

SERVICE WIPAC BULLETIN	SUBJECT	RECTIFIER REPLACEMENT		
	Ref. No.	5255	CANCELS	
	AUTHORITY	F.K.M.	INSERT THIS BULLETIN INTO :-	No. 2 MANUAL
	DATE OF ISSUE	JULY 1955		

The new type of PANCAKE (W.I.) rectifier now employed with WIPAC equipment can be used to replace the earlier FINNED types (S.1 and S.2) if the following instructions are carried out. This information has been produced to help overcome any problems that may arise due to stock shortage.

NOTE:—Definitions of Rectifiers in use:—

S.1	THIN "FINNED" TYPE. NEGATIVE EARTH. 1st type to be used on WIPAC equipment.
S.2	THICK "FINNED" TYPE. POSITIVE EARTH.
W.1	"PANCAKE" TYPE. POSITIVE EARTH. Latest Model.

REPLACING S.1 RECTIFIER WITH W.1

1. Connect both A.C. leads and the D.C. lead according to colour as shown in diagrams.
2. REVERSE BATTERY LEADS because Rectifier S.1 is NEGATIVE earth.

REPLACING S.2 RECTIFIER WITH W.1

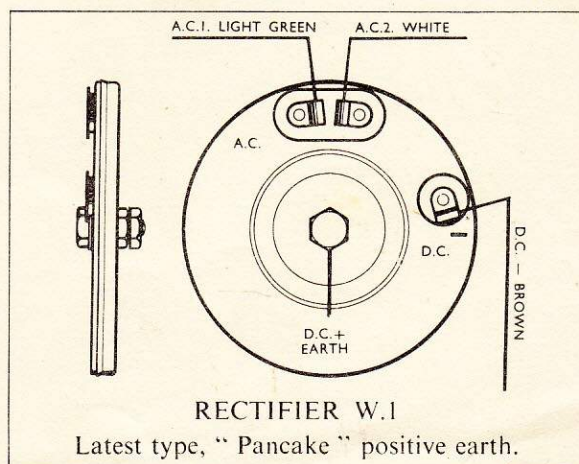
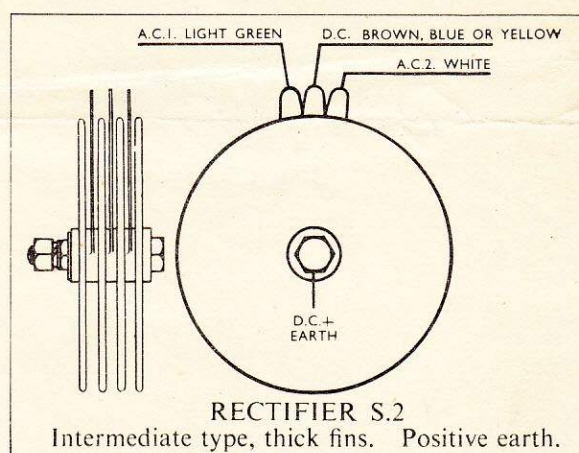
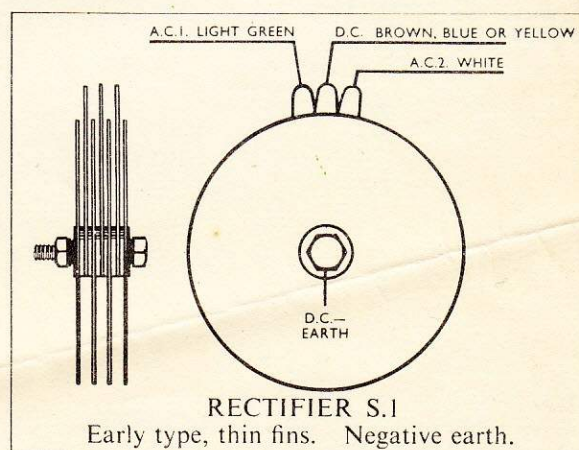
1. Connect both A.C. leads and the D.C. lead according to colour.

