

Estado Mayor do Exército

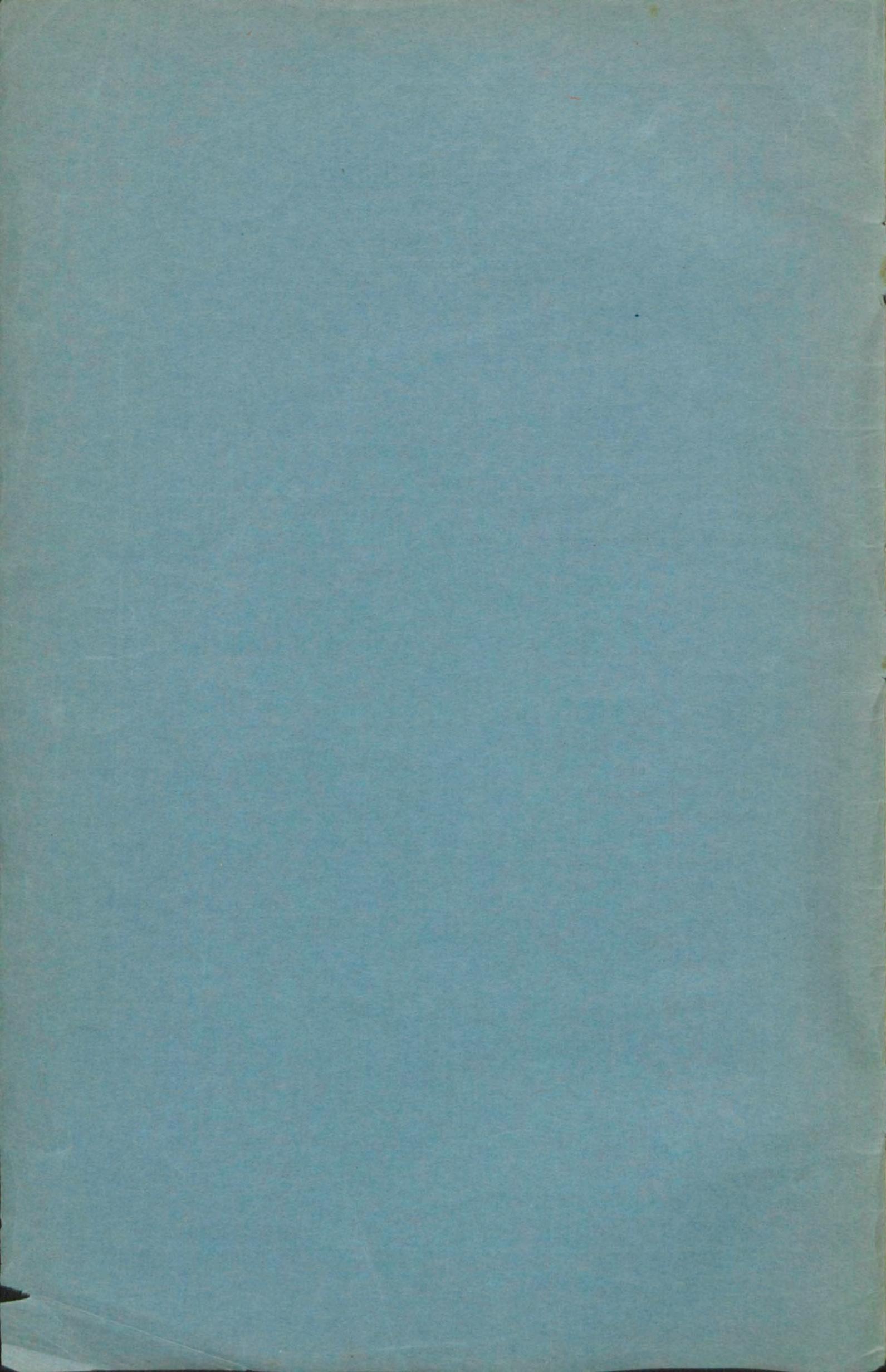
BIBLIOTECA



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**SCHEDULE FOR AEROPLANE  
ENGINES. TYPE R.A.F. 4A.**





BIBLIOTECA DO EXERCITO  
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 Livro N.º \_\_\_\_\_ Pag. \_\_\_\_\_

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# HOW TO ORDER SPARE PARTS.

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1. When ordering Spares from this list quote the Order number together with any dimension or remark given in the Order column beside the Unit, Component, or part required.
2. Parts which are sweated, brazed or riveted, etc., together are arranged in groups and the Order numbers of such parts are bracketed together. These groups can be ordered assembled by quoting the group Order number given outside the bracket.
3. When the Order column is blank beside a part that part must be ordered by quoting the description given in the Description column.
4. Collections of parts forming complete items or sets of items likely to be required can be called for assembled as Units or in smaller cases as Components. Units are frequently sub-divided into Components.
5. The title of the Unit or Component is given at the head of each Section and is followed by a list of the replaceable parts which it contains.

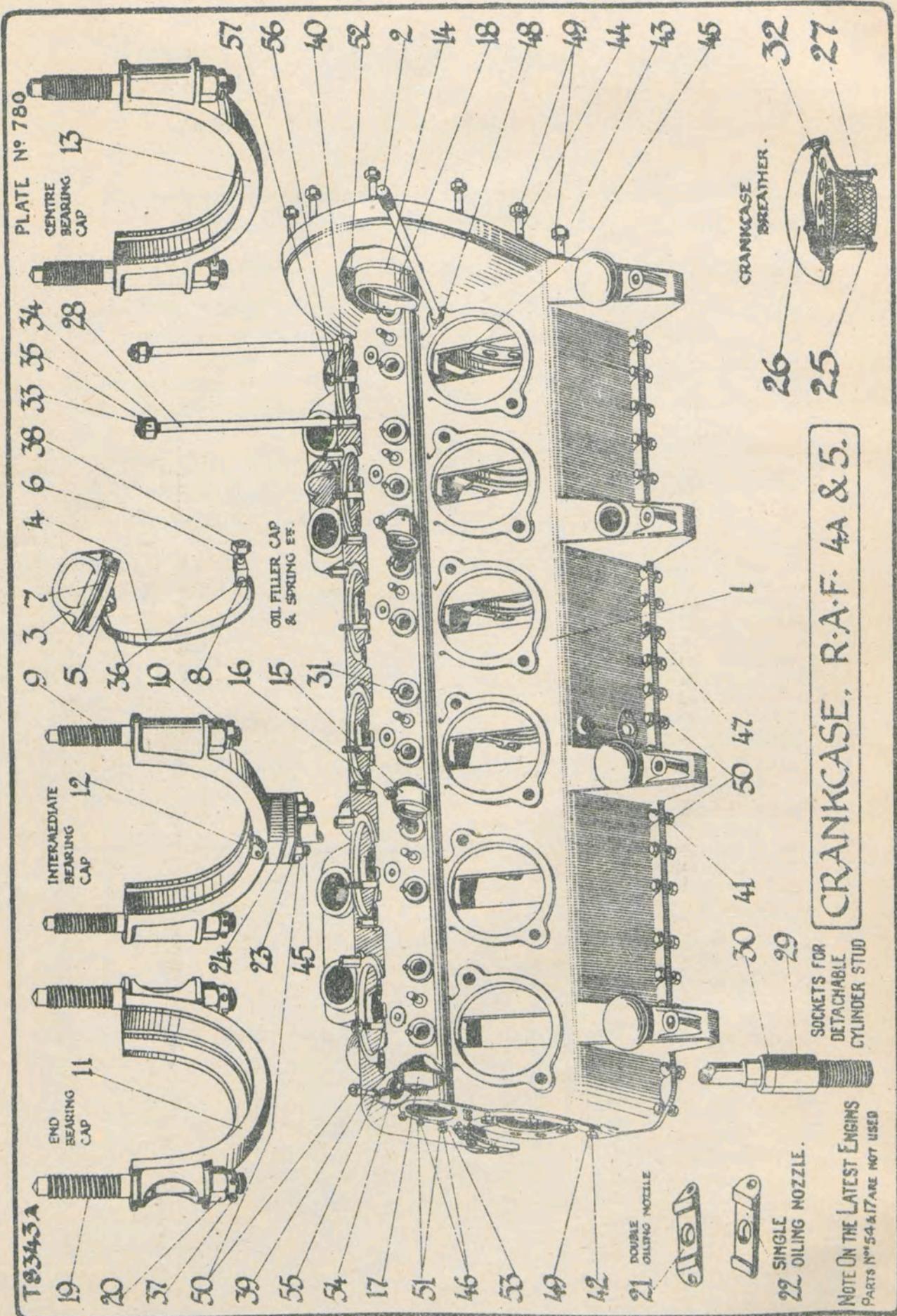
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| 38     | 8     | 170    | 8     | 940    | 8     |
| 77     | 1     | 171    | 8     | 941    | 9     |
| 90     | 3     | 172    | 8     | 942    | 10    |
| 91     | 5     | 173    | 8     | 943    | 11    |
| 92     | 5     | 932    | 3     | 944    | 11    |
| 104    | 9     | 933    | 3     | 945    | 12    |
| 105    | 9     | 934    | 3     | 946    | 12    |





T8343A

PLATE N° 780

END BEARING CAP 11

INTERMEDIATE BEARING CAP 12

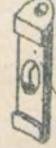
CENTRE BEARING CAP 13

OIL FILLER CAP & SPRING EV.

DOUBLE OILING NOZZLE 21



SINGLE OILING NOZZLE 22



SOCKETS FOR DETACHABLE CYLINDER STUD 29



CRANKCASE, R.A.F. 4A & 5.

CRANKCASE BREATHER.



- 19
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NOTE ON THE LATEST ENGINES PARTS N° 54 & 17 ARE NOT USED

# SCHEDULE

FOR

## AEROPLANE ENGINES.

TYPE R.A.F. 4A.

R.A.F. 4A.

ENGINE BODY.

| Description  | Order No.     | Illustration Ref. | No. off.      |
|--|---------------|-------------------|---------------|
| Unit, ENGINE BODY ...                              | Plate 780 ... | T. 8348           | 1 per Engine. |
| Component, Crankcase ...                           | ...           | T. 8343 A.        | 1 per Unit.   |
| Breather, with                                     | ...           | ...               | ...           |
| Cap for breather...                                | ...           | ...               | ...           |
| Gauze for breather                                 | ...           | ...               | ...           |
| Gauze, Inner, for breather                         | ...           | ...               | ...           |
| Bush, Camshaft                                     | ...           | ...               | ...           |
| Cap, Oil Filler                                    | ...           | ...               | ...           |
| Cap, End Bearing                                   | ...           | ...               | ...           |
| Cap, Centre Bearing                                | ...           | ...               | ...           |
| Cap, Inter. Bearing                                | ...           | ...               | ...           |
| Crankcase  | ...           | ...               | ...           |
| Fork for oil filler cap                            | ...           | ...               | ...           |
| Nozzle, Oiling (single)                            | ...           | ...               | ...           |
| Nozzle, Oiling (double)                            | ...           | ...               | ...           |
| Nuts, for bearing studs                            | ...           | ...               | ...           |
| Nuts for bearing studs                             | ...           | ...               | ...           |
| Nut, Lock, for cylinder studs                      | ...           | ...               | ...           |
| Pin for oil filler cap                             | ...           | ...               | ...           |
| Pin for filler cap fork                            | ...           | ...               | ...           |
| Plate, Locking (for "T" piece nuts)                | ...           | ...               | ...           |
| Plate, Wiring System                               | ...           | ...               | ...           |
| Plug for foot                                      | ...           | ...               | ...           |
| Ring, Camshaft Bearing                             | ...           | ...               | ...           |
| Screw, for locating tappet guide                   | ...           | ...               | ...           |
| Setscrew, Camshaft Bush                            | ...           | ...               | ...           |
| Sleeve, Front Camshaft Bearing                     | ...           | ...               | ...           |
| Sockets for short studs                            | ...           | ...               | ...           |
| Spring for filler cap                              | ...           | ...               | ...           |
| Studs, Cylinder (long)                             | ...           | ...               | ...           |
| Studs, Cylinder (short)                            | ...           | ...               | ...           |
| Studs, Bearing (end and centre)                    | ...           | ...               | ...           |
| Studs, Bearing (inter.)                            | ...           | ...               | ...           |
| *Union and Jet Plug                                | ...           | ...               | ...           |
| Washer for oil feed "T" piece                      | ...           | ...               | ...           |
| Washer for filler cap                              | ...           | ...               | ...           |
| Bolts for oil base joint                           | ...           | ...               | ...           |
| Nuts for cowel clip and speedometer drive studs... | ...           | ...               | ...           |
| Nuts for tappet bridge studs                       | ...           | ...               | ...           |
| Nuts for cylinder studs                            | ...           | ...               | ...           |
| Nut for filler cap fork                            | ...           | ...               | ...           |
| Nuts for studs and AGS. 105 E                      | ...           | ...               | ...           |
| *Nut, Lock, for union                              | ...           | ...               | ...           |
| Nuts for studs                                     | ...           | ...               | ...           |
| Pins, Split  | ...           | ...               | ...           |
| Pins, Split  | ...           | ...               | ...           |
| Pins, Split, for breather                          | ...           | ...               | ...           |

\* Not used on latest engine.

