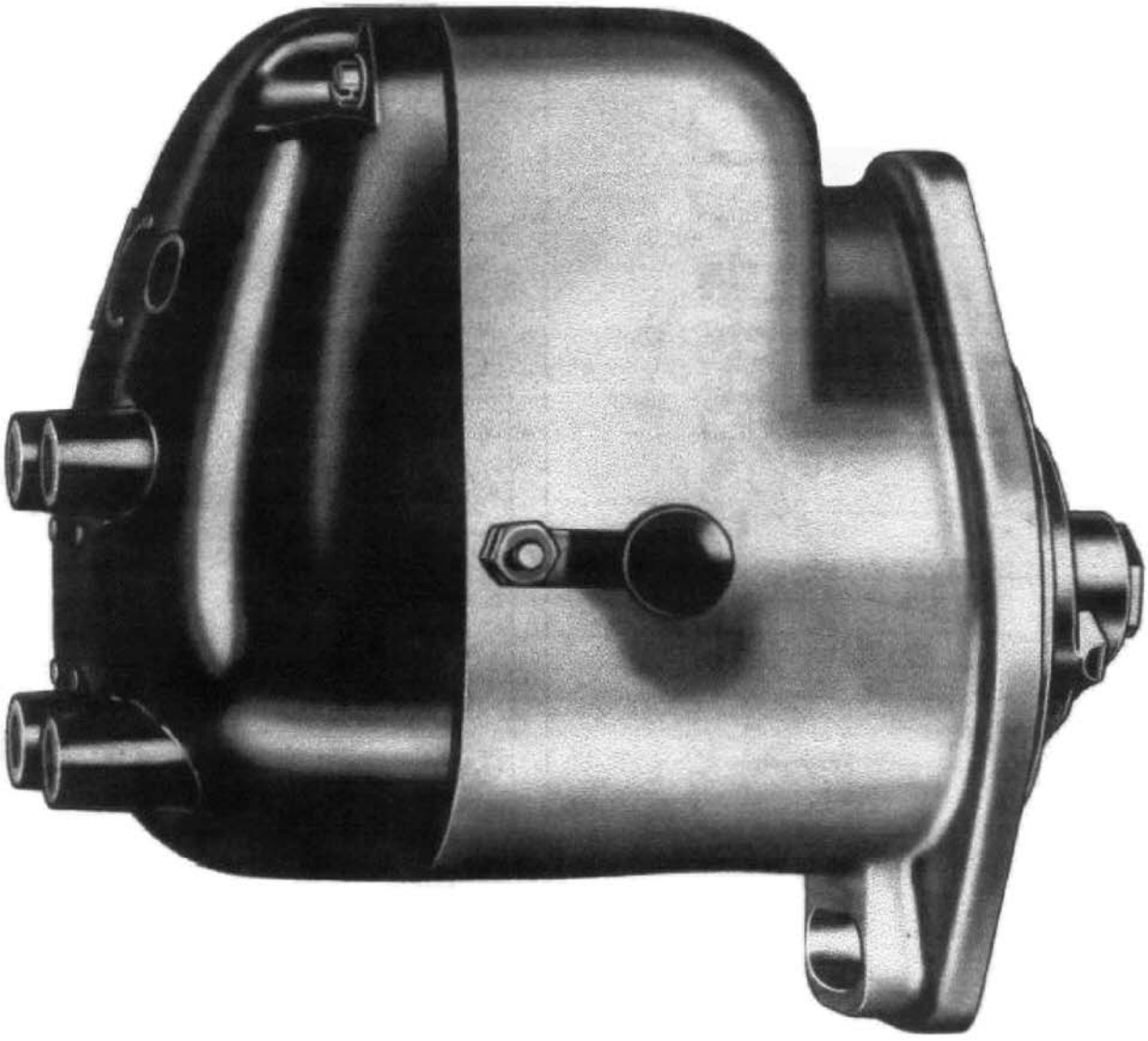
XH-2525 to XHD-2900

prestolite

SERVICE PARTS LIST

XH-2525 to XHD-2900
MAGNETOS

ISSUED: 6-1-81 (Rev.)



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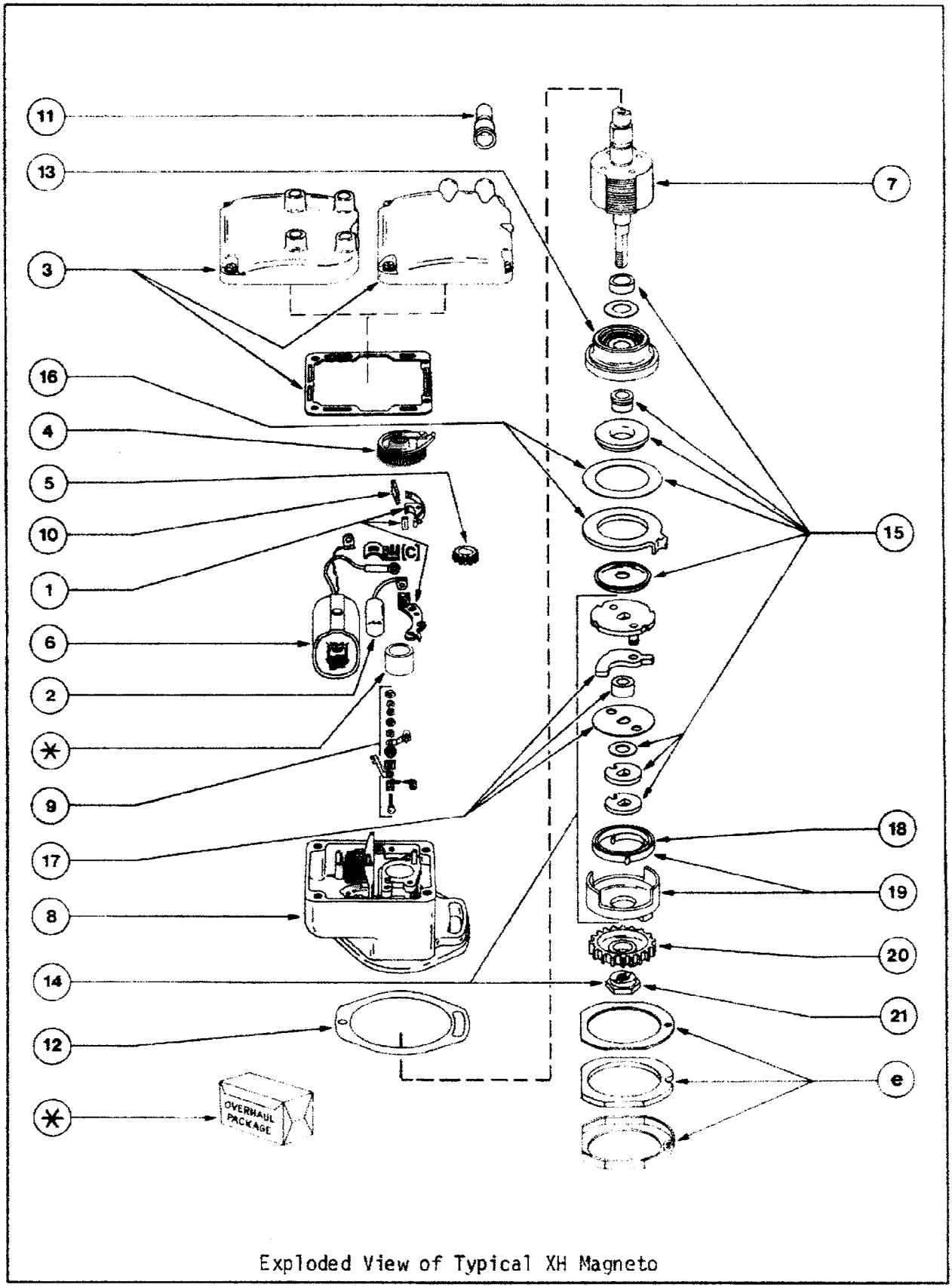
File in the
S-883 SERVICE MANUAL

