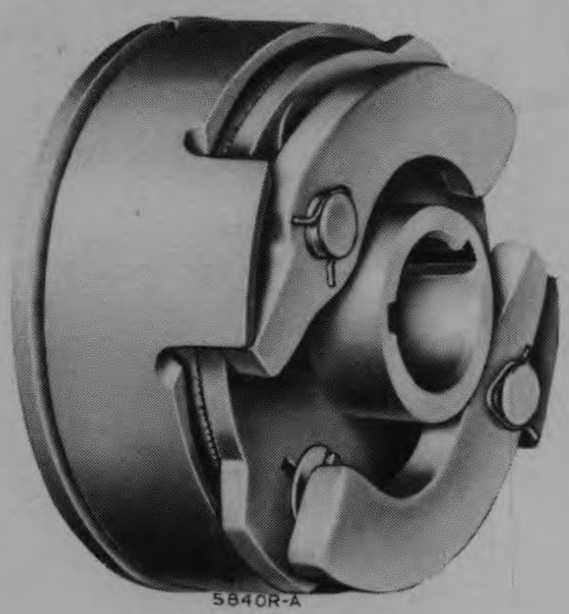
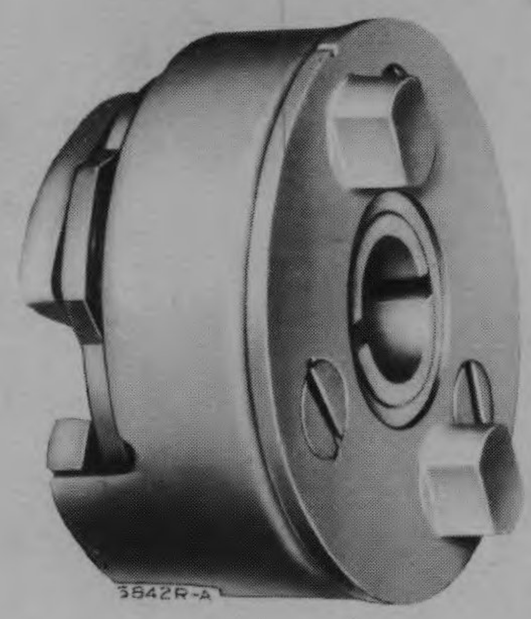
Instructions No. 2972

FAIRBANKS-MORSE

TYPE UE UNIVERSAL IMPULSE COUPLING





Adjustment Information

GENERAL DESCRIPTION

The Type UE impulse coupling is a highly adaptable unit which may be used as a replacement for all modifications of the Type UB coupling and also the Type UA, when used with Float Disc A2862. With two hub plate assemblies and two hub assemblies available, a selection of lag angles from 10° to 50° either clockwise or counterclockwise is available in multiples of 5°. Coupling Hub Plate Assembly A1446 is used for clockwise rotation, and is replaced by the B1446 for counterclockwise rotation. Coupling Hub Assembly T2563 is used for lag angles 10°, 20°, 30°, 40°, and 50°; Assembly U2563 is used for lag angles of 15°, 25°, 35°, and 45°. In addition, all possible lug angles from -30° to $+30^{\circ}$ are available by a simple adjustment on the coupling shell.

LUG ANGLE

The lug angle of an impulse coupling is determined by the position of the drive lugs at the instant the impulse spark occurs. S.A.E. standards designate this position as the horizontal center line as shown in Fig. 1. That is, if these lugs are located to provide the impulse spark when the horizontal center line is reached, the coupling shell is S.A.E. standard and is said to have a drive lug angle of 0°. If the impulse spark occurs 30° before the drive lugs reach the horizontal position, the lug angle is defined as -30°; if the impulse spark occurs 30° after the drive lugs reach the horizontal position, the lug angle is defined as $+30^{\circ}$.