Component continued.

R.A.F. 4A.

## ENGINE BODY.

| Description.   | Order No.  | Illustration Ref. | No. off.           |
|--|--|-------------------|--------------------|
| <b>Unit T. 8343 and Component T. 8343 A.—continued.</b>                                |  |                   |                    |
| Pins, Split  | AGS. 166 $\frac{5}{8}$ " $\times$ $1\frac{1}{4}$ " | 37                | 14                 |
| Screw for wiring system plate  | AGS. 244 4BA $\times$ $\frac{3}{8}$ "              | —                 | 4                  |
| Setscrew, for camshaft bearing locking   | AGS. 249 2BA $\times$ $\frac{3}{8}$ "              | 52                | 3                  |
| Studs for "T" pieces   | AGS. 131 B   | 45                | 9                  |
| Studs, for speedometer drive cover...  | AGS. 130 C   | —                 | 4                  |
| Studs, for oil base joint  | AGS. 131 C   | 41                | 22                 |
| Studs, Front Cover Joint   | AGS. 132 G   | 43                | 7                  |
| Stud, Front Cover Joint  | AGS. 132 F   | 44                | 6                  |
| Studs, Rear Cover Joint  | AGS. 132 C   | 42                | 8                  |
| Studs, for cowl clip   | AGS. 130 B   | 46                | 2                  |
| Studs, Tappet Bridge   | AGS. 132 F   | 40                | 12                 |
| Studs, Air Pump  | AGS. 131 E   | 39                | 2                  |
| Washer, Spring   | AGS. 163 C   | —                 | 4                  |
| †Washer, Spring  | AGS. 164 E   | —                 | 1                  |
| Washers  | AGS. 160 H   | 34                | 24                 |
| Washers, for cowl clip studs   | AGS. 162 C   | 53                | 2                  |
| Washer Spring  | AGS. 162 D   | 55                | 2                  |
| <b>Component, Oil Base</b>   | <b>Plate 1094</b>                                  | <b>T 8343 B.</b>  | <b>1 per Unit.</b> |
| Baffle, on oil pump flange   | T. 21268-6   | 257               | 1                  |
| Base, Oil  | T. 8234-1  | 65                | 1                  |
| Bushes, Tapped (to take cover bolts)   | T. 8314-3  | 76                | 9                  |
| Clip for oil pipe  | T. 8261-5  | 87                | 1                  |
| Connection for oil base  | T. 21268-3   | 259               | 1                  |
| Elbow Piece for oil drain  | T. 21269-4   | 264               | 1                  |
| *Hinges for flap valves  | T. 6140-2  | 68                | 2                  |
| *Links for flap valves   | T. 5058-3  | 69                | 4                  |
| *Pins, Hinge   | T. 5058-4  | 70                | 4                  |
| Plate, Locking   | T. 8284-3  | 88                | 2                  |
| Plugs, Drain   | T. 3557-29   | 86                | 3                  |
| Stud for carburettor support   | T. 25097-2   | —                 | 4                  |
| Stud for carburettor support   | T. 25108-2   | —                 | 1                  |
| *Springs for flap valves   | T. 6140-4  | 89                | 2                  |
| *Valve, Front Flap   | T. 8314-1  | 66                | 1                  |
| *Valve, Rear Flap  | T. 8314-2  | 67                | 1                  |
| Washers for carburettor flange   | T. 4796-228  | 90                | 4                  |
| Washers, for oil base connection and elbow piece                                       | T. 21269-1   | 260               | 2                  |
| Bolts, for front cover   | AGS. 107 G   | —                 | 5                  |
| Bolts, for rear cover  | AGS. 107 D   | —                 | 4                  |
| Nut for carburettor support studs  | AGS. 116 E   | —                 | 4                  |
| Nuts, for oil pump studs   | AGS. 116 A   | —                 | 3                  |
| Nut, Slotted, for carburettor support studs  | AGS. 118 E   | —                 | 4                  |
| Nuts, for carburettor studs  | AGS. 116 C   | —                 | 8                  |
| Nut for carburettor support stud   | AGS. 118 G   | —                 | 1                  |
| Nuts, for flap hinge studs, oil base connection studs and elbow studs                  | AGS. 115 B   | —                 | 12                 |
| Pin, Split, for AGS. 118 G   | AGS. 166 $\frac{1}{8}$ " $\times$ $1\frac{1}{4}$ " | —                 | 1                  |
| *Pins, Split, for flap valve hinges  | AGS. 166 $\frac{1}{8}$ " $\times$ $1\frac{1}{4}$ " | —                 | 8                  |
| Pin, Split, for AGS. 118 E   | AGS. 166 $\frac{3}{8}$ " $\times$ $1\frac{1}{4}$ " | —                 | 4                  |
| Setscrew, for oil pipe clip  | AGS. 105 B   | —                 | 2                  |
| Studs, Oil Pump (used when square shouldered filter is used)                           | AGS. 131 K   | —                 | 3                  |
| Studs, Oil Pump (used when bottle shouldered filter is used)                           | AGS. 131 M   | —                 | 3                  |
| *Studs, for flap hinges  | AGS. 130 B   | —                 | 4                  |
| †Studs, Carburettor  | AGS. 132 D   | —                 | 8                  |
| Studs, Rear Carburettor, for use with B. & B. carburettor on B.E. 12 or 12 A aeroplane | AGS. 132 N   | —                 | 4                  |
| Studs, Rear Carburettor, for use with Claudel carburettor on B.E. 12 or 12 A aeroplane | AGS. 132 U   | —                 | 4                  |
| Studs, for oil base connection and elbow piece   | AGS. 130 C   | —                 | 8                  |
| *Washers, for flap valve hinge   | AGS. 160 B   | —                 | 8                  |
| Washers, Double Spring, for carburettor support studs                                  | AGS. 163 F   | —                 | 4                  |
| Washer, Double Spring, for carburettor support studs                                   | AGS. 163 G   | —                 | 1                  |
| Washers, for oil plug  | AGS. 164 H   | —                 | 3                  |
| Washer, Plain, for carburettor support studs   | AGS. 160 F   | —                 | 4                  |
| Washers, Spring, for carburettor studs   | AGS. 163 E   | —                 | 8                  |
| Washers for AGS. 115 B   | AGS. 162 C   | —                 | 8                  |
| Washer, Double Spring, for oil pump studs  | AGS. 163 D   | —                 | 3                  |
| Washer, Spring, for carburettor support stud   | AGS. 163 C   | —                 | 1                  |

\* These parts are only required for engines on which the old single oil pump is still retained.

† N required on latest engines.

‡ Only four off required on B.E. 12 or 12 A aeroplane.

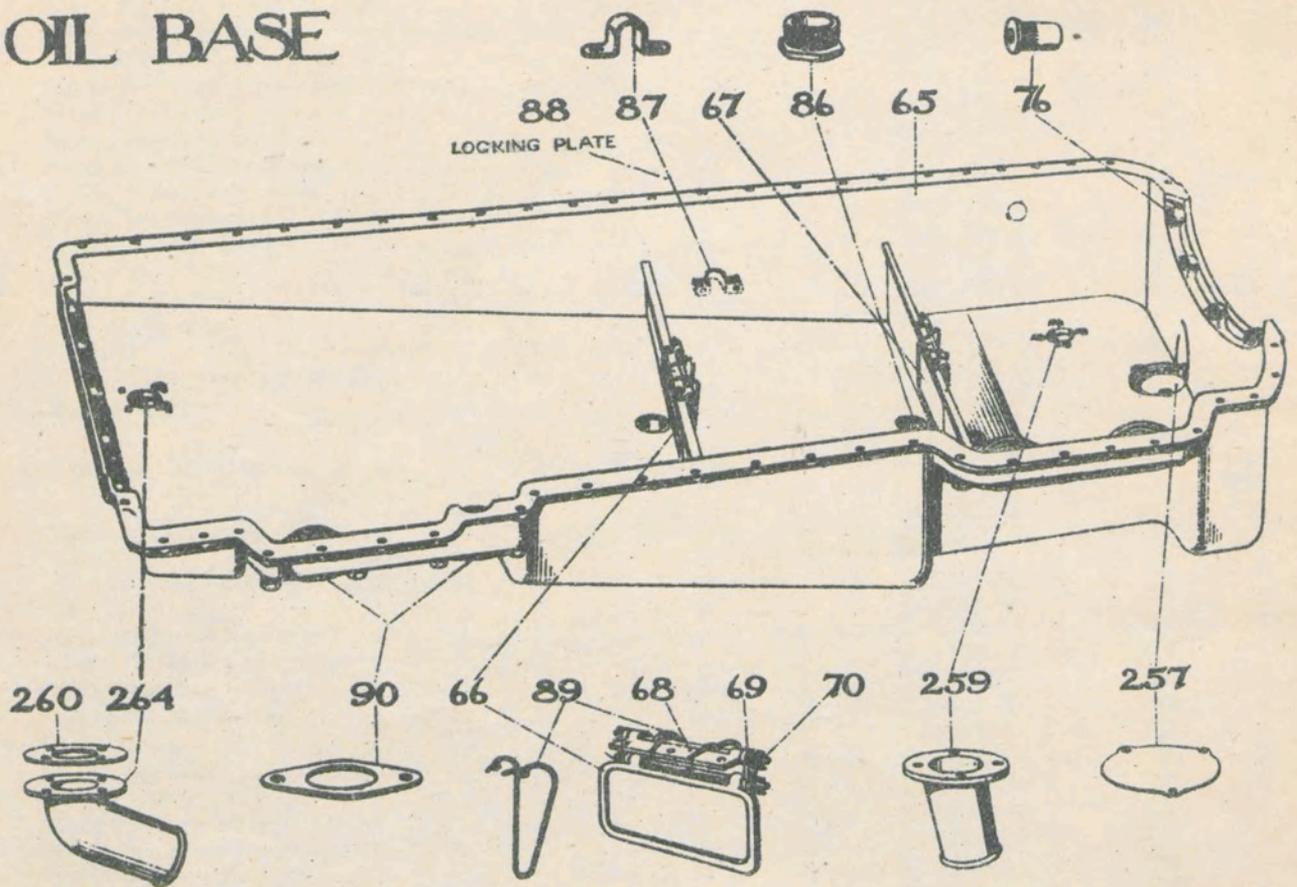
Unit continued.