XH & XHE
MAGNETO SECTION

XH-2525 to XHD-2900 Magneto Parts List



Exploded View of Typical XH Magneto

Assembly	Engine Manufacturer	Type	Mounting [a]	Lag Angle	Rotation	Overhaul Package [*]
XH-2525 (93-5066)	Fairbanks Morse	XH-1	HF	15°	CCW	90-5068
XH-2531B,C (93-5067)	Teledyne Wisconsin	XH-2D	SF	22°	CW	"
XH-2533 (93-5068)	Gravely Tractors	XH-1	HB	10°	CW	"
XH-2593 (93-5069)	Palmer Engine	XH-1	LB	30°	CCW	"
XHD-2600 (93-5070)	Standard Service Sta.	XHD-4	SF	30°	CW	"
XHD-2655 (93-5071)	International Harvester	XHD-4	SF	26°	CW	
XHD-2656 (93-5072)	International Harvester	XHD-4	SF	8°	CCW	"
XHD-2657 (93-5073)	International Harvester	XHD-4	SF	36°	CW	"
XHD-2658 (93-5074)	International Harvester	XHD-4	SF	36°	CCW	"
XHD-2659 (93-5075)	International Harvester	XHD-4	SF	14°	CW	"
XH-2677 (93-5076)	Onan	XH-2D	DF	24°	CW	"
XH-2686 (93-5077)	Onan	XHG-4	DF	24°	CW	"
XHD-2697 (93-5078)	C-R-O Engr.	XHD-6	SF	[NA]	CW	"
XHD-2700 (93-5079)	Standard Service Sta.	XHD-4	HB	30°	CW	"
XHD-2752 (93-5083)	International Harvester	XHD-6	HB	4°	CW	"
XH-2780 (93-5085)	Holtcamp Elec.	XH-1	HF	25°	CW	"
XH-2781 (93-5086)	Holtcamp Elec.	XHG-2	SF	25°	CW	"
XHD-2800 (93-5089)	Standard Service Sta.	XHD-6	SF	45°	CW	"
XHD-2813 - - -	C-R-O Engr.	XHD-4	SF	[NA]	CW	"
XHD-2900 (93-5101)	Standard Service Sta.	XHD-6	HB	45°	CW	"

[*] See Contents of Kit: 90-5068

Contact Set	Gasket
Condenser	Oil Seal
Condenser Bracket	Oil Slinger
Bearing	Grd.Connector
(2) Gasket,Dist.Cap	Window,Dist.Cap
(2) Gasket,Flange	Misc.Hdwe.

[a] Code for Mounting is: LB=Low Base, HB=High Base, HF=Horiz. Flange SF=S.A.E. Flange, WF=Small Flange, VM=Vertical Mount and DF=Double Slotted Flange

[NA] Not available.