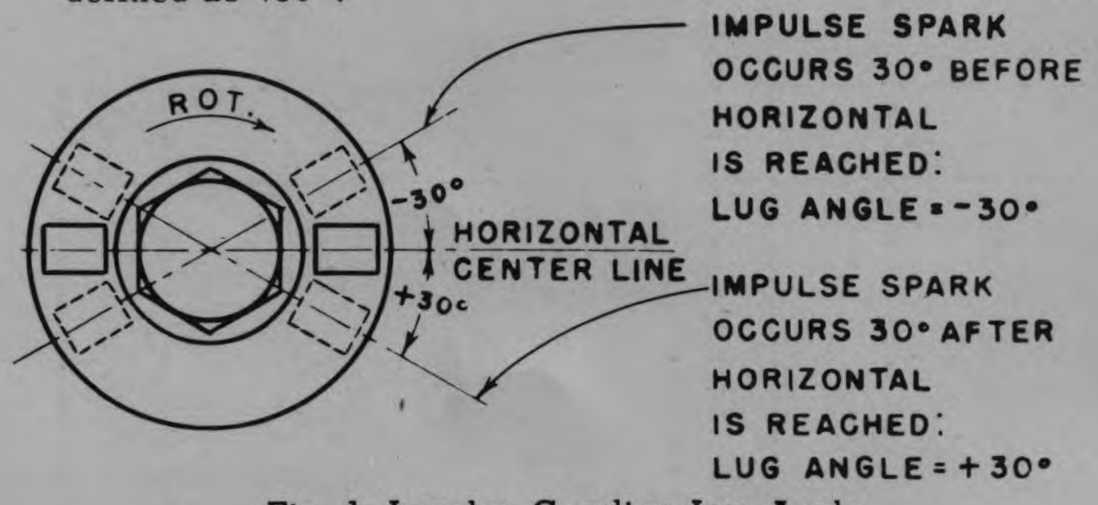


Fig. 1. Impulse Coupling Lug Angle.

All standard Fairbanks-Morse impulse couplings are designed to provide the impulse spark when the drive lugs are centered on the horizontal, but a number of Series U couplings are available with special drive lug angles in order to adapt replacement magnetos to various engines.

ADJUSTMENT OF TYPE UE IMPULSE COUPLING

Direction of Rotation

The direction of rotation of the Type UE impulse coupling is set by (1) observing the direction in which the drive spring is coiled and reversing it if necessary, (2) observing the coupling pawls and reversing them if necessary, and (3) using the correct coupling hub plate assembly for the desired direction of rotation.

Pull the coupling hub out of the coupling shell. Observe the drive spring within the coupling shell and compare the direction in which it is coiled with the drive springs shown in Fig. 2. If it is necessary to reverse the spring, pry it out of its anchorage with a small screwdriver and re-insert it so that it coils in the desired direction.

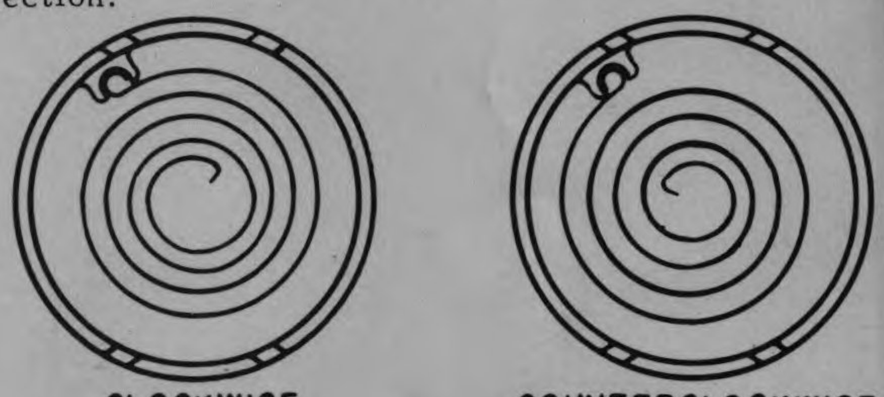


Fig. 2. Coupling Drive Springs.