COMP'G NO T 8343 B

PLATE No 1094

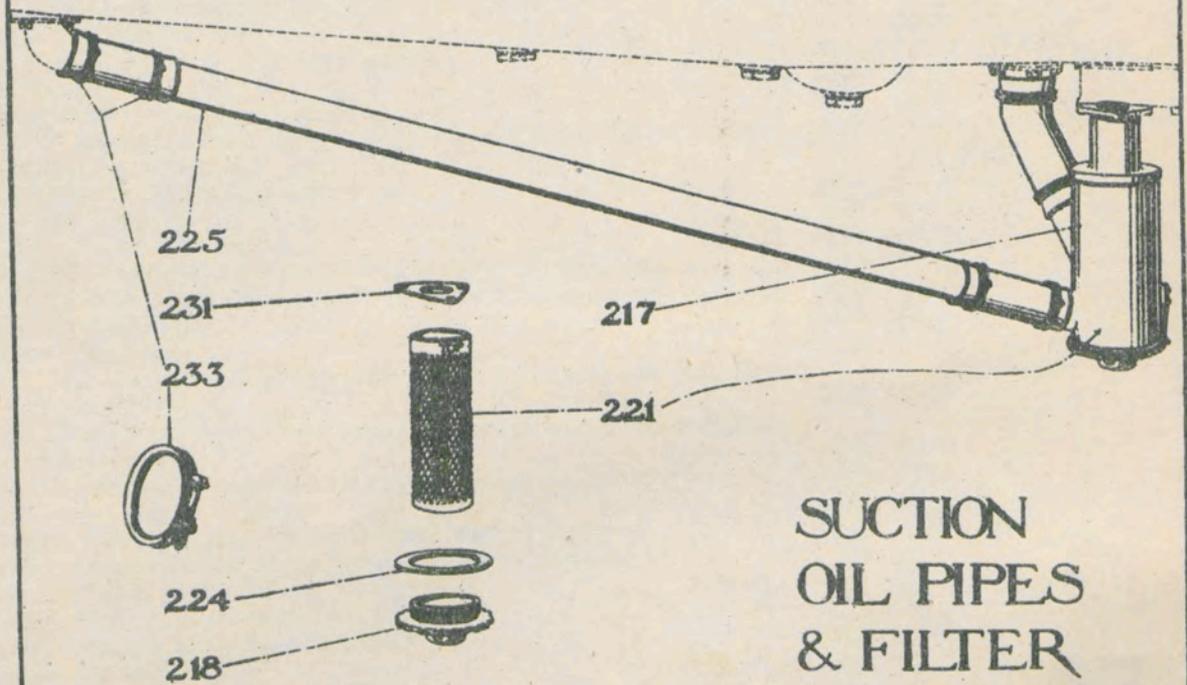
# OIL BASE



VS

COMPONENT No. T21270

PLATE No. 1101



# SUCTION OIL PIPES & FILTER

VS



COMPNT N<sup>o</sup> TB343, C & D.

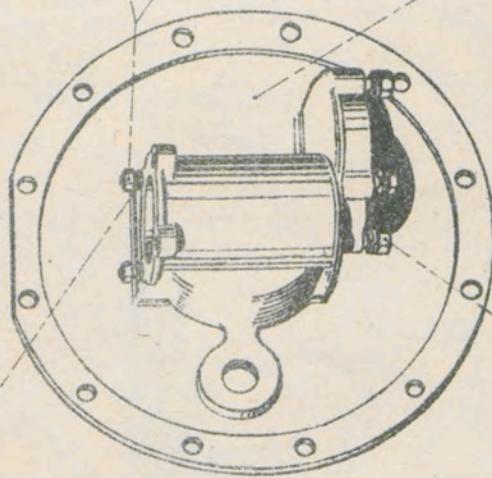
PLATE N<sup>o</sup> 1093

118  
124 STUD  
122 NUT  
233

226  
229  
228 RING  
232 SPUT PIN  
225

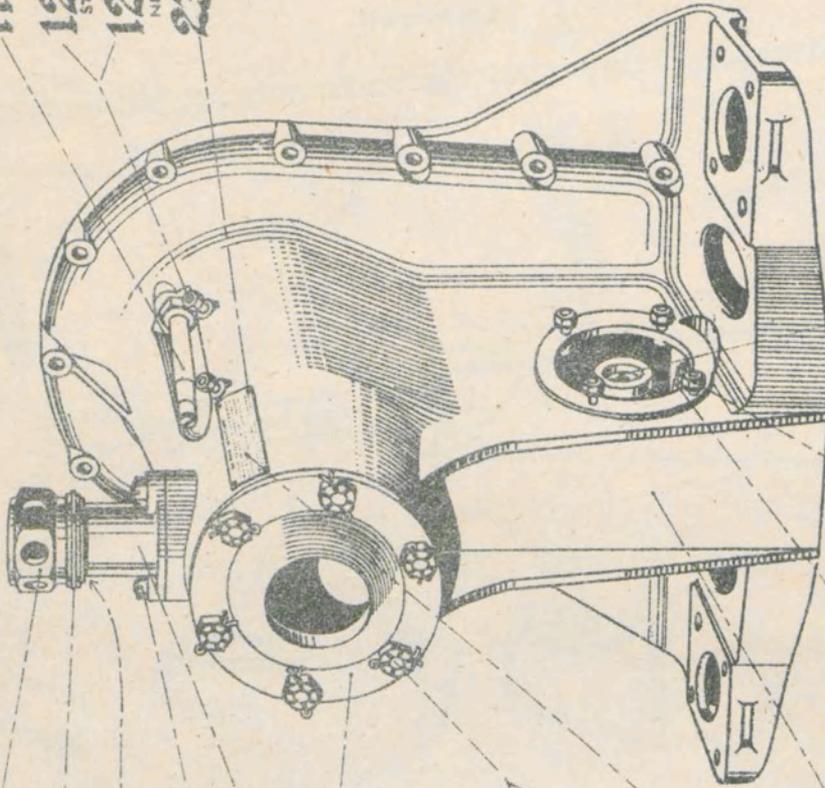
227 GAUZE  
230 STUD  
231 NUT

140



115  
130 STUD  
138 NUT  
114 STUD  
121 NUT  
127 SPUT PIN  
120  
129

135 STUD  
137 NUT  
139 SPRING WASHER



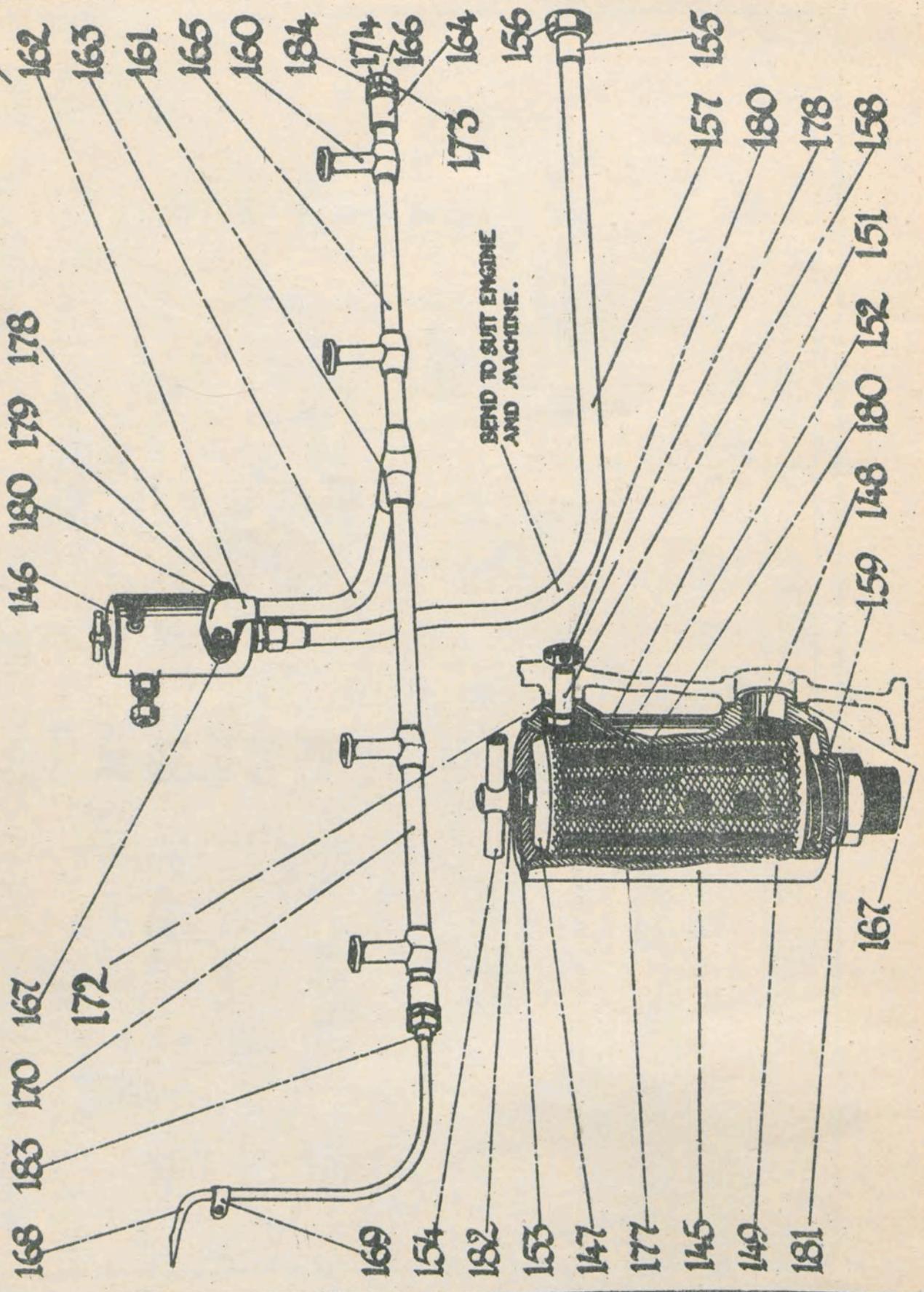
117 STUD  
123 STUD  
122 NUT  
126 SPRING WASHER  
116



REAR & FRONT COVERS. R.A.F. 4A.



OIL PIPES & FILTER, R.A.F. 4A & 5.





R.A.F. 4A.

ENGINE BODY.