XH-2525 to XHD-2900

Assembly	Contact Set [b] (1)	Condenser [c] (2)	Distributor Cap [j] (3)	Distributor Rotor (4)	Distributor Gear (5)	Coil (6)	Magnet Rotor (7)
XH-2525 (93-5066)	1-5008 (FXH-2100B)	2-5007 (FXH-2024)	94-5212 (FXH-2312A-2)	[NA]	[NA]	5-5011 (FXH-2403)	88-5041 (FXH-2106B)
XH-2531B,C (93-5067)	"	"	94-5092 (FXH-2212-2)	[NA]	[NA]	5-5030 (FXH-2203)	88-5043 (FXH-2106A)
XH-2533 (93-5068)	"	"	94-5212 (FXH-2312A-2)	[NA]	[NA]	5-5011 (FXH-2403)	"
XH-2593 (93-5069)	"	"	"	[NA]	[NA]	"	88-5041 (FXH-2106B)
XHD-2600 (93-5070)	"	"	3-5014 (FXG-2002A-2)	4-5010[d] (FXG-1008)	30-5009[d] (FXG-38)	5-5029 (FXH-2103)	88-5052 (FXG-1106B)
XHD-2655 (93-5071)	"	"	"	"	"	"	"
XHD-2656 (93-5072)	"	"	"	"	"	"	88-5053 (FXG-1106G)
XHD-2657 (93-5073)	"	"	"	"	"	"	88-5052 (FXG-1106B)
XHD-2658 (93-5074)	"	"	"	"	"	"	88-5053 (FXG-1106G)
XHD-2659 (93-5075)	"	"	"	"	"	"	88-5052 (FXG-1106B)
XH-2677 (93-5076)	"	"	94-5092 (FXH-2212-2)	[NA]	[NA]	5-5030 (FXH-2203)	88-5043 (FXH-2106A)
XH-2686 (93-5077)	"	"	3-5014 (FXG-2002A-2)	4-5010[d] (FXG-1008)	30-5009[d] (FXG-38)	5-5029 (FXH-2103)	88-5040 (FXG-1106A)
XHD-2697 (93-5078)	"	"	3-5015 (FXG-2102-2)	4-5004 (FXG-1108A)	30-5004 (FXG-138)	"	88-5054 (FXG-1106J)
XHD-2700 (93-5079)	"	"	3-5014 (FXG-2002A-2)	4-5010[d] (FXG-1008)	30-5009[d] (FXG-38)	"	88-5052 (FXG-1106B)
XHD-2752 (93-5083)	"	"	3-5015 (FXG-2102-2)	4-5012 (FXG-1208)	30-5013 (FXG-238)	"	88-5092 (FXG-1106C)
XH-2780 (93-5085)	"	"	94-5212 (FXH-2312A-2)	[NA]	[NA]	"	88-5043 (FXH-2106A)
XH-2781 (93-5086)	"	"	3-5013 (FXG-2002B-2)	4-5010[d] (FXG-1008)	30-5009[d] (FXG-38)	"	88-5044 (FXG-1106D)
XHD-2800 (93-5089)	"	"	3-5015 (FXG-2102-2)	4-5004 (FXG-1108A)	30-5004 (FXG-138)	"	88-5054 (FXG-1106J)
XHD-2813	"	"	3-5014 (FXG-2002A-2)	4-5010[d] (FXG-1008)	30-5009[d] (FXG-38)	"	88-5052 (FXG-1106B)
XHD-2900 (93-5101)	"	"	3-5015 (FXG-2102-2)	4-5004 (FXG-1108A)	30-5004 (FXG-138)	"	88-5054 (FXG-1106J)

[b] 89-5070A (FXH-145BS) Breaker Arm Felt Pkg. also available if required.
[c] 44-5167 (FXH-344) Condenser Bracket also available if required.
[d] 90-5073 Dist. Rotor & Gear Pkg. must be used when replacing the Rotor or Gear on XHG-2 & 4 Magneto under Serial No. 313897.
[NA] Not available.
[j] 94-5076(FXH-162S) Gasket Pkg.(6Pc.) also available if required.

Assembly	Main Housing [e] (8)	Terminal Stud Package (9)	Cam Felt Package (10)	Dist.Cap Nipple Package (11)	Flange Gasket Package (12)	Bearing Cage (13)	Impulse Coupling Package (14)
XH-2525 (93-5066)	[NA]	90-5042	43-5030A (FWM-75DS)	[NA]	[NA]	94-5156 (FXH-1007A)	[NA]
XH-2531B,C (93-5067)	94-5098 (FXH-3101B)	"	"	[NA]	94-5108A (FXH-40S)	"	94-5105 (FXH-3300A)
XH-2533 (93-5068)	94-5229 (FXH-3301C)	94-5001 (FXH-2309)	"	[NA]	[NA]	94-5189 (FXH-207)	94-5106 (FXH-3400C)
XH-2593 (93-5069)	[NA]	90-5042	"	[NA]	[NA]	94-5156 (FXH-1007A)	[NA]
XHD-2600 (93-5070)	[NA]	"	"	90-5051	94-5108A (FXH-40S)	"	[NA]
XHD-2655 (93-5071)	94-5203 (FXG-3101A)	"	"	"	"	"	90-5120
XHD-2656 (93-5072)	"	"	"	"	"	"	70-5110 (FXH-2005P)
XHD-2657 (93-5073)	"	"	"	"	"	"	70-5062 (FXH-2505B)
XHD-2658 (93-5074)	"	"	"	"	"	"	70-5058 (FXH-2705B)
XHD-2659 (93-5075)	94-5254 (FXG-3101F)	"	"	"	"	"	70-5111 (FXH-2005R)
XH-2677 (93-5076)	[NA]	"	"	[NA]	[NA]	"	90-5119
XH-2686 (93-5077)	[NA]	"	"	[NA]	[NA]	"	[NA]
XHD-2697 (93-5078)	[NA]	[NA]	"	90-5109	94-5108A (FXH-40S)	"	[NA]
XHD-2700 (93-5079)	[NA]	90-5042	"	90-5051	[NA]	"	70-5057 (FXH-2105C)
XHD-2752 (93-5083)	94-5256 (FXG-3301C)	"	"	90-5109	[NA]	"	70-5121 (FXH-2005T)
XH-2780 (93-5085)	[NA]	"	"	[NA]	[NA]	"	[NA]
XH-2781 (93-5086)	94-5203 (FXG-3101A)	"	"	[NA]	94-5108A (FXH-40S)	"	94-5105 (FXH-3300A)
XHD-2800 (93-5089)	[NA]	"	"	90-5109	"	"	[NA]
XHD-2813 - - - -	[NA]	[NA]	"	90-5051	"	"	[NA]
XHD-2900 (93-5101)	[NA]	90-5042	"	90-5109	[NA]	"	70-5090 (FXH-2005E)

[e] 70-5089(FXH-1030A) Dust Cover also available if required.

[NA] Not available.