Compare the setting of the coupling pawls with the settings shown in Fig. 3. If it is necessary to reverse them, the change can be made by prying off the pawl rivet snap rings, reversing the pawls on the pawl pins, and securing them in place with the snap rings.

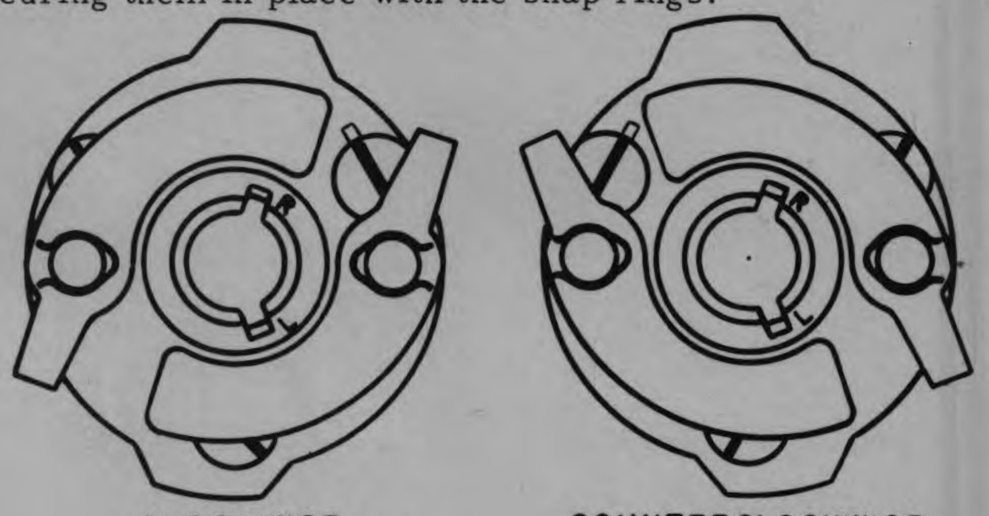


Fig. 3. Coupling Pawls.

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The two coupling hub plate assemblies available for use with the Type UE impulse coupling are stamped for identification, A1446 for clockwise rotation and B1446 for counterclockwise rotation. The appropriate assembly should be selected in adjusting the coupling for a particular application.

Lug Angle

To set the lug angle of the Type UE impulse coupling, loosen the three screws which fasten the drive lug assembly to the coupling shell, rotate the plate to the desired lug angle, and retighten and **stake the screws.** In Fig. 4, the graduations to the right of zero represent a negative value for the lug angle when the shell is used for clockwise rotation, and a positive value when the shell is used for counterclockwise rotation. Conversely, the graduations to the left of zero represent a positive value for the lug angle when the shell is used for clockwise rotation and a negative value when the shell is used for counterclockwise rotation.