| Description.  | Order No                                     | Illustration Ref. | No. of.            |
|---|--|-------------------|--------------------|
| <b>Unit T. 8343—continued.</b>  |  |                   |                    |
| <b>Component, Suction Oil Pipes and Filter ... Plate 1101 ...</b>               | <b>T 21270 F.</b>                            |                   | <b>1 per Unit.</b> |
| Base, Filter ...  | T. 21267-4                                   | 218               | 1                  |
| †Body, Filter (square shoulder as illustrated)                                  | T. 21267-3                                   | 217               | 1                  |
| †Body, Filter (bottle shouldered)   | T. 21985-1                                   | —                 | 1                  |
| Clips, for oil pipe connection "Rotax" Aero 1 1/8" inside diameter              | —  | 233               | 6                  |
| Frame and Gauze (filter)  | T. 21268-1                                   | 221               | 1                  |
| Joint, Cork (for filter)  | T. 21269-6                                   | 231               | 1                  |
| Pipe, Drainage  | T. 21268-5                                   | 225               | 1                  |
| Pipe, Suction, for use with bottle shouldered filter                            | T. 21267-7                                   | —                 | 1                  |
| Spring, Locking   | T. 21269-2                                   | 228               | 1                  |
| Washer, for filter  | T. 21268-4                                   | 224               | 1                  |
| Connection, Oil Pipe  | AGS. 236 M                                   | 237               | 3                  |
| Setscrews, for spring   | AGS. 245 2 B.A. x 3/8"                       | 240               | 2                  |
| <b>Component, Front Cover ... Plate 1093 ...</b>                                | <b>T 8343 C.</b>                             |                   | <b>1 per Unit.</b> |
| Body, Breather  | T. 8386-6                                    | 225               | 1                  |
| Bush, Magneto Driven Wheel  | T. 6194-3                                    | 116               | 1                  |
| Cap, for breather   | T. 9250-2                                    | 226               | 1                  |
| Cover, Front  | T. 8691-1                                    | 113               | 1                  |
| Cover, Thrust   | T. 6182-2                                    | 115               | 1                  |
| Dowel, Locating   | T. 8987-4                                    | —                 | 1                  |
| Gauze, for breather, with Ring, for gauze...                                    | G. 932 { T. 9250-4<br>T. 9250-3              | 227<br>228        | 1<br>1             |
| Plate, Front Cover (magneto drive)  | T. 5750-5                                    | —                 | 1                  |
| Plug, for oil hole 1/4 B.S.F. x 5mm. long                                       | —  | —                 | 1                  |
| Studs, Thrust Flange  | T. 6183-2                                    | 114               | 6                  |
| Wire, Locking, for breather   | T. 6188-2                                    | 229               | 1                  |
| Bolts, for Constantinesco fire control gear bracket                             | AGS. 107 E                                   | —                 | 2                  |
| Nuts, for thrust flange studs and locating dowel                                | AGS. 118 E                                   | 121               | 7                  |
| Nuts, for drive cover and wire carrier studs                                    | AGS. 115 B                                   | 122               | 16                 |
| Nuts, for breather studs and Constantinesco bolts and studs                     | AGS. 118 C                                   | 231               | 6                  |
| Pins, Split, for thrust flange and breather studs and C.C. gear studs and bolts | AGS. 166 3/32" x 1"                          | 232               | 12                 |
| Pin, Split, for locating dowel nut  | AGS. 166 3/32" x 1 1/4"                      | —                 | —                  |
| Studs, Magneto Drive Cover  | AGS. 130 B                                   | 123               | 12                 |
| Studs, for wire carrier   | AGS. 130 C                                   | 124               | 4                  |
| Studs, Breather   | AGS. 132 D                                   | 230               | 2                  |
| Studs, for Constantinesco fire control gear bracket                             | AGS. 132 C                                   | —                 | 2                  |
| Washer, Double Spring   | AGS. 163 C                                   | 126               | 12                 |
| <b>Component, Rear Cover ...</b>  | <b>T 8243 D.</b>                             |                   | <b>1 per Unit.</b> |
| Cover, Rear   | T. 5712-1                                    | 129               | 1                  |
| Studs, Inspection Cover   | T. 6140-5                                    | 130               | 2                  |
| Nuts, for bearing bracket studs   | AGS. 115 B                                   | 135               | 5                  |
| Nuts, for inspection cover studs  | AGS. 117 A                                   | 138               | 2                  |
| Studs, Bearing Bracket  | AGS. 130 C                                   | 135               | 5                  |
| Washer, Double Spring, for AGS. 115 B   | AGS. 163 C                                   | 139               | 5                  |
| Washer, Double Spring, for AGS. 117 A   | AGS. 163 D                                   | 140               | 2                  |
| <b>Component, Oil Pipes and Filter ... Plate 781 ...</b>                        | <b>T 8343 E.</b>                             |                   | <b>1 per Unit.</b> |
| Body, Filter, with Studs  | G. 933 { T. 8259-1<br>AGS. 132 E             | 145<br>179        | 1<br>2             |
| Bolt, Air Release   | T. 8261-3                                    | 158               | 1                  |
| Bolt, for filter cap  | T. 8260-2                                    | 152               | 1                  |
| Cap, for filter   | T. 8987-2                                    | 146               | 1                  |
| Clip, for feed pipe   | T. 8284-5                                    | 169               | 1                  |
| Frame, Filter, with Bottom, Plate Gauze   | G. 90 { T. 8259-3<br>T. 8259-5<br>T. 8260-1  | 147<br>149<br>151 | 1<br>1<br>1        |
| Handle, for clip bolt...  | T. 8260-4                                    | 154               | 1                  |
| Jet, Filter   | T. 8261-6                                    | 148               | 1                  |
| Nuts, Gland   | T. 8260-6                                    | 156               | 2                  |
| Pipe, Oil, with Nipples, for oil pipe Nuts, Gland                               | G. 934 { T. 8261-2<br>T. 8260-5<br>T. 8260-6 | 157<br>155<br>156 | 1<br>2<br>2        |

‡ These parts are alternative.

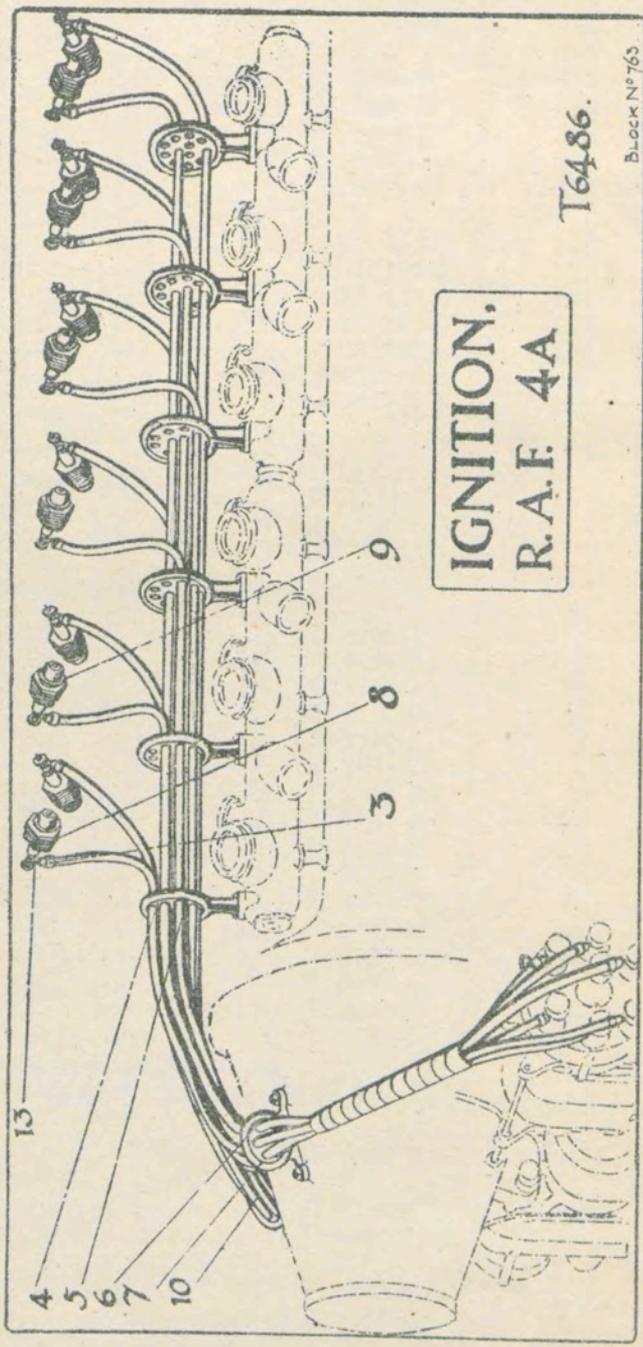
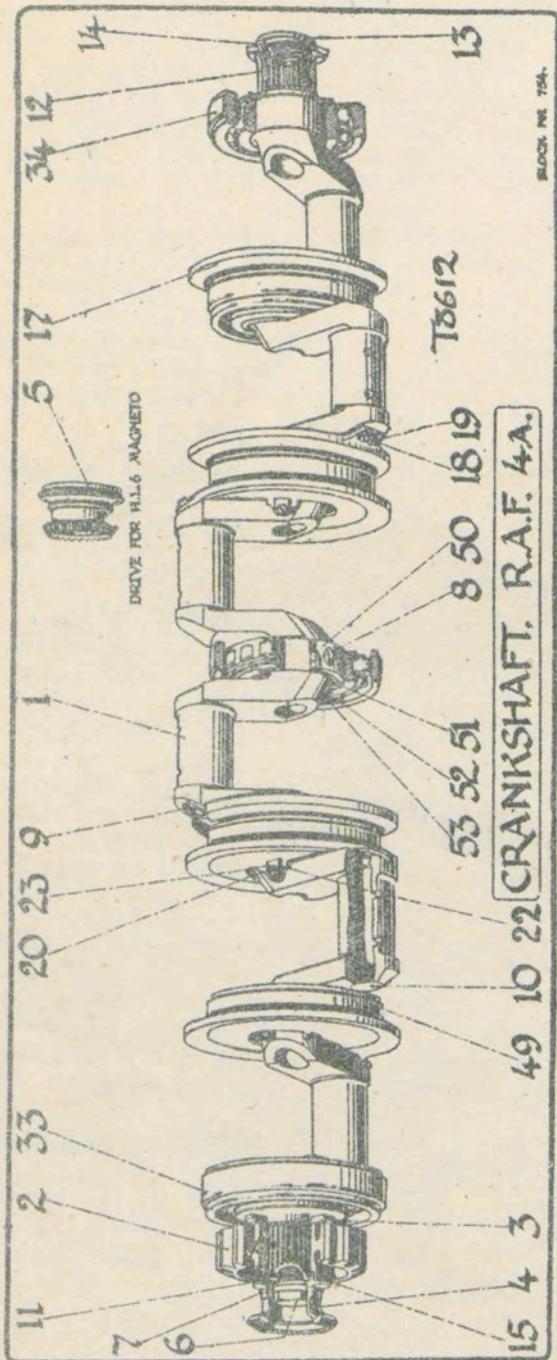
Component continued.

## R.A.F. 4A.

## ENGINE BODY AND CRANKSHAFT.

| Description.  | Order No.                                  | Illustration Ref. | No. off. |                      |
|---|--|-------------------|----------|----------------------|
| <b>Unit T. 8343 and Component T. 8343 E.—continued.</b>   |  |                   |          |                      |
| Pipe, Feed, to gears, with ...  | G. 935                                     | T. 8284-4         | 168      | 1                    |
| Nipple ...  |  | AGS. 210 C        | 183      | 1                    |
| Pipe, Delivery, with ...  | G. 936                                     | T. 8283-4         | 163      | 1                    |
| Pipe, Feed (long)   |  | T. 8284-6         | 170      | 1                    |
| Pipe, Feed (short)  |  | T. 8283-6         | 165      | 1                    |
| Pipe, Feed Branch   |  | T. 8283-2         | 161      | 1                    |
| "T" Piece, to bearing cap   |  | T. 8283-1         | 160      | 4                    |
| Elbow, Flange ...   |  | T. 8283-3         | 162      | 1                    |
| Connection, to gear feed  |  | T. 6007-5         | 164      | 1                    |
| Plug, for feed pipe, 16 dia. × 3 thick  |  |                   | 166      | 1                    |
| Packing Ring, for cap bolt ...  | T. 8260-3                                  | 153               | 1        |                      |
| Spring, Filter ...  | T. 8987-1                                  | 159               | 1        |                      |
| Washer, for filter body   | T. 8284-2                                  | 167               | 2        |                      |
| Washer, for air release bolt ...  | T. 8987-3                                  | 172               | 1        |                      |
| Washers, "D" Tab, for gland nuts  | T. 6007-6                                  | 173               | 2        |                      |
| Nuts, for filter studs and air release bolt ...   | AGS. 118 C                                 | 178               | 3        |                      |
| Nut, for filter cap bolt  | AGS. 117 C                                 | 177               | 1        |                      |
| Nuts, Gland ...   | AGS. 212 C                                 | 184               | 2        |                      |
| Nuts, Lock ...  | AGS. 207 C                                 | 174               | 2        |                      |
| Pins, Split, for AGS. 118 C ...   | AGS. 160 $\frac{3}{8}$ " × $\frac{3}{4}$ " | 180               | 1        |                      |
| Washer, for cap bolt  | AGS. 160 E                                 | 182               | 1        |                      |
| Washer, for filter jet ...  | AGS. 164 J                                 | 181               | 1        |                      |
| <b>Unit, CRANKSHAFT AND FITTINGS</b> ...  | <b>Plate 754</b> ...                       | <b>T. 8612</b>    |          | <b>1 per Engine.</b> |
| <b>Component, Crankshaft...</b> ...   |  | <b>T. 8612 A.</b> |          | <b>1 per Unit.</b>   |
| (State type of Magneto used.)   |  |                   |          |                      |
| *Bevel, Magneto Driving (1½ engine speed)   | T. 5750-1                                  | 4                 | 1        |                      |
| *Bevel, Magneto Driving (¾ engine speed)  | T. 5750-2                                  | 5                 | 1        |                      |
| Bevel, Oil Pump Driving   | T. 8443-4                                  | 12                | 1        |                      |
| Collar, for crankshaft pinion   | T. 9115-2                                  | 3                 | 1        |                      |
| Crankshaft  | T. 5719-1                                  | 1                 | 1        |                      |
| Key, for split bush   | T. 3607-21                                 | 8                 | 5        |                      |
| Nut, for magneto bevel  | T. 5750-3                                  | 6                 | 1        |                      |
| Nut, Rear End   | T. 6188-1                                  | 13                | 1        |                      |
| Pin, Locking, for bevel   | T. 8443-6                                  | —                 | 1        |                      |
| † Pinion, Crankshaft  | T. 9115-1                                  | 2                 | 1        |                      |
| Plug, Crankpin  | T. 5500-5                                  | 9                 | 2        |                      |
| Plug, Crankpin  | T. 3607-22                                 | 10                | 4        |                      |
| Ring, Locking, for rear end nut   | T. 6188-2                                  | 14                | 1        |                      |
| Screw, Grub ...   | T. 5039-4                                  | 11                | 1        |                      |
| Shims, for bevel  | T. 8443-5                                  | 16                | 5        |                      |
| Washers, Adjusting  | T. 5741-5                                  | 15                | 30       |                      |
| * Alternate, to be supplied according to magneto used.  |  |                   |          |                      |
| † This pinion and airscrew shaft gear wheel T. 8670-1 are to be supplied in pairs wired together. |  |                   |          |                      |
| <b>Component, Oiling Rings</b> ...  |  | <b>T. 6212 B.</b> |          | <b>8 per Unit.</b>   |
| Plate, Locking (for setscrew on crank)  | T. 4623-215                                | 19                | 1        |                      |
| Plate, Locking (for setscrew on web)  | T. 4623-6                                  | 23                | 2        |                      |
| Rings, Oiling ...   | T. 6191-1                                  | 17                | 1        |                      |
| Setscrew, on crankpin   | T. 4623-214                                | 18                | 2        |                      |
| Setscrew, on web  | T. 4623-144                                | 20                | 2        |                      |
| Washer, for setscrew on web   | T. 4623-5                                  | 22                | 2        |                      |
| <b>Component, Front and Rear Bearings</b> ...   |  | <b>T. 6212 C.</b> |          | <b>1 per Unit.</b>   |
| Bearing, Ball (rear)  | T. 8377-1                                  | 34                | 1        |                      |
| Bearing, Roller (front)   | T. 6007-4                                  | 33                | 1        |                      |
| <b>Component, Intermediate Bearings</b> ...   |  | <b>T. 6212 D.</b> |          | <b>5 per Unit.</b>   |
| Bearing, Inter Roller...  | T. 3583-200                                | 49                | 1        |                      |
| Plate, Locking  | T. 6191-4                                  | 53                | 7        |                      |
| Bush, Split   | T. 3607-17                                 | 50                | 1        |                      |
| Setscrew, for stop  | T. 6191-3                                  | 52                | 1        |                      |
| Stop, for split bush  | T. 6191-2                                  | 51                | 1        |                      |





