Service Sheet No. AUA 236
July 1964

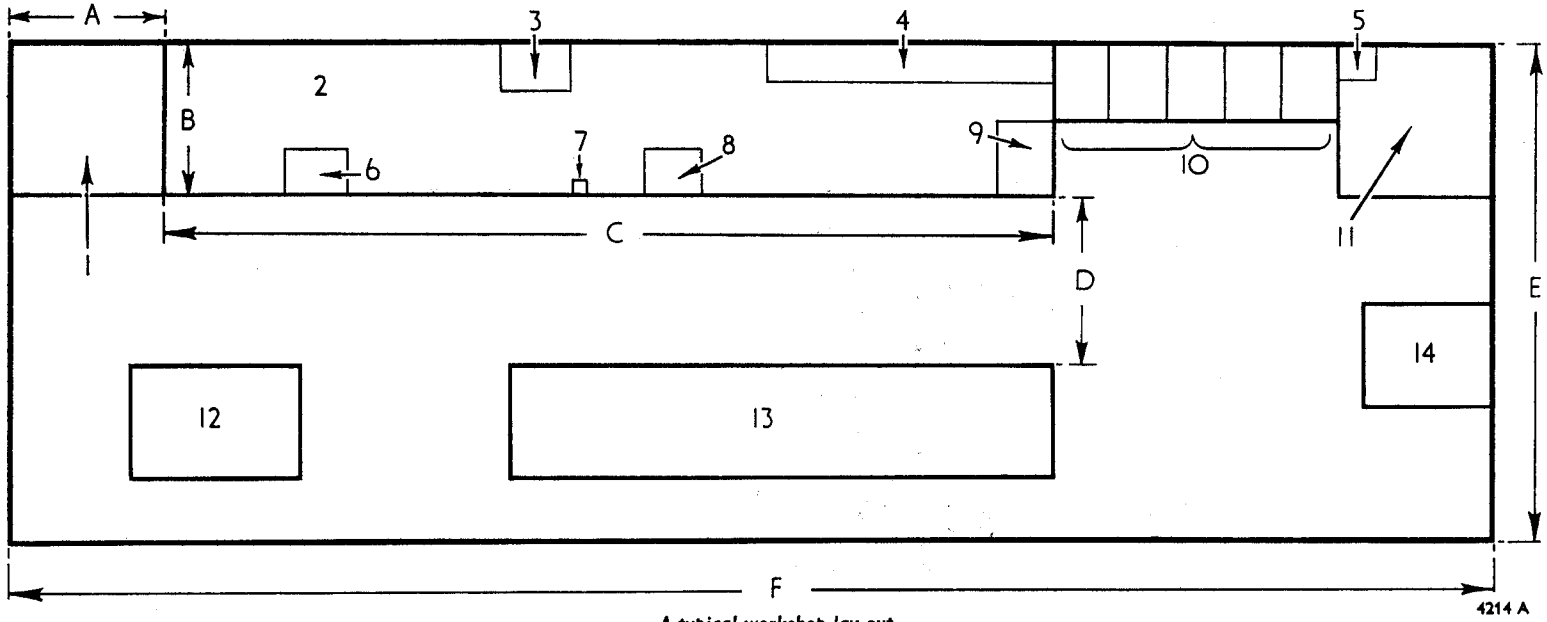
THE

FUEL PUMP

RECONDITIONING

INSTRUCTIONS

MANUFACTURED
by
THE S.U. CARBURETTER COMPANY LIMITED
Proprietors: MORRIS MOTORS LIMITED
WOOD LANE · ERDINGTON · BIRMINGHAM 24
TELEPHONE: ERDINGTON 7371 (9 lines) TELEGRAMS: CARBURFLEX, BIRMINGHAM



A typical workshop lay-out

A. 3 ft. (·9 m.).
B. 3 ft. (·9 m.).
C. 18 ft. (5·4 m.).
D. 3 ft. 6 in. (1 m.).
E. 10 ft. (3 m.).
F. 30 ft. (9 m.).

1. Tray for pumps to be reconditioned (capacity 50).
2. Bench.
3. Continuity test.
4. Box for Service Tools and gauges.
5. Battery Charger.
6. Hand press.
7. Compressed air supply.
8. Vice with soft jaws.
9. Box for test tools.
10. S.U. pump test stands and voltage control.
11. Tray for reconditioned pumps (capacity 50).
12. Scrap bin.
13. Spare parts bin.
14. Porosity test.