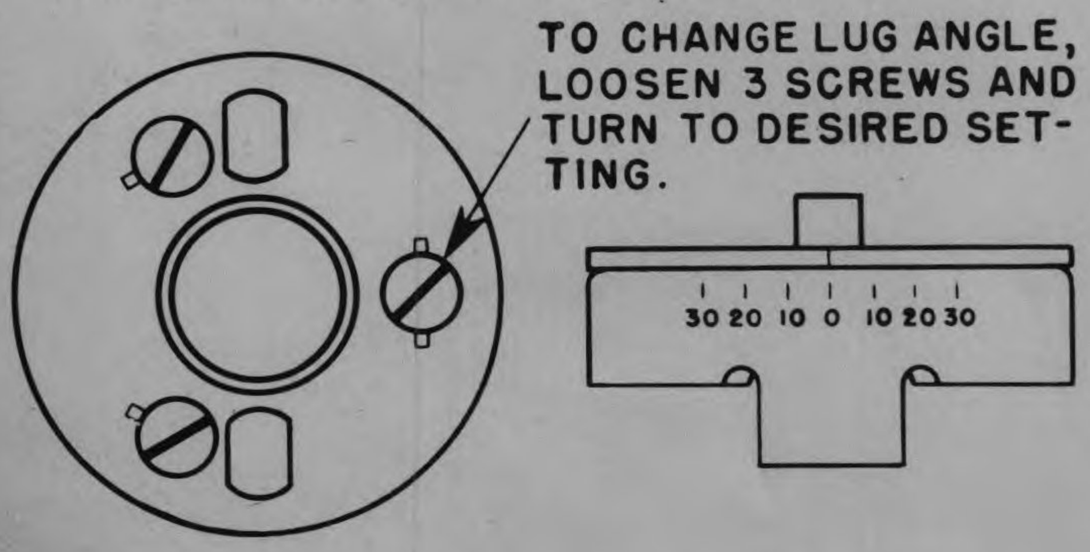

Fig. 4. Setting of Lug Angle.

Lag Angle

Two coupling hub assemblies are available to provide all the lag angles possible with the Type UE impulse coupling. The desired lag angle may be obtained by (1) removing the three screws which fasten the coupling hub plate assembly to the coupling hub assembly, (2) rotating the coupling hub assembly until the screw hole in the plate adjacent to the hub stop is aligned with the screw hole in the hub identified with the desired lag angle, and (3) screwing the plate assembly securely to the hub assembly so that the serrations between the two interlock. The screw heads should then be **staked in place.**

Four possible lag angle settings are given in Fig. 5 as illustrations. The blacked-in circles in each diagram represent the holes in which the screws are placed.

MOUNTING COUPLING ON MAGNETO ROTOR SHAFT

Two keyways are provided for mounting the coupling on the rotor shaft of the magneto, as shown in Fig. 3. When the coupling is adjusted for clockwise rotation, the keyway marked R should be used. When the coupling is adjusted for counterclockwise rotation, the keyway marked L should be used.

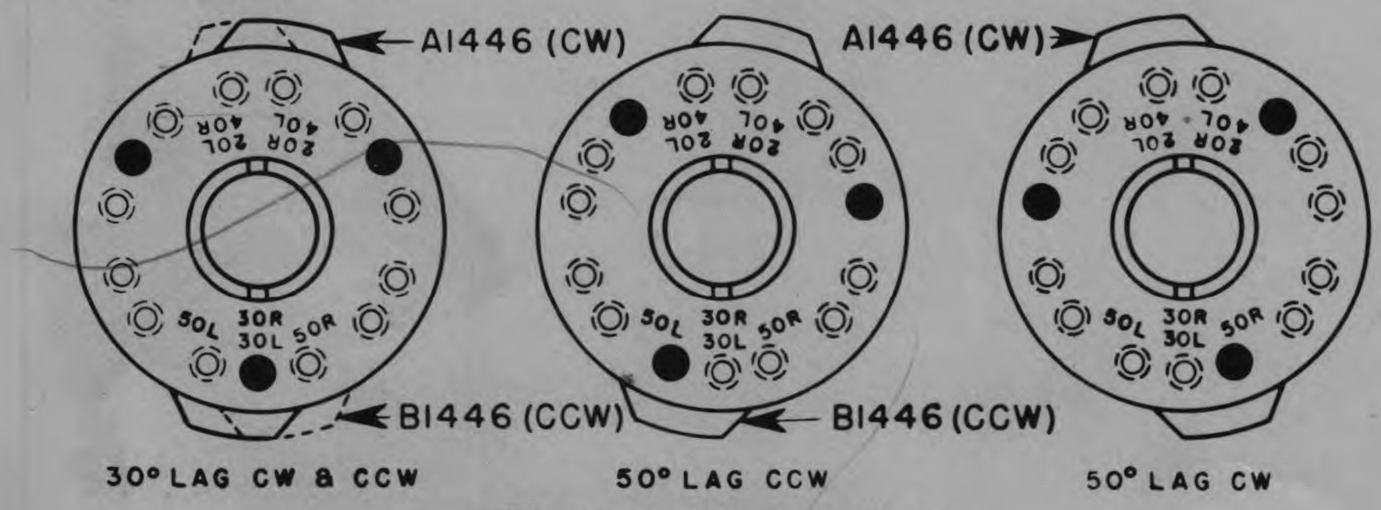

Fig. 5. Lag Angle Settings.