XH-2525 to XHD-2900

Assembly	Drive End Hdwe. Package (15)	Impulse Stop Package (16)	Trip Arm Package (17)	Drive Cup Spring (18)	Drive Cup & Spring Assembly (19)	Drive Gear (20)	Impulse Not Package (21)
XH-2525 (93-5066)	90-5027	[NA]	[NA]	94-5016 (FXH-55)	[NA]	[NA]	[NA]
XH-2531B,C (93-5067)	"	94-5070 (FXH-210S-1)	90-5033	"	94-5352 (FXH-1305)	[h]	90-5019
XH-2533 (93-5068)	"	94-5348 (FXH-210S-2)	"	"	94-5371 (FXH-1905)	[NA]	[NA]
XH-2593 (93-5069)	"	94-5070 (FXH-210S-1)	[NA]	"	94-5349 (FXH-1605R)	[NA]	[NA]
XHD-2600 (93-5070)	"	"	[NA]	"	94-5074 (FXH-1215B)	[NA]	[NA]
XHD-2655 (93-5071)	"	"	90-5033	"	94-5373 (FXH-1005N)	[NA]	[NA]
XHD-2656 (93-5072)	"	"	"	"	94-5374 (FXH-1005P)	[NA]	[NA]
XHD-2657 (93-5073)	"	"	"	"	94-5359 (FXH-1505B)	[NA]	[NA]
XHD-2658 (93-5074)	"	"	"	"	94-5364 (FXH-1705B)	[NA]	[NA]
XHD-2659 (93-5075)	"	"	"	"	94-5375 (FXH-1005R)	[NA]	[NA]
XH-2677 (93-5076)	"	"	[NA]	"	94-5352 (FXH-1305)	[NA]	[NA]
XH-2686 (93-5077)	"	"	[NA]	"	"	[NA]	[NA]
XHD-2697 (93-5078)	"	[NA]	[NA]	[NA]	[NA]	[NA]	[NA]
XHD-2700 (93-5079)	"	94-5070 (FXH-210S-1)	90-5033	94-5016 (FXH-55)	94-5351 (FXH-1105)	[NA]	[NA]
XHD-2752 (93-5083)	"	94-5071 (FXH-410S)	"	"	94-5376 (FXH-1005T)	[NA]	[NA]
XH-2780 (93-5085)	"	[NA]	[NA]	"	94-5367 (FXH-1005J)	[NA]	[NA]
XH-2781 (93-5086)	"	94-5070 (FXH-210S-1)	90-5033	"	94-5352 (FXH-1305)	[NA]	90-5019
XHD-2800 (93-5089)	"	"	"	"	70-5091 (FXH-1215A)	[NA]	[NA]
XHD-2813 - - -	"	[NA]	[NA]	"	[NA]	[NA]	[NA]
XHD-2900 (93-5101)	"	94-5070 (FXH-210S-1)	90-5033	"	94-5377 (FXH-1005E)	[NA]	[NA]

[h] Use 30-5000 (FXH-200B) Gear on Teledyne Wisconsin TE,TF Engine.
Use 30-5011 (FXH-200C) Gear on Teledyne Wisconsin TH,TJD Engine.

[NA] Not Available.

MODEL XH AND XHD WICO MAGNETOS

DISTRIBUTOR CAP OR COVER

To remove the cap or cover, loosen the screws which hold it in place. It is not necessary to completely remove these screws. When replacing the cap or cover, make sure the gasket is properly in place. Check to make certain the distributor arm does not hit the inserts in the cap.

DISTRIBUTOR ARM

After the distributor cap has been removed, the distributor arm may be pulled off the shaft or bridge. When replacing the geared-type arm, make sure the timing marks on the arm and pinion gear are in line.

BREAKER POINTS

Breaker points should be adjusted to .015", measuring with a feeler gauge of that thickness. After adjusting the breaker points, tighten the two retaining screws.

To replace the contacts, remove the breaker spring clamp screw, the breaker arm lock, and washer. Then lift the breaker arm from its pivot. Remove the aligning washer and the two fixed contact clamp screws. Then the breaker plate can be removed

If the contacts need replacing, it is recommended that both the fixed contact and the breaker arm be replaced at the same time, using a replacement breaker contact set.

After assembly, contacts should be adjusted as described above. The contacts should be kept clean at all times. Lacquer thinner is an ideal cleaner for this purpose. Use WICO tool S-5449 to adjust the alignment of the contacts so that the surfaces meet squarely.

CONDENSER

To remove the condenser, disconnect the condenser lead by removing the breaker arm spring screw, then remove the two condenser clamp screws and the condenser clamp. When replacing the condenser, make sure it is properly placed and the clamp screws are securely tightened.

Condenser Capacities

Condenser No.	Microfarads
X5614	.16-.20
X6916	.30-.34
X11818	.58-.62

COIL AND COIL CORE

The coil and coil core must be removed from the magneto housing as a unit. After the distributor cap and distributor arm have been removed and the primary wire disconnected from the breaker arm spring terminal, take out the two coil core clamp screws and remove the clamps. The coil and core can then be pulled from the housing. When replacing the coil, make sure that the bare primary wire is connected under the coil clamp screws and that the insulated wire is connected to the breaker arm spring terminal.

COIL TESTING

Coil testing should be done according to the directions furnished by the manufacturer of the particular tester you are using.

	GRAHAM TESTER MODEL 51					MERC-O-TRONIC MODEL 60	
Coil	Max. Sec.	Max. Pri.	Coil Index	Min. Coil Test	Max. Gap Index	Oper. Amp.	Sec. Cont.
X5700	7000	1.2	60	24	65	1.70	40-60
X5700B	9000	1.2	80	28	90	1.70	40-60
X5700C	8500	1.5	50	18	70	1.70	40-60
X6664	7000	.8	50	11	75	2.30*	. . .
X6762	7000	.7	60	18	55	2.50	40-60
X6936C	6500	1.2	50	24	60	1.75	. . .
X7585	6500	1.0	45	14	65	2.30	. . .
X7744	7000	1.2	60	24	65	1.70	. . .
X7886	7000	.7	60	18	55	2.20	30-50
X7895	7000	.8	50	11	75	2.60	45-65
X8545	7000	.7	60	18	60	2.00	40-60
X8964	7000**	1.0	60	17	65*	2.00	. . .
X11600	9000	1.2	80	29	90	1.90	40-60
X12609	8000	1.1	55	29	55	1.70	55-70
X12810	25000**	1.6	50	19	50*	1.50	65-75
X30081B	7500	2.9	50	27	55	1.10	40-50

*Connect one secondary terminal to ground for this test.

**Between two secondary terminals-when making gap test, ground one secondary terminal

REMOVAL OF COIL FROM CORE

The coil is held tight on the core by a spring wedge. It will be necessary to press against the coil core with considerable force to remove it from the coil. When installing the core in a new coil, the coil should be supported in such a way that there is no danger of the primary of the coil being pushed out of the secondary.