IGNITION,  
R.A.F. 4A

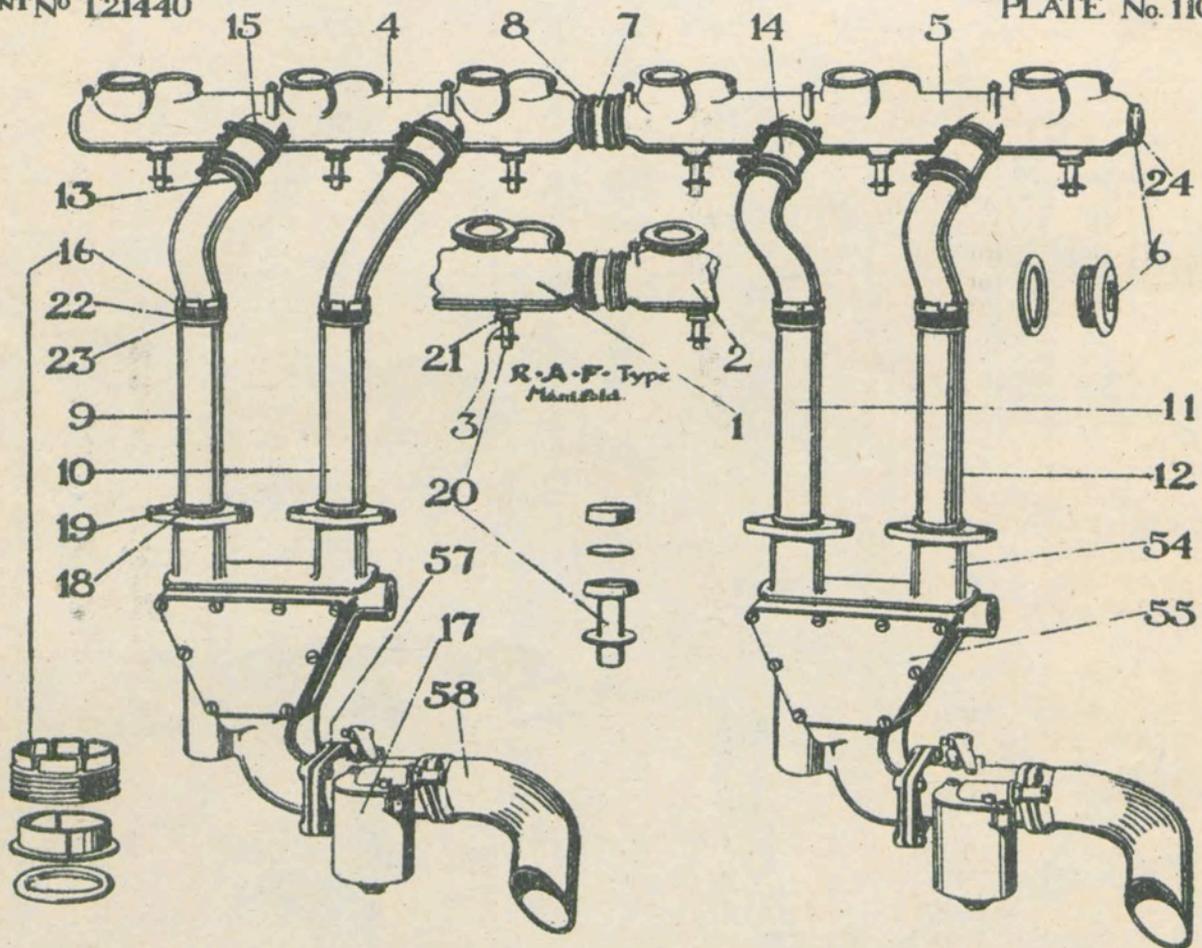
T6486.

BLOCK No 765



COMPNT NO T21440

PLATE No. 1102



CARBURETTORS & INDUCTION PIPES

## R.A.F. 4A.

## IGNITION AND INDUCTION PIPES.

| Unit, IGNITION FITTINGS   | Description.         | Order No. | Illustration Ref.        | No. off.      |         |
|---|----------------------|-----------|--------------------------|---------------|---------|
| ...   | Plate 768            | T. 6686.  |                          | 1 per Engine. |         |
| Carrier Magneto Wire on Manifold, with  | Support, for carrier | G 91      | { T. 9293-1<br>T. 9293-2 | 4<br>5        | 6<br>6  |
| Carrier, Magneto Wire on Front Cover, with  | Support, for carrier | G 92      | { T. 9293-3<br>T. 9293-4 | 6<br>7        | 2<br>2  |
| Ferrule, for wires, $\frac{1}{4}$ " O/D $\times$ 18 S.W.G. $\times$ 10mm. long brass tube |                      |           |                          | 3             | 24      |
| Plug, Sparking (Lodge, air cooled)  |                      |           |                          | 8             | 12      |
| Terminal, Cable (Bosch)   |                      |           |                          | 13            | 24      |
| Washers, Sparking Plug  |                      |           |                          | 9             | 12      |
| Wires, H.T. (7mm. dia.)   |                      |           |                          | 10            | to suit |

| Unit, B. & B. CARBURETTOR, INDUCTION PIPES AND HOT AIR MUFFS | Description. | Order No.   | Illustration Ref. | No. off.      |
|--|--------------|-------------|-------------------|---------------|
| ...  | Plate 1102   | T. 21440.*  |                   | 1 per Engine. |
| Component, B. & B. Carburettor and Induction Pipes.          |              | T. 21440A.* |                   | 1 per Unit.   |
| Carburettor, complete (B. & B.)                              |              | T. 21453    | 17                | 2             |
| Clip, for altitude control cock connection...                |              | AGS. 208 C  | —                 | 2             |
| Clip, for carburettor connection (altitude control)          |              | AGS. 208 O  | —                 | 4             |
| Clip, Manifold Jointing (Rotax "Aero," $1\frac{1}{8}$ " I/D) |              | —           | 8                 | 2             |
| Clip, Carburettor Pipe (Rotax "Aero," $1\frac{1}{8}$ " I/D)  |              | —           | 15                | 8             |
| Cock, Altitude Control                                       |              | T. 21933-2  | —                 | 1             |
| Connection, for altitude control cock                        |              | AGS. 236 D  | —                 | 1             |
| Connection, Carb., for altitude control                      |              | AGS. 236 C  | —                 | 2             |
| Connection, Carburettor Pipe                                 |              | T. 6484-4   | 14                | 4             |

## R.A.F. Type—

|   |  |        |  |             |             |
|---|--|--------|--|-------------|-------------|
| Manifold, Front Induction R.A.F. type, with |  | G. 937 | { T. 6458-1<br>T. 6484-1<br>AGS. 130 B | 1<br>6<br>— | 1<br>1<br>6 |
| Plug, Manifold                              |  |        | { T. 6484-2                            | 24          | 1           |
| Stud, for wire support                      |  |        | { T. 6459-1                            | 2           | 1           |
| Washer, for plug...                         |  |        | { T. 6484-1                            | 6           | 1           |
| Manifold, Rear Induction R.A.F. type, with  |  | G. 938 | { AGS. 130 B<br>T. 6484-2              | —<br>24     | 6<br>1      |
| Plug, Manifold                              |  |        |  |             |             |
| Stud, for wire support                      |  |        |  |             |             |
| Washer, for plug                            |  |        |  |             |             |

## Daimler Type—

|   |  |        |              |    |   |
|---|--|--------|--------------|----|---|
| Manifold, Front Induction, Daimler type, with |  | G. 146 | { T. 21007-1 | 4  | 1 |
| Other parts as in G. 937 above                |  |        | { —          | —  | — |
| Manifold, Rear Induction, Daimler type, with  |  | G. 147 | { T. 21008-1 | 5  | 1 |
| Other parts as in G. 938 above                |  |        | { —          | —  | — |
| Nut, Carburettor                              |  |        | T. 6230-1    | 16 | 4 |
| Pad, for manifold support                     |  |        | T. 6484-6    | 21 | 6 |
| Pipe No. 1, Carburettor                       |  |        | T. 6455-1    | 9  | 1 |
| with collar                                   |  |        | —            | 13 | 1 |
| Pipe No. 2, Carburettor                       |  |        | T. 6455-2    | 10 | 1 |
| with collar                                   |  |        | —            | 13 | 1 |
| Pipe No. 3, Carburettor                       |  |        | T. 6456-1    | 11 | 1 |
| with collar                                   |  |        | —            | 13 | 1 |
| Pipe No. 4, Carburettor                       |  |        | T. 6456-2    | 12 | 1 |
| with collar                                   |  |        | —            | 13 | 1 |
| Ring, Packing, for inlet sleeve               |  |        | T. 4958-2    | 23 | 4 |
| Rings, Carburettor Jointing                   |  |        | T. 4958-6    | 19 | 4 |
| Rubber, Manifold Jointing                     |  |        | T. 6484-3    | 7  | 1 |
| Shims, Adjusting, for manifold                |  |        | T. 6457-4    | 3  | 6 |
| Sleeve, Inlet Pipe                            |  |        | T. 6230-4    | 22 | 4 |
| Support, Manifold                             |  |        | T. 6484-5    | 20 | 6 |
| Support, Carburettor, front...                |  |        | T. 25096-2   | —  | 1 |
| Support, Carburettor, rear                    |  |        | T. 25096-1   | —  | 1 |
| Spigot, Carburettor                           |  |        | T. 6230-3    | 18 | 4 |
| Nut, for H.T. wire support studs              |  |        | AGS. 115 B   | —  | 6 |

NOTE.—The R.A.F. and Daimler type of manifold given above are alternatives, and must be supplied as called for on order. Parts not included in groups are common for both types.

\*When ordering state whether R.A.F. or Daimler type of Manifolds are required. These Manifolds are not interchangeable unless the inlet boxes on cylinders are changed. (See page 14.)