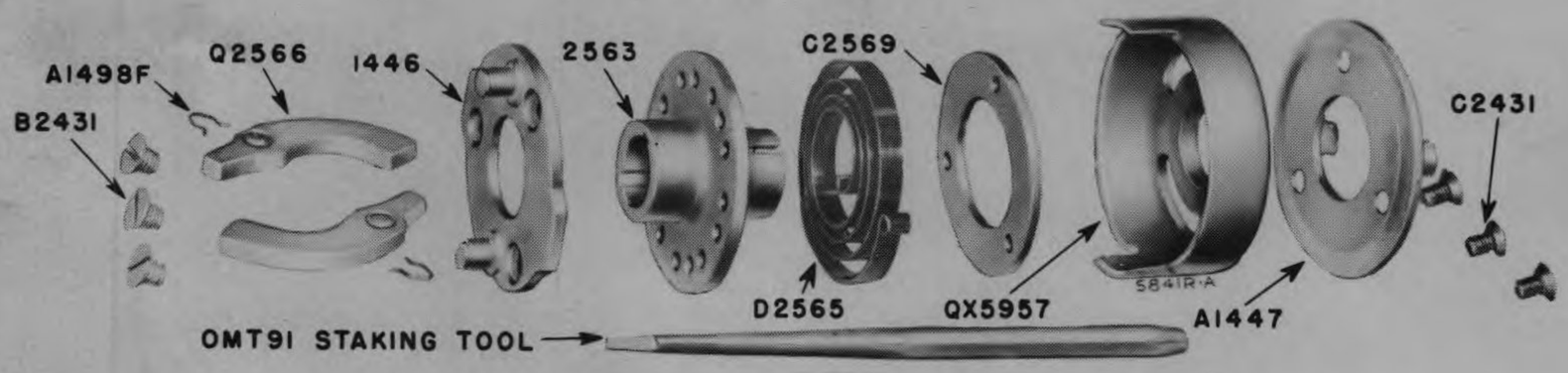

Fig. 6. Parts Identification, Type UE Impulse Coupling.

PARTS LIST - TYPE UE UNIVERSAL IMPULSE COUPLING

Order by Part No.	Name of Part	No. Used	Order by Part No.	Name of Part	No. Used
KZ2563C	IMPULSE COUPLING COMPLETE, CCW (15°-25°-35°-45° Lag Angle)	...	(A1498F)	Coupling Pawl Snap Ring	2
			(B2431)	Coupling Hub Screw	3
LZ2563C	IMPULSE COUPLING COMPLETE, CCW (10°-20°-30°-40°-50° Lag Angle)	...	(C2431)	Coupling Shell Screw	3
			(T2563)	Coupling Hub Assembly (10°-20°-30°-40°-50° Lag Angle)	1
MY2563C	IMPULSE COUPLING COMPLETE, CW (10°-20°-30°-40°-50° Lag Angle)	...	(U2563)	Coupling Hub Assembly 15°-25°-35°-45° Lag Angle)	1
NY2563C	IMPULSE COUPLING COMPLETE, CW (15°-25°-35°-45° Lag Angle)	...	(D2565)	Coupling Drive Spring	1
	2563C always includes:		(Q2566)	Coupling Pawl	2
(A1446)	Cplg. Hub Plate Assembly (CW)	1	(C2569)	Coupling Shell Washer	1
(B1446)	Cplg. Hub Plate Assembly (CCW)	1	(QX5957)	Coupling Shell	1
(A1447)	Coupling Drive Lug Assembly	1			

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