REPLACING W.1 RECTIFIER WITH W.1

1. Connect same wires in same holes.

Spare "Bullet" snap connectors are supplied with the W.1 replacement Rectifiers but in cases where it is difficult to solder these to the original connections a special loom of leads, ready made, is available.

The centre fixing hole of WIPAC Rectifiers is an EARTH connection and should be free from paint, grease etc.



SERVICE WIPAC BULLETIN	SUBJECT	RECTIFIER REPLACEMENT		
	Ref. No.	5255.T.	CANCELS	5255
	AUTHORITY	F.K.M.	INSERT THIS BULLETIN INTO :-	No. 3 MANUAL
	DATE OF ISSUE	AUG. 1958		

The new type of PANCAKE (W.I.) rectifier now employed with WIPAC equipment can be used to replace the earlier FINNED types (S.1 and S.2) if the following instructions are carried out. This information has been produced to help overcome any problems that may arise due to stock shortage.

NOTE:—Definitions of Rectifiers in use:—

S.1	THIN "FINNED" TYPE. NEGATIVE EARTH. 1st type to be used on WIPAC equipment.
S.2	THICK "FINNED" TYPE. POSITIVE EARTH.
W.1	"PANCAKE" TYPE. POSITIVE EARTH. Latest Model.

REPLACING S.1 RECTIFIER WITH W.1

1. Connect both A.C. leads and the D.C. lead according to colour as shown in diagrams.
2. REVERSE BATTERY LEADS because Rectifier S.1 is NEGATIVE earth.

REPLACING S.2 RECTIFIER WITH W.1

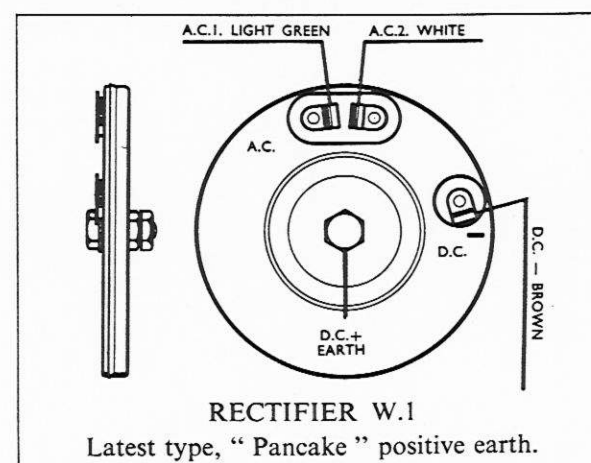
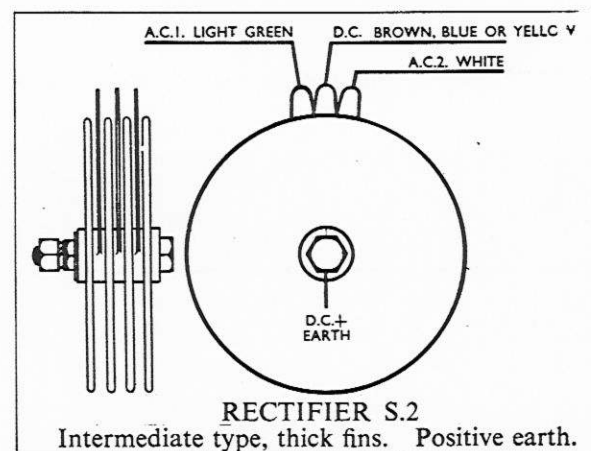
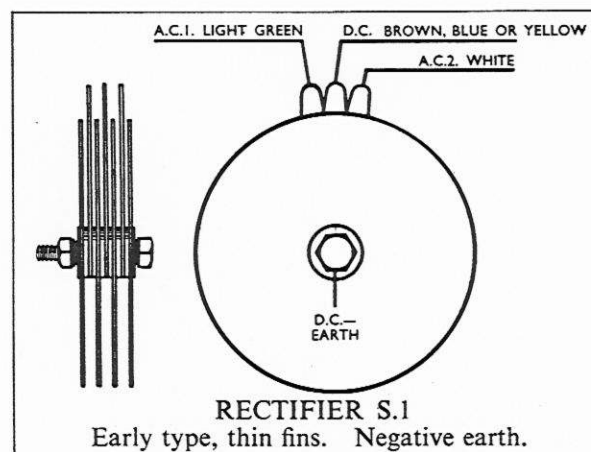
1. Connect both A.C. leads and the D.C. lead according to colour.