Unit continued.

## R.A.F. 4A.

## INDUCTION PIPES.

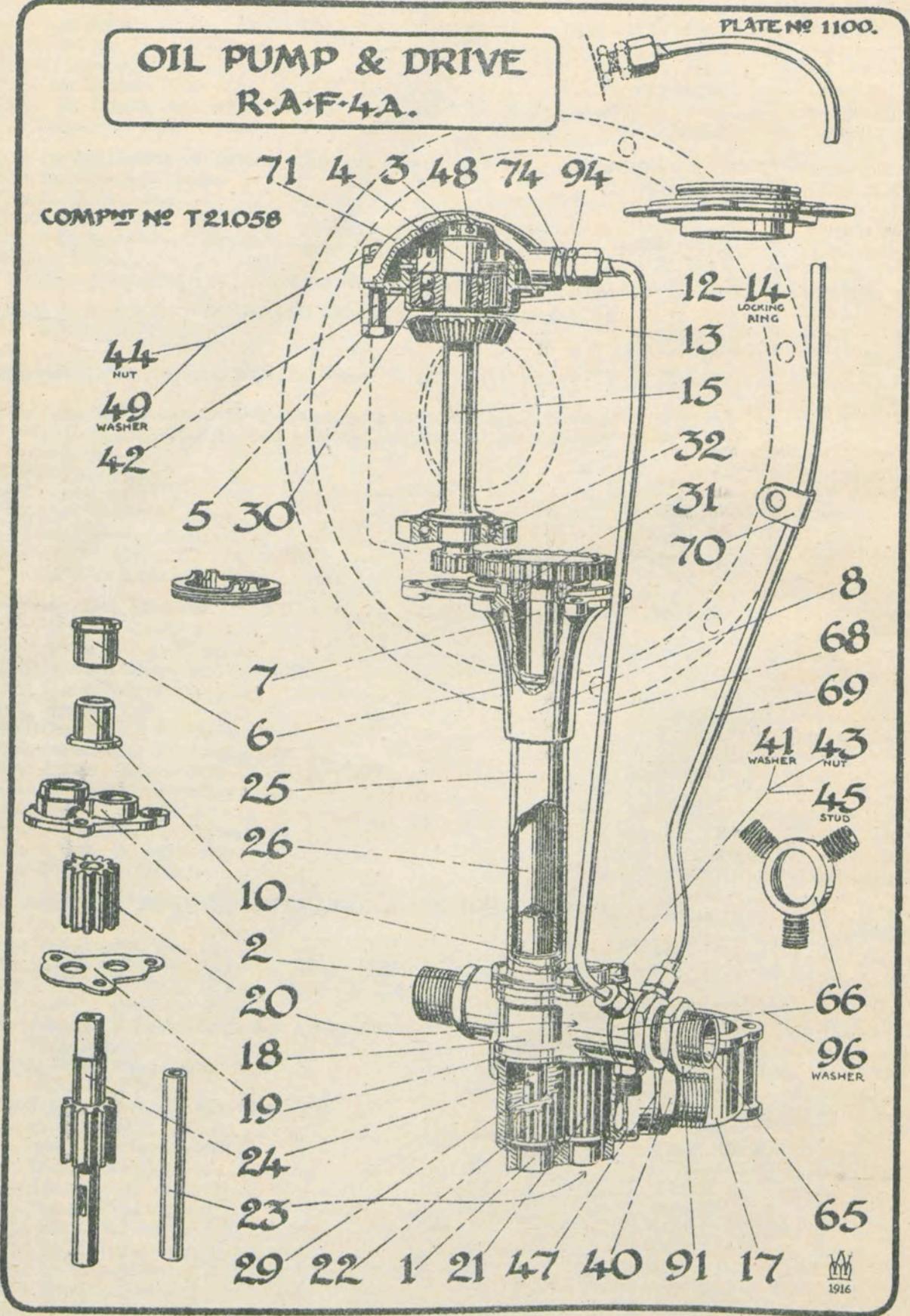
| Description.  | Order No.          | Illustration Ref. | No. off.      |
|---|--------------------|-------------------|---------------|
| <b>Unit T 21440—continued.</b>  |                    |                   |               |
| <b>Component, Hot Air Muffs</b> ... ..  | T. 21440 B.        | ...               | 2 per Unit.   |
| Door, for muffs ... ..  | T. 21439-1         | 55                | 2             |
| Muff, Hot Air ... ..  | T. 21437-1         | 54                | 1             |
| Joint, for carburettor ... ..   | T. 21428-3         | 57                | 1             |
| Pipe, Air Intake ... ..   | T. 21418-1         | 58                | 1             |
| † Pipe, Air Intake for rear carburettor when fitted on R.E. 8 with Daimler cowling ... ..   | T. 25343-1         | —                 | 1             |
| Nut for carburettor and support studs ... ..  | AGS. 117 C         | —                 | 2             |
| Nut, for carburettor studs ... ..   | AGS. 116 C         | —                 | 4             |
| Screws, Cheese Head ... ..  | AGS. 247 2 BA × ½" | —                 | 18            |
| Studs, Carburettor ... ..   | AGS. 132 D         | —                 | 2             |
| Studs, Carburettor and Support ... ..   | AGS. 132 F         | —                 | 2             |
| Washer, Special ... ..  | AGS. 163 E         | —                 | 4             |
| † When ordering Unit or Component for engine as fitted quote "For R.E. 8 with Daimler Cowling."   |                    |                   |               |
| <b>Unit, B. &amp; B. CARBURETTOR AND INDUCTION PIPES FOR B.E. 12 AEROPLANE ONLY</b> ... ..  |                    |                   |               |
|   | T. 25114           | —                 | 1 per Engine. |
| <b>Component, Carburettor and Induction Pipes</b> ... ..  | T. 25114 A         | —                 | 1 per Unit.   |
| This Component is composed of the same parts as Component T. 21440 A in the previous B. & B. Unit with the exception of the following parts:— |                    |                   |               |
| Carburettor, Front ... ..   | T. 21453           | —                 | 1             |
| Carburettor, Rear ... ..  | T. 25116           | —                 | 1             |
| Distance Piece, Carburettor... ..   | A 12031-1          | —                 | 1             |
| Support, Carburettor Rear ... ..  | T 25108-1          | —                 | 1             |
| Washers, for inlet pipe ... ..  | T 4790-228         | —                 | 2             |
| For other parts order from C. 21440 A.  |                    |                   |               |
| <b>Component, Hot Air Muffs (for B.E. 12)</b> ... ..  | T. 25114 B         | —                 | 1 per Unit.   |
| Door, for hot air muff ... ..   | T. 21439-1         | —                 | 4             |
| Joint between hot air muff and carb ... ..  | T. 21428-3         | —                 | 2             |
| Muff, Hot Air, front ... ..   | T. 21437-1         | —                 | 1             |
| Muff, Hot Air, rear ... ..  | T. 25116-1         | —                 | 1             |
| Pipe, Carburettor, Air Intake, front ... ..   | T. 21418-1         | —                 | 1             |
| Pipe, Carburettor, Air Intake, rear ... ..  | T. 25103-1         | —                 | 1             |
| Nuts, for carburettor studs ... ..  | AGS. 116 C         | —                 | 6             |
| Nuts, for carburettor support studs ... ..  | AGS. 117 C         | —                 | 2             |
| Studs, for carburettor ... ..   | AGS. 132 D         | —                 | 4             |
| Studs, for carburettor and support ... ..   | AGS. 132 F         | —                 | 4             |
| Screws, C.H., for muff doors ... ..   | AGS. 247 2 BA × ½" | —                 | 36            |
| Washer, Spring, for nuts ... ..   | AGS. 163 E         | —                 | 8             |
| <b>Unit, R.A.F. TYPE INDUCTION PIPES AND CLAUDEL CARBURETTOR</b> T. 6485  |                    |                   |               |
|   |                    | —                 | 1 per Engine. |
| Carburettor, complete ... ..  | T. 6887            | —                 | 2             |
| Clip, Manifold Jointing, "Rotax" Aero, 1½" I/D. ... ..  | —                  | —                 | 2             |
| Clip, Carburettor Pipe, "Rotax" Aero, 1½" I/D.... ..  | —                  | —                 | 2             |
| Connection, Carburettor Pipe ... ..   | T. 6484-4          | —                 | 4             |
| Manifold, Front Induction (R.A.F. type), with ... ..  |                    |                   |               |
| Plug, Manifold ... ..   | G. 937             | { T. 6458-1       | 1             |
| Stud, for wire support ... ..   |                    | { T. 6484-1       | 1             |
| Washer, for plug ... ..   |                    | { AGS. 130 B      | 6             |
| Manifold, Induction (R.A.F. type), with ... ..  |                    | { T. 6484-2       | 1             |
| Plug, Manifold ... ..   | G. 938             | { T. 6459-1       | 1             |
| Stud, for wire support ... ..   |                    | { T. 6484-1       | 1             |
| Washer, for plug ... ..   |                    | { AGS. 130 B      | 6             |
| Nut, Carburettor ... ..   |                    | { T. 6484-2       | 1             |
| Pad, for manifold support ... ..  | T. 6230-1          | —                 | 1             |
| Pipe, No. 1 Carburettor, with Collar ... ..   | T. 6484-6          | —                 | 6             |
| Pipe, No. 2 Carburettor, with Collar ... ..   | T. 6455-1          | —                 | 1             |
| Pipe, No. 3 Carburettor, with Collar ... ..   | T. 6455-2          | —                 | 1             |
| Pipe, No. 4 Carburettor, with Collar ... ..   | T. 6456-1          | —                 | 1             |
| Ring, Packing, for inlet sleeve ... ..  | T. 6456-2          | —                 | 1             |
| Ring, Carburettor Jointing ... ..   | T. 4958-2          | —                 | 4             |
| Rubber, Manifold Jointing ... ..  | T. 4958-6          | —                 | 4             |
| *Shims, Adjusting, for induction manifold ... ..  | T. 6484-3          | —                 | 1             |
| Sleeve, Inlet Pipe ... ..   | T. 6457-4          | —                 | 6             |
| Support, Manifold ... ..  | T. 6230-4          | —                 | 4             |
| Spigot, Carburettor ... ..  | T. 6484-5          | —                 | 6             |
| Nut, for H.T. wire support ... ..   | T. 6230-3          | —                 | 4             |
|   | AGS. 115 B         | —                 | 12            |

\* Not required with Daimler Type Manifold.