MAGNETIC ROTOR ASSEMBLY

To remove the magnetic rotor assembly, remove the distributor cap, the distributor arm, and pinion gear. The pinion gear may be pulled from the rotor shaft after the retaining screw is removed. Remove the four impulse stop clamp screws. Then the magnetic rotor assembly may be pulled from the main housing by holding the main housing in one hand and pulling on the drive cup with the other hand.

When replacing the magnetic rotor assembly, make sure that the inside of housing and rotor are free from dirt or chips; also, that the impulse stops are on the correct side and the top witness mark is in the correct position before tightening the four impulse stop clamp screws.

IMPULSE COUPLING (Impulse Coupling Lock)

The impulse lock nut is best removed by placing the magnetic rotor in a vise (Use brass jaws) and tighten them lightly against the flat side of the magnetic rotor. After securing the rotor, remove nut with a 3/4" socket WICO tool No. S-4704, if the nut has a hex-head. On gear-driven magnetos, remove the snap ring and thrust washer. Then after removing the drive cup, the impulse coupling lock nut can be removed with a spanner wrench, WICO tool No. S-9961. If you desire to remove the impulse lock nut without removing the magnetic rotor assembly from the housing, insert an impulse holding tool, WICO tool No. S-10204, between the ear on the driven flange and an impulse stop clamp screw, and proceed as above.

There are two other impulse lock nuts. They are No. 6230, which has a fine thread (3/8-24) and No. 16-491C, which has a coarse thread (3/8-16). One or the other of these nuts are used on all XH and XHD type magnetos that are not gear driven.

DRIVE CUP AND DRIVE SPRING

To remove the drive cup, turn it in the direction of the proper magneto rotation until the trip arm latches against the impulse stop. Continue to turn the cup until the projections on the cup have cleared the projections on driven flange. Without the friction of these parts against each other, the cup can be pulled out far enough to allow it to unwind. A firm grip should be taken on the cup to prevent injury to the hand. Then, pull the cup with the spring still in it, off the shaft.

To remove the spring from the cup, it is only necessary to work the spring out of the cup with a screw driver.

In replacing the drive spring, locate the spring over the cup so that the outer eye of the spring is over the slot provided on the inside wall of the cup. For a clockwise magneto, the spring should be installed so that the turns spiral in toward the inner eye in a clockwise direction. For a magneto of counter clockwise direction, it should spiral inward in a counter clockwise direction. Next, insert the outer eye of the spring as far as possible into the proper slot. Then take the drive cup spacer, which contains the slot for the inner eye, insert a large screw driver in the center hole so it will bind. The drive cup can then be turned with the screw driver acting as a handle. Insert the inner eye of

the spring in the drive cup spacer slot and wind the spring around the spacer until the spirals close sufficiently to allow the spring to slide inside the drive cup. This method of winding the spring eliminates any possibility of distorting or scratching the spring surface. The spring may be more easily inserted if the lugs of the drive cup are securely held in a vise.

The model XH and XHD drive cups can be used interchangeably on magnetos of clockwise or counter clockwise rotation.

To reassemble the drive cup and spring to the XH magneto, proceed as follows:

The impulse lock nut has to be replaced first on gear-driven magnetos only. Then make sure that all parts are clean and there is grease between the turns of the impulse drive spring. Next, pull the inner eye with one turn of the spring out of the cup a little way. Place the cup over the end of the magneto rotor shaft, making sure the inner eye of the spring is in the notch provided in the drive cup spacer washer. Press the parts together, hold the impulse cup out far enough so that the projections on the drive cup clear the flange, and then give the cup a full turn as follows:

Make a half turn and allow the cup projections to lock against the driven flange; then, with a fresh hold on the drive cup, make the other half turn. On XHD magnetos, using 7908 and 7909 drive cup spacing washers, it is necessary to wind the cup an extra half turn. When the cup is wound, press it firmly into place and apply a small amount of grease to the bearing surface of the impulse lock nut.

XHD magnetos, before Serial No. 646915, were built with 16-583 and IVA-583 drive cup spacing washers (diameter 1"), which only allow one full turn of impulse spring windup. Magnetos, built after Serial No. 646914, have 7908 and 7909 spacing washers (diameter 7/8"), which allow one and a half turns of windup. This eliminates impulse flutter when the magneto is run at slow speeds just out of impulse. Therefore, it is recommended that on early magnetos, the spacing washers be replaced with 7908 and 7909 washers.

ADJUSTABLE DRIVE CUP

XH base mounted specifications XH-19, XH-20, XH-22, XH-23, and XH-169 have an adjustable drive cup, namely, X2084, which enables the lug angle on the drive cup to be set at any degree when the magneto is at advanced spark. The adjustment is made by removing the two coupling adjuster nuts and setting the lug plate in the desired position.

Several specifications of the model XH and XHD flange-mounted magnetos have our new style adjustable drive cup. To adjust the lug angle, loosen the two No. 10 set screws and loosen the lock nut two complete turns, using WICO tool No. S-10164. It may be necessary to hold the magneto rotor shaft from turning by inserting tool No. S-10204 between the driven flange and a stop plate clamp screw. Push the lock nut down until the lug plate can be turned. The lug plates are marked for easy setting. Line up the correct setting with the line on the cup flange, tighten the lock nut as tight as possible,

and tighten the set screws. It is recommended that the set screws be staked. It is not necessary to loosen the impulse lock nut to make the above adjustment.

Occasionally, these adjustable cups can be used on magnetos of other specifications to fit unusual engine applications.

TRIP ARM

To remove the trip arms, clamp the driven flange in a vise, push the point of a knife between the snap ring and the trip arm pivot, near the opening of the snap ring. This will spring the snap ring out a little, and by inserting a knife between the snap ring and pivot as far from the opening as possible, the ring may be pulled off. Now the trip arm may be removed. It is recommended that a new snap ring be used if the old one becomes damaged in the process of removal.