REPLACING W.1 RECTIFIER WITH W.1

1. Connect same wires in same holes.

Spare "Bullet" snap connectors are supplied with the W.1 replacement Rectifiers but in cases where it is difficult to solder these to the original connections a special loom of leads, ready made, is available.

The centre fixing hole of WIPAC Rectifiers is an EARTH connection and should be free from paint, grease etc.



SEE OVERLEAF FOR TEST INSTRUCTIONS

THE WIPAC GROUP — BLETCHLEY — ENGLAND
 TELEPHONE: BLETCHLEY 3321 TELEGRAMS: WICOMAGSCO BLETCHLEY



TESTING RECTIFIERS

The Wipac Rectifiers shown overleaf are full-wave bridge-connected types and should be tested for:—

1. Through flow.
2. Reverse flow.

THROUGH FLOW TEST.

Arrange a simple series circuit with a 6v. battery, a 30w. bulb and an ammeter (scale 10-0-10). The bulb will serve as a convenient resistor, and so when the circuit is completed the lamp will light and the discharge will be about 5 amps.

To proceed with the testing now break the circuit at any point and connect the positive side of the "break" to the insulated DC terminal of the rectifier. Then connect the other test wire to each AC terminal in turn which will provide two readings, which should be noted. Now connect the negative side of the test circuit to the earth bolt and follow by connecting the remaining lead to each AC terminal in turn, this again giving two more readings.

Should any of the four readings thus obtained be 1.5 or more amperes less than those obtained from a similar test on a new rectifier then the unit under test is defective.

REVERSE FLOW TEST.

It is often believed in error that a rectifier is a device which permits a flow of current in one direction but not in the other. The true situation is that a good rectifier will have a reverse flow of approximately 1/1000th of the forward flow. For example, a perfect rectifier that will pass 5 amps (5,000 milliamps) in the forward direction will pass about 5 milliamps in the reverse direction.

We, therefore, wish to obtain a test to indicate the value of the reverse flow, which should not be higher than 35 milliamps. Therefore, arrange a test circuit to include 6v. battery and a small bulb (6v .04 amp) so that when the circuit is completed the bulb will light and the current flow will be about 40 milliamps. Now break the circuit at any point and connect the positive side of the break to the centre bolt earth connection and then the negative side of the break to each of the AC terminals in turn, thus providing two indications. Now change test wires over so that the negative wire is connected to the live DC terminal and the positive side to each of the AC terminals, giving again two more indications. Should any of the four tests cause the bulb to light up fully the rectifier has elements defective in the reverse direction and should be replaced.



SERVICE WIPAC BULLETIN	SUBJECT		RECTIFIER REPLACEMENT	
	Ref. No.	5255T/2	CANCELS	5255 and 5255T
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	DATE OF ISSUE	April 1962		

The latest type SQUARE rectifier type W.2 supersedes the well-known "Pancake" type W.1, and besides being a direct replacement for W.1 can also be used to replace types S.1 and S.2.

RECTIFIER DEFINITIONS:

S.1	THIN "FINNED" TYPE. NEGATIVE EARTH. 1st type to be used with WIPAC equipment.
S.2	THICK "FINNED" TYPE. POSITIVE EARTH.
W.1	"PANCAKE" TYPE. POSITIVE EARTH.
W.2	"SQUARE" TYPE. POSITIVE EARTH.