# OIL PUMP & DRIVE R.A.F.4A.

COMPNT NO T21058



## R.A.F. 4A.

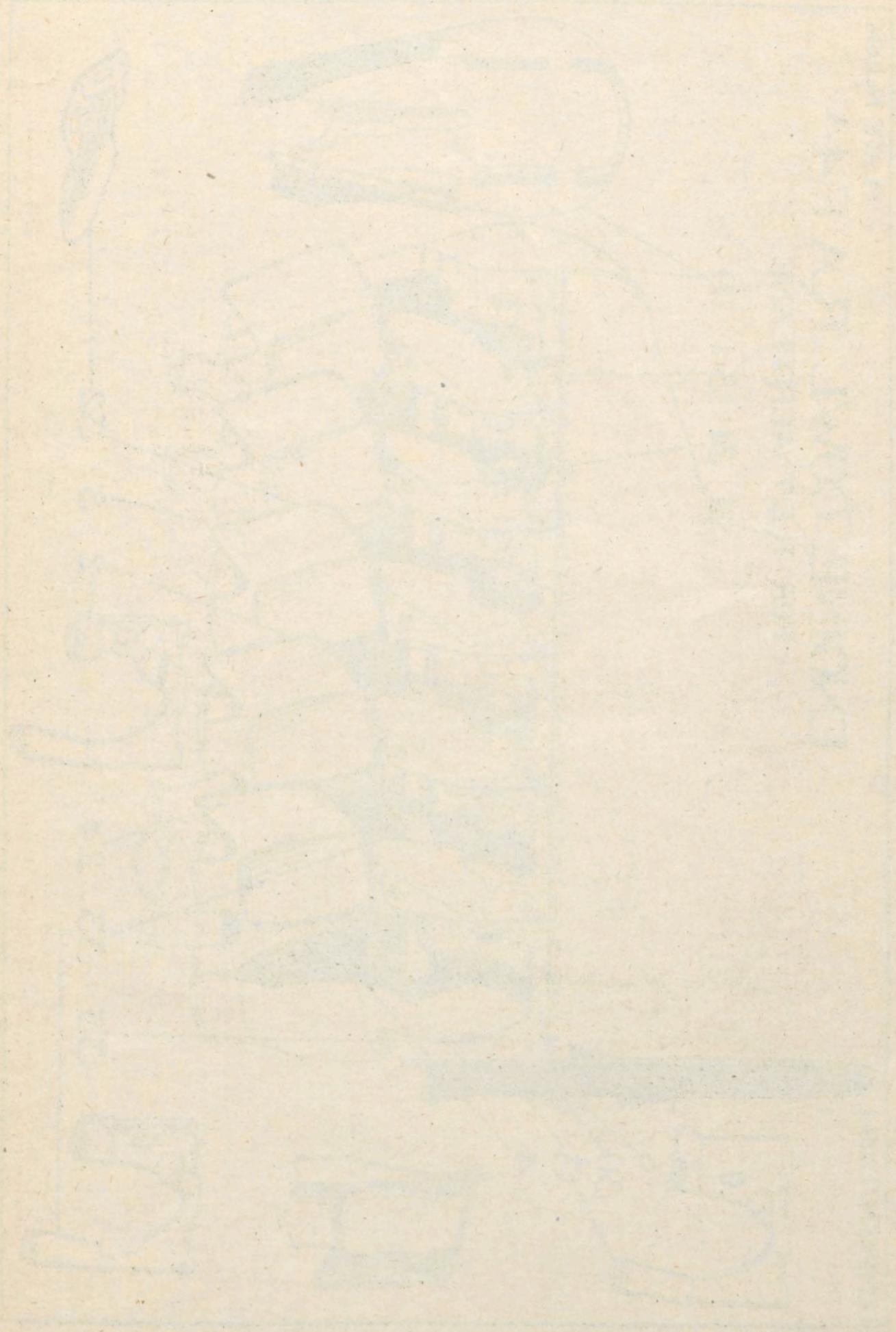
## INDUCTION PIPES AND OIL PUMP.

| Unit,   | Description.      | Part No.   | Illustration No. | No. off.      |
|---|-------------------|--|------------------|---------------|
| Unit, DAIMLER TYPE INDUCTION PIPES AND CARBURETTOR ...  | ... ..            | T. 21010   |                  | 1 per Engine. |
| The parts for this Unit are the same as for T. 6485 R.A.F. Type Induction Pipes above with the exception that the group G 937 and G. 938 are replaced by G. 146 and G. 147 given below. |                   |  |                  |               |
| Manifold, Front Induction (Daimler type), with other parts as in G. 937 above   | ... ..            | G. 146   | T. 21007-1       | 1             |
| Manifold, Rear Induction (Daimler type), with other parts as in G. 938 above  | ... ..            | G. 147   | T. 21008-1       | 1             |
| *Unit, INDUCTION PIPES AND CLAUDEL CARBURETTOR, FOR USE ON R.E. 8, B.E. 12 or 12 A ... ..   |                   |  |                  |               |
|   |                   | T. 21878   |                  | 1 per Engine. |
| This Unit consists of the parts comprising Unit T. 6485 or T. 21010 according to the type of induction pipes used, plus the following parts:—   |                   |  |                  |               |
| Distance Piece, Carburettor, for use in B.E. 12 or 12 A   | ... ..            | A. 10678-1   |                  | 1             |
| Muff Air, 1st and 3rd from front  | ... ..            | T. 10505-1   |                  | 2             |
| Muff Air, 2nd and 4th from front  | ... ..            | T. 10505-2   |                  | 2             |
| Washer, for inlet pipe for use in B.E. 12 or 12 A   | ... ..            | T. 4796-238  |                  | 2             |
| * When ordering Unit state Aeroplane required for.  |                   |  |                  |               |
| Unit, OIL PUMP AND FITTINGS ...   | Plate 1100 ... .. | T. 21058.  |                  | 1 per Engine. |
| Component, Oil Pump and Drive   | ... ..            | T. 21058 A.  |                  | 1 per Unit.   |
| Bearing, Hoffmann Ball No. S9   | ... ..            | —  | 32               | 1             |
| Bearing, Skefko Ball No. 1302   | ... ..            | —  | 30               | 1             |
| Bearing, Skefko Ball No. 1202   | ... ..            | —  | 31               | 1             |
| Bevel, Pump Driving   | ... ..            | T. 8443-3  | 15               | 1             |
| Body, for pump, with bush dead end  | ... ..            | T. 6190-6  | —                | 1             |
| Bracket, Bearing  | ... ..            | T. 6189-4  | 8                | 1             |
| Bush, Cover   | ... ..            | T. 6190-3  | 10               | 1             |
| Bush, Driving Gear  | ... ..            | T. 6189-2  | 6                | 1             |
| Casing, Pump  | ... ..            | T. 21053-1   | 18               | 1             |
| Casing, Pump Shaft  | ... ..            | T. 21056-2   | 25               | 1             |
| Cover, Pump   | ... ..            | T. 6187-3  | 2                | 1             |
| Distance Piece  | ... ..            | T. 6188-5  | 4                | 1             |
| Gear, Driving   | ... ..            | T. 6189-3  | 7                | 1             |
| Housing, Ball Bearing   | ... ..            | T. 6192-2  | 12               | 1             |
| Key, for spindle (No. 2 Woodruff)   | ... ..            | —  | 29               | 1             |
| Nut, for housing  | ... ..            | T. 6188-6  | 5                | 1             |
| Nut, Driving Bevel  | ... ..            | T. 6188-4  | 3                | 1             |
| Plate, Dividing   | ... ..            | T. 21053-2   | 19               | 1             |
| Shaft, Pump Driving...  | ... ..            | T. 21056-3   | 28               | 1             |
| Spindle, Idler Wheel  | ... ..            | T. 21053-6   | 23               | 1             |
| Ring, Locking (for housing)   | ... ..            | T. 6192-5  | 14               | 1             |
| Washer, Adjusting, for driving bevel  | ... ..            | T. 6192-4  | 13               | —             |
| Wheel, Idler (top)  | ... ..            | T. 21053-3   | 20               | 1             |
| Wheel, Idler (bottom)   | ... ..            | T. 21053-4   | 21               | 1             |
| Wheel, Pump   | ... ..            | T. 21056-1   | 24               | 1             |
| Wheel, Pump (keyed)   | ... ..            | T. 21053-5   | 22               | 1             |
| Bolts, for pump cover   | ... ..            | AGS. 105 G   | 42               | 2             |
| Nuts, for bolts   | ... ..            | AGS. 117 A   | 44               | 2             |
| Nuts, for casing studs  | ... ..            | AGS. 115 B   | 43               | 3             |
| Pin, Split  | ... ..            | AGS. 166 $\frac{1}{16}$ " $\times$ $\frac{1}{2}$ " | 48               | 1             |
| Studs, for casing   | ... ..            | AGS. 130 H   | 45               | 3             |
| Unions  | ... ..            | AGS. 218 E   | 40               | 3             |
| Washers, for unions   | ... ..            | AGS. 164 J   | 47               | 3             |
| Washer, Spring  | ... ..            | AGS. 163 C   | 41               | 3             |
| Washer, Spring  | ... ..            | AGS. 163 D   | 49               | 2             |
| Component, Oil Pressure Booster   | ... ..            | T. 21058 B   |                  | 1 per Unit.   |
| Booster, Oil Pressure...  | ... ..            | T. 21309-3   | 65               | 1             |
| Clip, for feed pipe   | ... ..            | T. 21078-4   | 70               | 1             |
| Cover, Inspection   | ... ..            | T. 21078-5   | 71               | 1             |
| Distributor, Oil  | ... ..            | T. 21309-4   | 66               | 1             |
| Jet Plug and Union  | ... ..            | T. 21309-2   | 74               | 1             |
| Pipe, Feed (for pump driving gear)  | ... ..            | T. 21310-1   | 68               | 1             |
| Pipe, Feed (for speedometer drive)  | ... ..            | T. 21310-2   | 69               | 1             |
| Nut, Lock (for booster)   | ... ..            | AGS. 207 E   | 91               | 1             |
| Nut, Lock (for union)   | ... ..            | AGS. 207 A   | 94               | 1             |
| Washer  | ... ..            | AGS. 164 J   | 96               | 1             |
| Washer  | ... ..            | AGS. 164 E   | —                | 1             |

R.A.F. 4A.