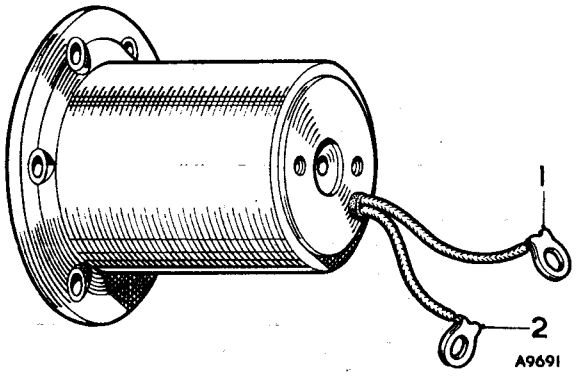


Fig. 1 The coil and housing assembly

1. 5 B.A. tag. 2. 2 B.A. tag.

COIL AND HOUSING

A range of leaflets on the dismantling, reassembling, and testing of S.U. fuel pumps is available and the appropriate instructions should be referred to for the operations not detailed in this leaflet.

The coil and housing are dealt with on the basis that they have been detached from the body of the pump and that the diaphragm assembly and the contact breaker assembly have been removed.

Dismantling

1. Clip off the terminal tags (1 and 2, Fig. 1).
2. Press out the coil from the coil housing. This can be done on an ordinary garage bench press using punch Part No. TUA 4.

Inspection

1. Examine the coil housing for cracks and damage to the joint face.
2. Check the depth of step in the housing (Fig. 3) using depth gauge TUA 1.
3. Check the small bore diameter in the end of the coil housing with plug gauge TUA 9 (Fig. 4).
4. On HP-type long-coil housings re-drill the $\frac{1}{16}$ in. (1·6 mm.) diameter vent hole in the corner of the flange as on short-coil housings (Fig. 5).

Assembly

Note. Commencing in 1961 HP pumps have been fitted with a shortened coil housing of the same overall length as the LP-type pump, i.e. approximately $\frac{9}{16}$ in. (14·3 mm.) shorter than the long housing. Production of the long-coil housing has been discontinued, but use can still be made of it in reconditioning if a coil, similar to that used on short housings but wound on the longer core, is used. This coil is not assembled so deeply into the housing as the original long coil; it is pressed in with the same tool as is used for the HP short-housing pumps.

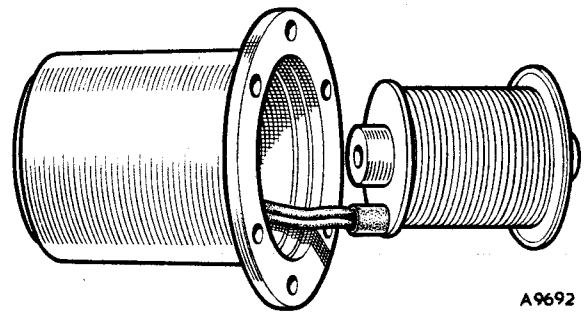


Fig. 2. The coil and housing separated

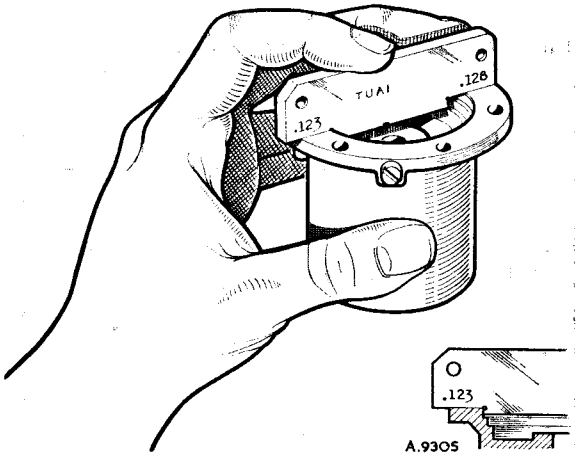


Fig. 3. Checking the depth of coil housing step using gauge TUA 1

It is essential when the short coils are fitted in long housings that the $\frac{1}{16}$ in. (1·6 mm.) diameter vent hole in the side of the coil housing should be re-drilled in the corner of the flange (see Fig. 5).

The diameter of the core on which the coil is wound is smaller on the 'L'-type pump than that of all other pumps.

1. Ensure that the housing is clean and free from rust, paint the housing black taking care to keep paint away from joint faces and to avoid clogging the vent hole.
2. Select the correct coil for the type of pump being reconditioned (see table).
3. Fit the rubber sleeve over the cables, and insert the coil in the housing, threading the cables through the $\frac{1}{8}$-in. diameter hole. Using the locating fixture TUA 17 mounted in a suitable press, press in the coil assembly with the punch specified for the particular type of coil.