REPLACING S.1 RECTIFIER WITH W.2

- Connect both A.C. leads and the D.C. lead according to the colour code as shown in the diagrams.
- Reverse the battery leads, *i.e.* connect the positive to earth instead of negative to earth, as W.2 is positive to earth as against the S.1 negative earth.

REPLACING S.2 WITH W.2

Connect A.C. leads and the D.C. lead according to the colour coding.

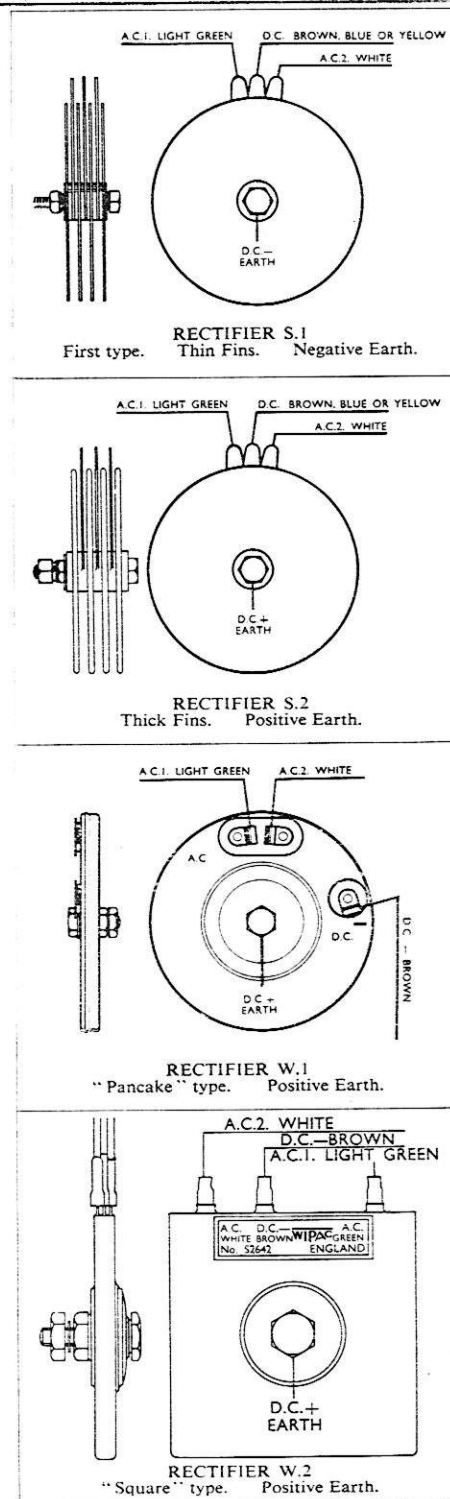
REPLACING W.1 WITH W.2

Type W.2 is a direct replacement and no difficulty should be experienced. Connect up in accordance with colour coding as previously used with W.1.

CAUTION:

The centre fixing bolt is an earth connection therefore a clean and efficient electrical contact must be maintained to the motor-cycle frame at all times.

FOR FULL RECTIFIER TESTING INSTRUCTIONS SEE TECHNICAL DATA SHEET REF. No. T.D.4



WIPAC TECHNICAL DATA

TESTING RECTIFIERS

TESTING RECTIFIERS

The WIPAC rectifiers illustrated on Service Bulletin 5255T/2 are full-wave bridge-connected types and should be tested for both through flow and reverse flow to determine their correct functioning.

Equipment required:

- (1) A good quality moving coil ammeter, Scale 10-0-10.
- (2) A well-charged 6-volt BATTERY.
- (3) A 6-volt 30-watt BULB.
- (4) A 6-volt 0.04-amp BULB.

THROUGH FLOW TEST

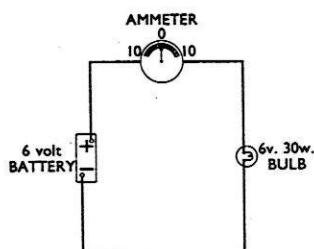


Diagram 'A'

The bulb will light and a reading of approximately 5 amperes will be registered on the meter.