Magnetos, equipped with trip arm springs, do not have snap rings; therefore, it is merely necessary to unhook the spring from the trip arm and lift it off the end of the pivot

An easy method of putting on a new snap ring is to take a socket wrench or similar device of a size slightly larger than the pivot, put the ring on the pivot and press down on the ring with the open end of the socket wrench.

IMPULSE STOP GROUP

The impulse stop group serves, not only to hold the driven flange group and rotor stationary while the impulse is winding up, but also contains an oil seal which prevents the lubricating oil, used in the engine, from entering the magneto. The impulse stop groups can be used on magnetos of either rotation. For counter clockwise magnetos, the impulse stop lug should be on the left hand side of the magneto and conversely, when used on magnetos of clockwise rotation, the impulse stop lug should be on the right hand side of the magneto as viewed from the drive end.

The standard X5549 impulse stop group is used on most magnetos. The X5550 group, with two stop lugs, is used on four cylinder magnetos in which the distributor is not geared, such as XH1343. The X6578 group is used where a short lug is necessary, due to lack of clearance on the engine as on XH1059. The bearing retaining group X6603 is used on magnetos which do not incorporate an impulse coupling unit.

If a new oil seal is desired for the impulse stop group, it must be ordered separatel by No. 6199. A spring, finger-type oil seal will be found on some magnetos, but when replacing them, a regular oil seal No. 6199 should be used.

LAG ANGLE ADJUSTMENT (Lag angle and rotation are tabulated in the parts list section)

After the complete magnetic rotor assembly has been reassembled in the housing, it is necessary to adjust the impulse lag angle, which provides retarded spark for starting On one, two, and four cylinder magnetos, any impulse range from 5° to 42° may be found. On six cylinder magnetos, the range is 5° to 52 1/2°. The position of the impulse stop group determines the lag angle of the magnetos.

To set the lag angle, loosen the four impulse stop clamp screws at the outer edge of the stop group and set as follows:

The impulse stop plate has stamped on its face two witness marks 180° apart, one used for clockwise and the other for counter clockwise magnetos. These marks serve to register against corresponding marks 5° apart on the main housing, acting as a guide to the amount of rotation of the stop plate during the adjustment of the lag angle. When either the clockwise or counter clockwise witness mark on the impulse stop group is even with the center mark on the main housing, an impulse range of 13° is obtained, with one exception, namely, the six cylinder magnetos range will be 33°. On XH1042 magnetos, with a 6274 drive cup, it will be 3°. The rotation of the stop plate, in the same direction as the rotation of the magneto, increases the impulse range by the amount of its rotation. Thus, since the marks on the main housing are 5° apart, turning the stop plate one mark in the direction of magneto rotation from the center mark, will increase the range 5°. These range variations are only approximate and magneto should be tested on a rotary gap test stand and readjusted to accurately give range desired. After this adjustment has been made, be sure to tighten impulse stop clamp screws.

The above instructions for setting lag angle applies to all model magnetos, except XH1343, which is used by Wisconsin Motors Corporation. To set the lag angle on XH1343, have the impulse stop lugs to your right line up the witness mark on the impulse stop group with the timing mark on the housing. (Second from the top of magneto in a counter clockwise direction) This will give approximately 30° lag.

The proper lag angle for each specific magneto may be found in the parts lists. It is very important that the lag angle be correctly adjusted to the value given in these tables, to insure the most efficient performance of the engine for which the magneto is intended.

LUBRICATION

The XH and XHD magnetos do not require oiling. The drive end of the magnetic rotor is supported by a double-shielded bearing. It may be ordered with the bearing cage and snap ring by part No. X5521. The cam end of the magnetic rotor is supported by a porous,bronze bushing that is oil impregnated.

On flange mounted models, it is important to seal the impulse spacer to the magnetic rotor shaft to keep engine oil from entering the magneto. Use Perfect Seal No. 4 for best results.

ROTORS

The ability of magnet steel to retain its magnetism is known as its coercive property. Magnet steel used in model XH and XHD rotors has such extremely high coercive value, that it is practically impossible for these rotors to lose any appreciable amount of magnetism under any conditions. It is, therefore, not necessary to recharge these rotors.

The parts lists show the correct rotor for each specification magneto. The correct part number of each rotor is also stamped on the rotor at the factory, therefore, making identification very easy.

MAIN HOUSING

CAUTION: Under no condition should the four screws, holding the laminated cores in the main housing, be removed. These cores are put on at the factory and finished to a very close tolerance to maintain the proper air gap between the cores and rotor. DO NOT try to replace the distributor arm bridge on geared distributor housing.

REPLACEMENT FOR ROTOR BUSHING

In order to replace the bushing in the housing, it is necessary to use WICO rebushing tool S-10035 to properly locate bushing in respect to face of the breaker plate.

DUST COVER

If the magneto is equipped with a dust cover, it may be removed by removing the retaining screw. If cork gasket shows signs of wear, replace it.

WARNING

NEVER connect a battery in any way to a WICO magneto. In several magneto failure the trouble was found to be that someone had tried to boost the spark output by connecting a battery to the ground stud. If this is done, it will cause a direct short every time the points close. This burns the temper out of the breaker arm spring and pits the points. When the points are open, it overloads the primary of the coil and causes coil failure. Also by overloading the primary, it makes an electro-magnet out of the coil and coil core and this discharges the magnetic rotor.

XHE-4 AND XHE-6 MAGNETOS

Mechanically the XHE and XH are identical, using the same mountings, impulse, magnetic rotor, etc. Therefore, all of the servicing instructions for the XH and XHD magnetos are applicable to the XHE units.

Electrically the XHE magneto differs from the XH and XHD magneto in that instead of providing a high voltage within the magneto, the XHE produces a low voltage but with a high current value. This output is then connected to an externally-mounted, heavy-duty, oil-filled coil which transforms it into the high voltage required by the spark plugs. The high voltage is then fed back into the magneto distributor cap for distribution to the spark plugs.

COIL TEST DATA

Test specifications for the external coil, part No. X30081B, are listed on Page 2.

The internal coil, part No. X11239, cannot be tested on a coil tester. Use an ohmmeter or test light to check for continuity between the two coil leads. This is the only test necessary on this coil.