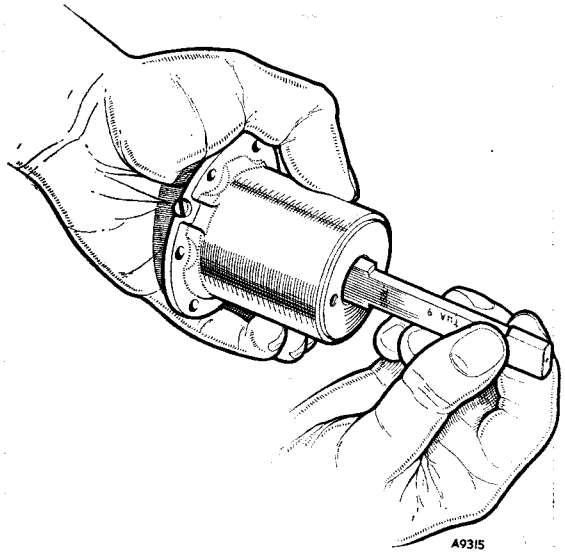


Fig. 4. Checking the housing small bore diameter using gauge TUA 9

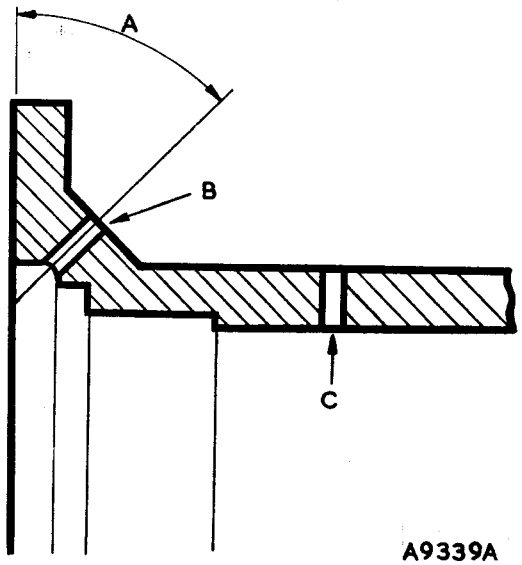


Fig. 5. The vent hole drilling

A. 45°. B. New drilling.
C. Existing drilling (earlier pumps).

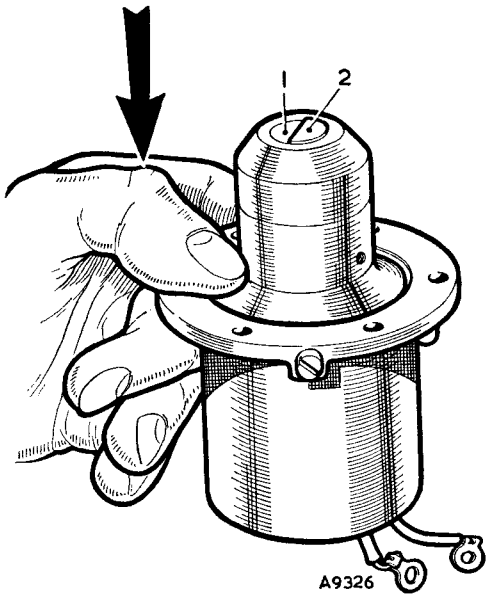


Fig. 6. Checking the position of the coil in its housing

1. Low 2. High

4. Check the position of the coil in its housing with the depth gauge specified for the type of coil (see Fig. 6).
5. Solder the terminal tags to the wires taking care that the smaller 5 B.A. tag is soldered to the longer wire.

DIAPHRAGM AND SPINDLE ASSEMBLIES

General

A range of diaphragm assemblies has been evolved to meet the special requirements of various types of pump, and the correct assembly to suit the particular type of pump being reconditioned must be selected from the list given.

The type of assembly with a brass spindle is gradually being superseded by an assembly with a steel spindle riveted in a different manner. Assemblies of either type may be used, according to availability.

Assemblies having two layers of material usually have one layer punched with small holes to prevent any fuel which might seep between the layers from vaporizing and causing swelling of the diaphragm assembly.

It is essential, during assembly, to check whether a packing or joint washer should be fitted with the diaphragm, between the coil housing and body. Two layer diaphragms do not need a joint washer, assemblies having one layer only must be assembled with a packing washer on the coil housing side of the diaphragm to maintain the correct assembly dimensions.