First make up a simple series circuit as shown in diagram 'A'.

To proceed, remove the positive lead from the battery and bridge the gap by connecting the battery positive to the brown (D.C. negative) terminal of the rectifier to be tested, and the ammeter wire to the white and green terminals (A.C. terminals) in turn. In each case the bulb should light and the reading on the ammeter to be in the region of 4.5 amperes. Remove the rectifier and restore the original circuit as diagram 'A'.

Now remove the negative lead from the battery and connect the battery negative to the earth bolt or rectifier case, and connect the bulb lead to each of the A.C. (green and white) terminals in turn. The resultant ammeter readings again should be 4.5 amperes with the bulb alight.

N.B.—The ammeter readings on a brand new rectifier will be approximately 4.5 amperes, but after a period in service the values may fall. Readings above 3 amperes are satisfactory, but below this figure the rectifier should be discarded.

REVERSE FLOW TEST

It is generally assumed that a rectifier is a device which permits a flow of current in one direction but not in the other. The true situation is that a good rectifier will have a reverse flow, but this is very small indeed compared to its forward flow.

WIPAC type rectifiers should not have a reverse flow in excess of 35 milliamps. To check this condition make up a circuit as diagram 'B'.

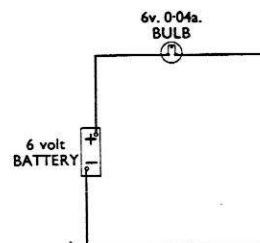


Diagram 'B'

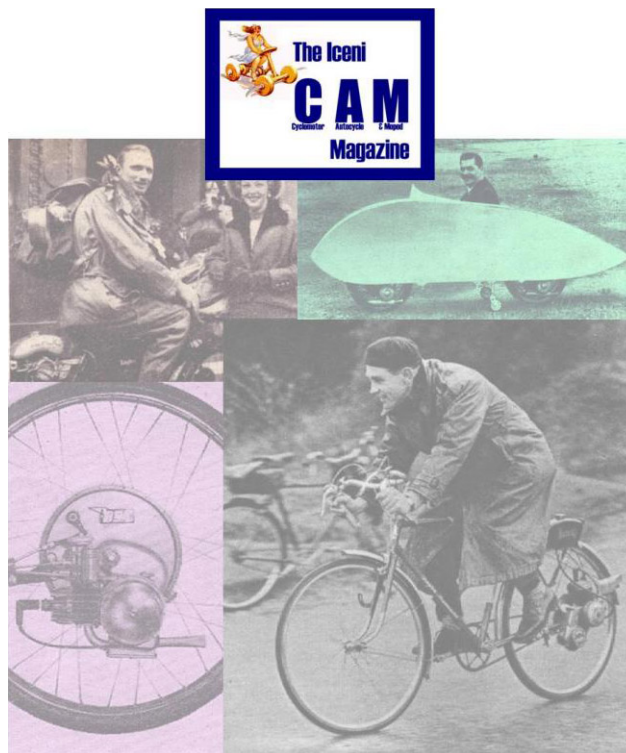
The 6-volt 0.04-amp Bulb has a current consumption of 40 milliamps. When the circuit is completed as shown the bulb will light.

Proceed by removing the positive lead from the battery and bridge the gap by connecting the battery positive to the rectifier earth bolt or case and the bulb wire to each of the A.C. terminals (green and white) in turn. If the bulb lights in either case the reverse flow is excessive and the rectifier is faulty.

Remove the rectifier and restore the circuit as in diagram 'B'. Disconnect the battery negative and bridge the gap by connecting the battery negative to the D.C. negative (brown) terminal and the bulb lead to each of the A.C. (green and white) terminals in turn. Again, if the bulb lights in either case the unit is defective and the rectifier must be replaced.



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