COIL AND COIL CORE

The coil must be removed from the magneto housing as a unit. After removing the distributor cap, disconnect the primary wire from the breaker arm spring terminal. Then take out the two coil core clamp screws and remove the clamps. Coil and core can then be pulled from the housing. When replacing this group, make sure that the bare primary wire is connected under the core clamp screw, and that the insulating wire is connected to the breaker arm spring terminal.

EXTERNAL COIL CONNECTION UNIT

A standard ground connection unit kit K6448 is used to connect the internal and external coils through the magneto housing.

WARNING

Under no condition should an outside source of current be connected to the grounding terminal, as this will seriously damage the electrical circuit of the magneto.

FILE IN THE

S-883 PARTS & SERVICE MANUAL

TECHNICAL DATA

XH-XHD-XHE

REPLACEMENT INFORMATION

Issued 10-30-69

WICO INSTALLATION INFORMATION

Applications, rotation, and lag angles are contained in the magneto replacement information of the Application Data Section.

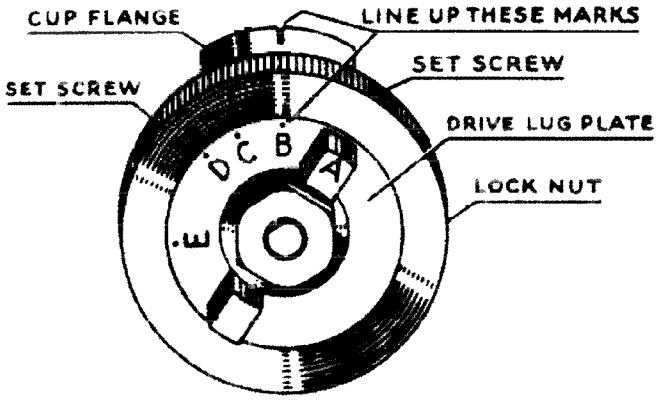
Adjustable Impulse Coupling Units

The Wico adjustable coupling for flange-mounted magnetos was developed to reduce the number of different models stocked by dealers. The use of this coupling provides a unit which can be easily set to fit the many drive lug angles used by various engine manufacturers. When setting the drive lug plate, it is not necessary to remove the coupling from the magneto, nor does it involve the purchase of expensive tools.

The most common Wico specifications are the standard four cylinder flange mounted XH-2500 and XH-3000. The new line of heavy duty magnetos include the four and six cylinder flange mounted XHD-2600, XHD-2800, XHD-3100, and XHD-3400.

INSTRUCTIONS FOR DRIVE LUG SETTINGS

Wico XH-4 & XHD-4 Magnetos

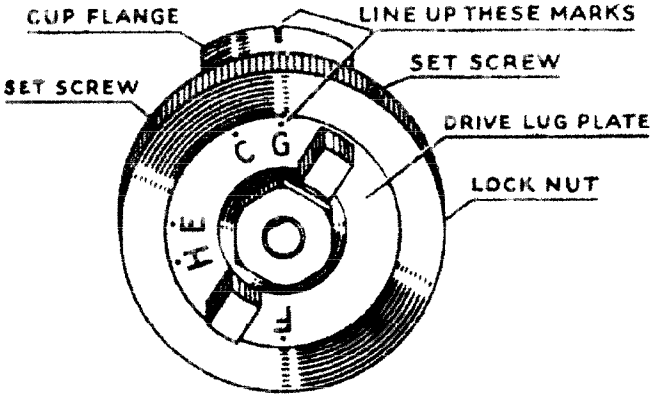


To adjust the drive lug setting, loosen the two No. 10 set screws and loosen the lock nut two complete turns, using Wico tool No. S-10164. It may be necessary to hold the magneto rotor shaft from turning by inserting tool No. S-10204 between the driven flange and the two bottom stop plate screws. Push the lock nut down until the lug plate can be turned. The lug plates are marked with settings A through E for ease in adjustment.

Line up the desired setting with the line on the cup flange. Tighten the lock nut as tight as possible and tighten the set screws. It is not necessary to loosen the shaft nut or remove the impulse to make the above adjustment. Illustration shows a "B" setting.

INSTRUCTIONS FOR DRIVE LUG SETTINGS

Wico XHD-6 Magneto



To adjust the drive lug setting, loosen the two No. 10 set screws and loosen the lock nut two complete turns, using Wico tool No. S-10164. It may be necessary to hold the magneto rotor shaft from turning by inserting tool No. S-10204 between the driven flange and the two bottom stop plate screws. Push the lock nut down until the lug plate can be turned. The lug plate is marked with settings C, E, F, G, and H.

Line up the desired setting with the line on the cup flange. Tighten the lock nut as tight as possible and tighten the set screws. It is not necessary to loosen the shaft nut or remove the impulse to make the above adjustment. Illustration shows a "G" setting.

1. The impulse lock nut ring must be tightened on every magneto. As this is a universal magneto subject to change before sale, no attempt to tighten the lock ring was made at the factory.

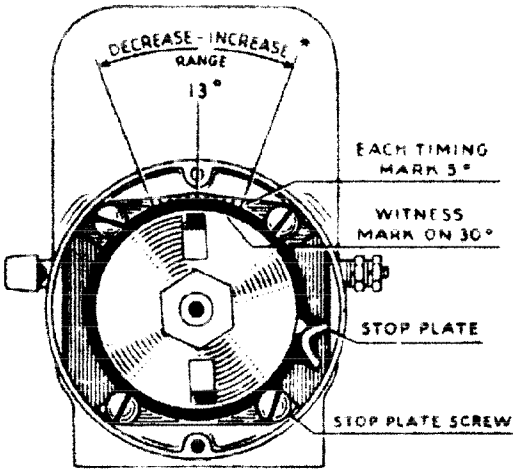
2. The serrations on the lug plate and the cup must be meshed before tightening the lock ring. Position of serrations can be seen through the wrench hole in the rim of the lock nut ring.