Certain assemblies have an extra layer of thin synthetic material in addition to the standard diaphragms. This is known as a 'barrier' diaphragm and is impervious to a wide variety of fuels. It is essential that a joint washer should always be fitted between the 'barrier' diaphragm and the pump body; jointing compound or dope should never be used.

COIL IDENTIFICATION COLOURS

Type of pump	Colour of Leads	Assembly Tool to be Used	Coil Position Gauge to be Used
Low-pressure 'L' 6-volt	Green	TUA 3	TUA 2
Low-pressure 'L' 12-volt	Red or Black	TUA 3	TUA 2
High-pressure HP long-coil housing	Brown	TUA 6	TUA 5
High-pressure LCS long-coil housing			
Reconditioned			
High-pressure HP long-coil housing alternatives ..	Cream, Yellow or Black	TUA 7	TUA 8
High-pressure LCS long-coil housing alternatives ..			
High-pressure short-coil housing HP, SP, LCS, and AUF	Brown or Black	TUA 7	TUA 8
High-pressure long-coil housing 24-volt ..	Blue	TUA 6	TUA 5
High-pressure short-coil housing 24-volt ..	Blue	TUA 7	TUA 8

Table of Diaphragm Spindle Assemblies

Pump Type or Specification	Old Type Brass Spindle	New Type Steel Spindle	Remarks
'L' low-pressure	AUA 6011	AUB 6081 AUB 6027	
HP long-coil housing	AUA 6012	AUB 6029 AUB 6091	
HP short-coil housing	AUB 6004	AUB 6025 AUB 6071 AUB 6040	Rover cars
LCS long-coil housing	AUA 6012	AUB 6029 AUB 6091	
LCS short-coil housing	AUB 6015	AUB 6040 AUB 6071	

When reconditioning long-coil housing pumps and fitting coils to the new depth, the old long armature spring (2 in. [5·08 cm.] free length) must be changed for a shorter spring as shown in table:

Table of Armature Springs

Pump Type or Specification	Part No.	Free Length	Working Load
'L' low-pressure	AUA 1449	$\frac{7}{8}$ in. (22·2 mm.)	$2\frac{1}{2}$ to $2\frac{3}{4}$ lb. at $\frac{1}{8}$ in. (1·134 to 1·247 kg. at 3·2 mm.)
Old long HP and LCS	AUA 1785	2 in. (5·08 cm.)	Obsolete
Reconditioned long HP and LCS (having repositioned long coil)	AUA 875	$1\frac{1}{4}$ in. (3·2 cm.) or 1 in. (2·54 cm.) or $\frac{5}{8}$ in. (1·6 cm.)	5 lb. 10 oz. to 6 lb. 8 oz. at $\frac{1}{4}$ in. (2·55 to 2·95 kg. at 6·35 mm.)
Reconditioned long HP and LCS (having repositioned short coil)	AUB 521	$1\frac{1}{4}$ in. (3·2 cm.) or 1 in. (2·54 cm.) or $\frac{5}{8}$ in. (1·6 cm.)	$7\frac{1}{2}$ to $7\frac{3}{4}$ lb. at ·10 in. (3·402 to 3·51 kg. at 25·4 mm.)
Short HP, LCS, SP, and AUF (with short coil)	AUB 521	$1\frac{1}{4}$ in. (3·2 cm.) or 1 in. (2·54 cm.) or $\frac{5}{8}$ in. (1·6 cm.)	$7\frac{1}{2}$ to $7\frac{3}{4}$ lb. at ·10 in. (3·402 to 3·5 kg. at 25·4 mm.)

TOOLS AND EQUIPMENT

Standard bench tools

2 B.A. spanner.
Small screwdriver.
Medium screwdriver.
⅜ in. Whitworth ring spanner.
Pliers.
Vice (with soft jaws).
Small bench press.
Soldering iron (small bit).
Feeler gauges.

The following tools will be supplied by B.M.C. Service Ltd., to Official Reconditioning Distributors only:

TUA 1. Depth gauge.
TUA 2. Coil position gauge.
TUA 3. Coil assembly punch.
TUA 4. Punch for removing coil.
TUA 5. Coil position gauge.
TUA 6. Coil assembly punch.
TUA 7. Coil assembly punch.
TUA 8. Coil position gauge.
TUA 9. Not-Go plug gauge.
TUA 14. Rocker setting gauge.
TUA 15. Rocker setting tool and gauge.
AUA 564. Roller retaining fork.
EXP 102. Test stand.

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