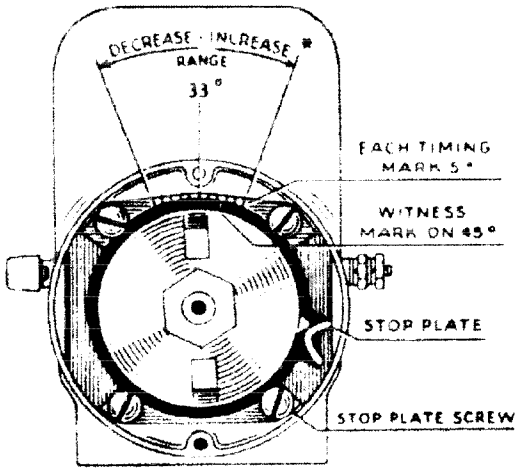
3. The two set screws located in the rim of the lock nut ring must be tightened on every magneto before sale.

INSTRUCTIONS FOR CHANGING LAG ANGLE

The reference to impulse lag angle refers to the amount of retard in degrees from the position of advance spark. Lag angle is expressed in terms of magneto degrees and will differ from that shown on engine specifications depending on the ratio of engine revolutions to magneto revolutions obtained from magneto drive gears.

On Wico magnetos, the amount of impulse lag is determined by the position of an impulse stop plate. This plate has a witness mark which is aligned with corresponding markings on the main housing of the magneto. The position of the impulse stop plate is maintained by four stop plate screws and can be easily changed to provide any desired lag angle.





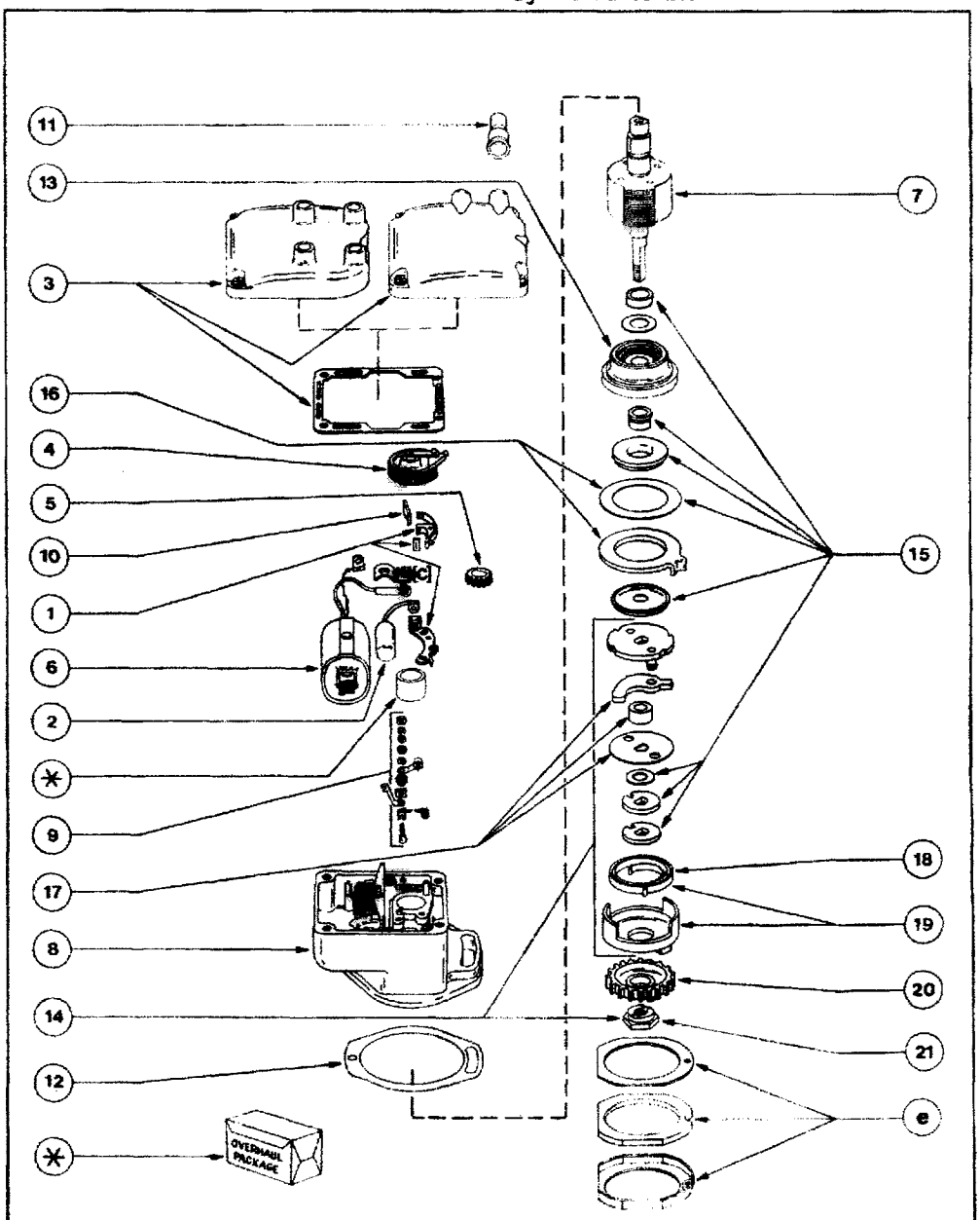
The impulse lag on many of the Standard XHG-4 Service Specifications and all of the heavy duty XHD-4 Standard Service Specifications are set at the factory for 30°.

To change the lag angle, loosen the four stop plate screws shown in the sketch and move the impulse stop group in the direction outlined. If the witness mark on the impulse stop plate were lined up with the center timing mark on the magneto housing the lag angle or impulse range would be 13°. On XHD and XHE units the timing mark would represent 33°. The marks on the housing are spaced 5° apar so the movement of the witness mark on the impuls stop plate from one timing mark to the next change the impulse range by 5°.

Before installing the magneto, hand impulse the unit. Be sure to have it in the position in which it will be mounted. Particular care must be taken when the magneto is to be mounted upside down. Often the impulse stop plate will have to be turned 1/2 turn so the stop will catch the pawl and impulse the magneto.

*Impulse range is increased and decreased in the directions shown when the magneto is run counter-clockwise. Reverse directions for a counterclock magneto.

XH-2525 to XHD-2900 Magneto Parts List



Exploded View of Typical XH Magneto