## COWL

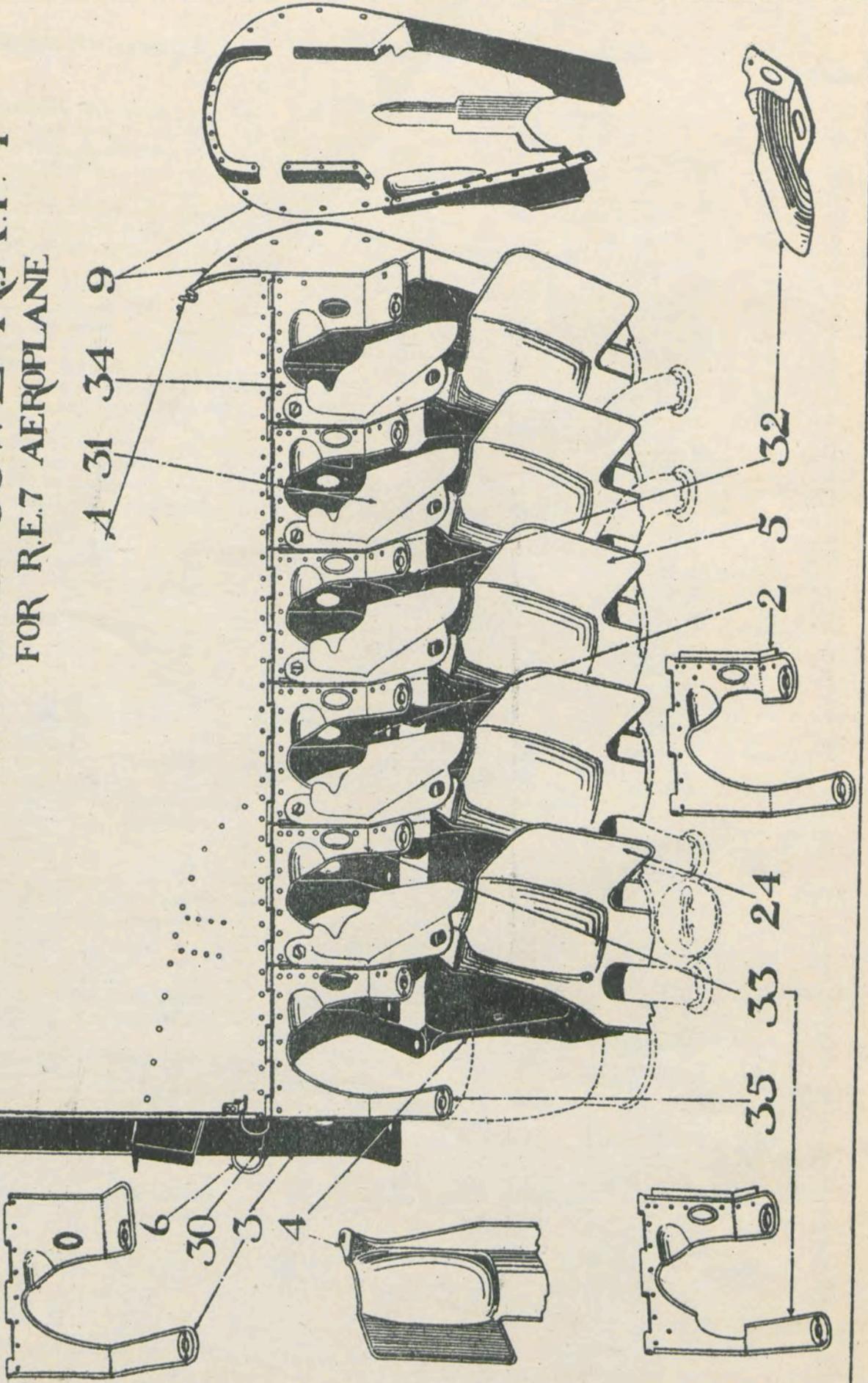
| Description.  | Part No.        | Illustration No. | No. off.      |
|---|-----------------|------------------|---------------|
| Unit. ENGINE COWL FOR R.E. 7. ...                       | Plate 1096. ... | T. 21194.        | 1 per Engine. |
| Bolt, for back plate (top) ...                          | T. 6616-4       | —                | 1             |
| Clip, for rear plate ...                                | T. 6615-3       | —                | 1             |
| Deflector, Air, starboard, with,                        | G. 171          | T. 21195-1       | 4             |
| Eye, for spring ...                                     |                 | T. 3711-222      | 5             |
| Spring ...  |                 | T. 3711-221      | 5             |
| Washer, for eye ...                                     | T. 3711-6       | —                | 10            |
| Deflector, Air, port, with,                             | G. 172          | T. 21241-1       | 24            |
| Eye, for spring ...                                     |                 | T. 3711-222      | 4             |
| Spring ...  |                 | T. 3711-221      | 4             |
| Washer, for eye ...                                     | T. 3711-6       | —                | 8             |
| Deflector, Air, port, with                              | G. 173          | T. 21240-1       | 5             |
| Eye, for spring ...                                     |                 | T. 3711-222      | 1             |
| Spring ...  |                 | T. 3711-221      | 1             |
| Washer, for eye ...                                     | T. 3711-6       | —                | 2             |
| Deflector, Air, starboard (top of cylinder)             | T. 21137-2      | 32               | 5             |
| Deflector, Air, port (top of cylinder) ...              | T. 21137-1      | 31               | 5             |
| Plate, Top, with ...                                    | T. 21191-1      | 1                | 1             |
| Burrs, Tinman's ...                                     | AGS. 191 B      | —                | As req.       |
| Clips, for hinge wire ...                               | T. 4891-17      | —                | 2             |
| Plate, Deflector ...                                    | T. 21192-1      | —                | 1             |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | G. 939          | —                | As req.       |
| Vane, Deflector ...                                     | T. 21193-3      | —                | 1             |
| Vane, Deflector ...                                     | T. 21193-4      | —                | 1             |
| Vane, Deflector ...                                     | T. 21193-1      | —                | 1             |
| Vane, Deflector ...                                     | T. 21193-2      | —                | 1             |
| Plate, Back, with ...                                   | T. 6615-1       | 9                | 1             |
| Baffle, End ...   | T. 6697-2       | —                | 1             |
| Baffle, End ...   | T. 6697-1       | —                | 1             |
| Clip ...  | T. 6697-3       | —                | 1             |
| Clip ...  | G. 940          | T. 6615-3        | 1             |
| Plate, Angle ...  | T. 6616-1       | —                | 1             |
| Plate, Angle ...  | T. 6616-2       | —                | 1             |
| Plate, Angle ...  | T. 6616-3       | —                | 1             |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | As req.       |
| Plate, Hinge, with ...                                  | T. 21245-1      | 2                | 5             |
| Rivets, $\frac{3}{8} \times \frac{3}{16}$ aluminium ... | G. 167          | —                | As req.       |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | As req.       |
| Washer ...  | T. 6695-3       | —                | 10            |
| Plate, Hinge, with ...                                  | T. 21245-2      | 33               | 4             |
| Burrs, Tinman's ...                                     | G. 168          | AGS. 191 B       | As req.       |
| Rivets, $\frac{3}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 16            |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 52            |
| Washer ...  | T. 6695-3       | —                | 8             |
| Plate, Hinge, with ...                                  | T. 6481-1       | 35               | 1             |
| Burrs, Tinman's ...                                     | G. 169          | AGS. 191 B       | As req.       |
| Rivets, $\frac{3}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 4             |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 13            |
| Washers ...   | T. 6695-3       | —                | 2             |
| Plate, Special End Hinge, with                          | T. 6481-2       | 3                | 1             |
| Burrs, Tinman's ...                                     | G. 38           | AGS. 191 B       | As req.       |
| Rivets, $\frac{3}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 4             |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 13            |
| Washer ...  | T. 6695-3       | —                | 2             |
| Plate, Special End Hinge, with                          | T. 21246-1      | 34               | 1             |
| Burrs, Tinman's ...                                     | G. 170          | AGS. 191 B       | As req.       |
| Rivets, $\frac{3}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 4             |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ aluminium ... | —               | —                | 13            |
| Washer ...  | T. 6695-3       | —                | 2             |
| Rod, Tie (for top plate) ...                            | A. 6615-2       | 30               | 1             |
| Wire, Hinge (for top plate) ...                         | T. 6695-2       | —                | 2             |
| Washer, for top plate bolt ...                          | T. 6616-5       | —                | 6             |
| Bolt, for cylinder top deflectors ...                   | AGS. 103 C      | —                | 10            |
| Nut, Wing (for top plate bolt) ...                      | AGS. 113 C      | —                | 3             |
| Nut, for top plate bolt ...                             | AGS. 115 B      | —                | 3             |
| Washer ...  | AGS. 160 C      | —                | 6             |
| Washer, for AGS. 103 C ...                              | AGS. 163 C      | —                | 10            |



COMPONENT 21194

PLATE No. 1096

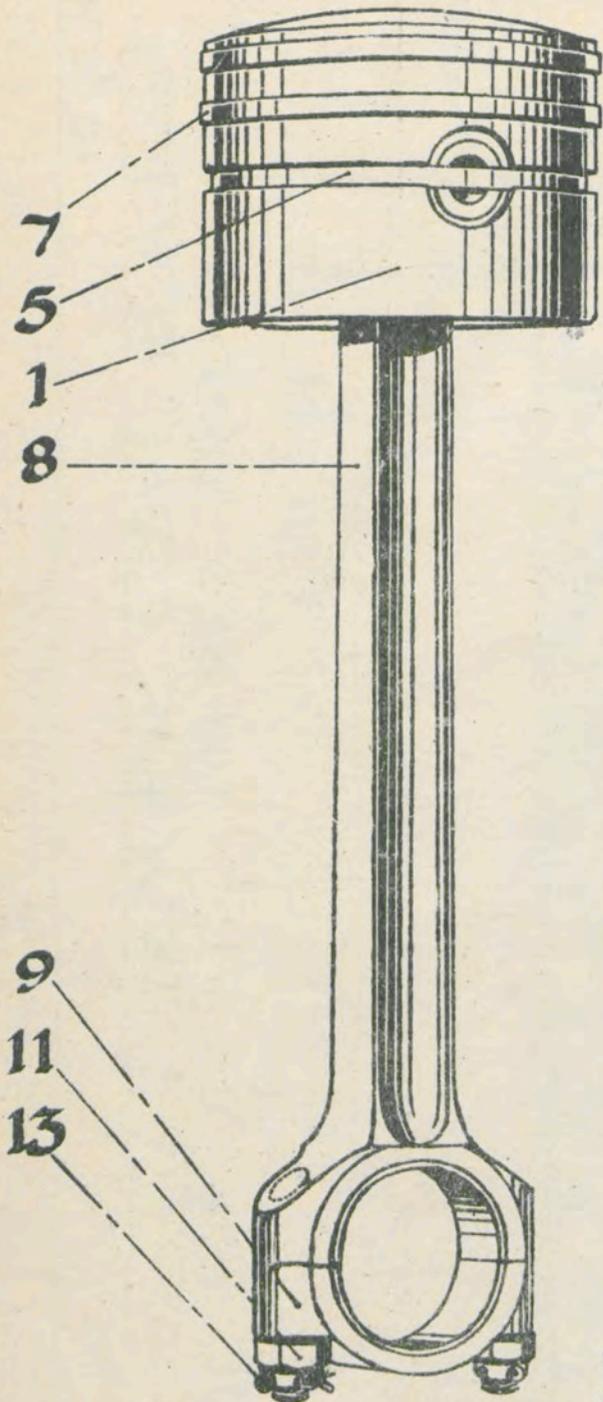
# ENGINE COWL R.A.F. 4A FOR R.E.7 AEROPLANE





COMPHT T9720A

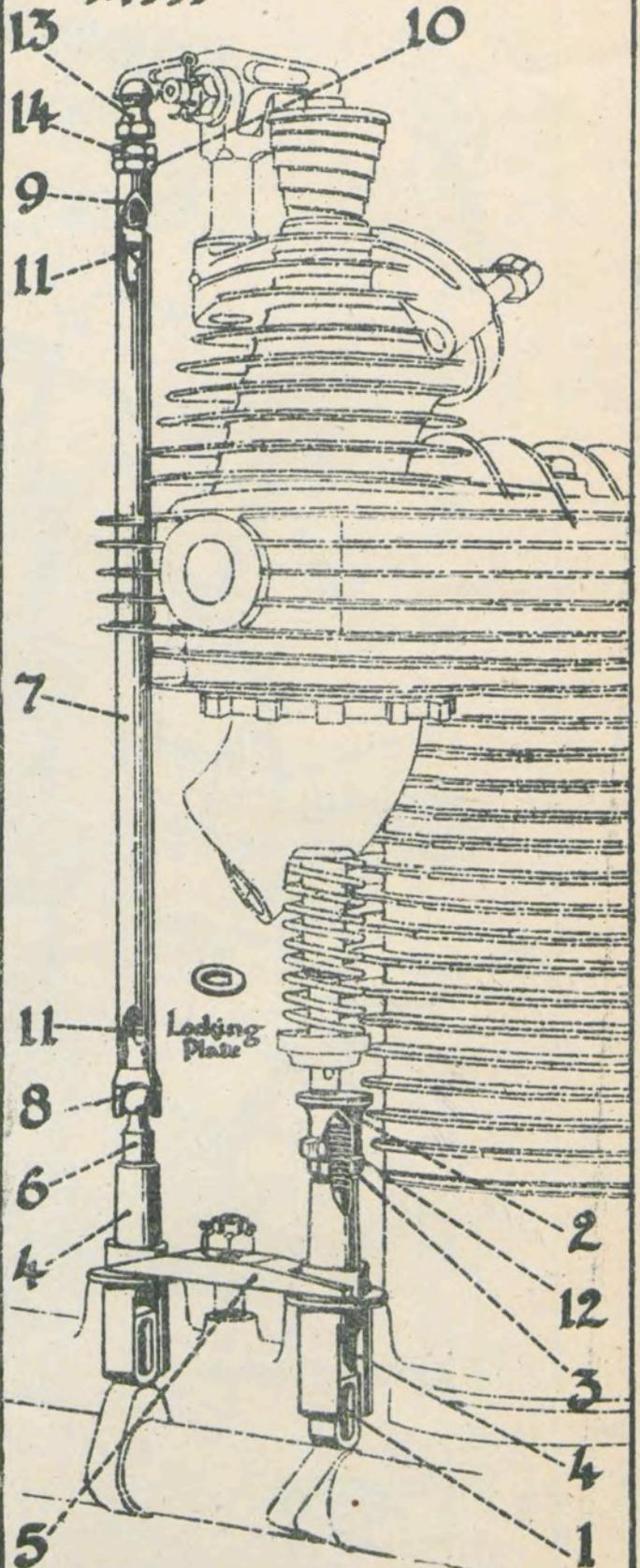
PLATE NR 1107.



ALUMINIUM PISTON-  
& CONNECTING ROD.

T4991

PLATE NR 757



VALVE GEAR. R.A.F. 4A & 5



## R.A.F. 4A.

## COWL, PISTON AND VALVE GEAR.

| Description.                   | Order No. | Illustration Ref. | No. off      |
|--------------------------------|-----------|-------------------|--------------|
| Unit, ENGINE COWL FOR B.E. 12. | T. 21235. |                   | 1 per Engine |

NOTE.—This Cowl is exactly similar to that for RE. 7, with the exception of top plate G. 939, which is replaced by G. 941 below. For remaining parts order from list for RE. 7 Cowl above.

|   |        |            |   |         |
|---|--------|------------|---|---------|
| Plate, Cowl Top, with                       |        | T. 9046-1  | — | 1       |
| Burrs, for rivets                           |        | AGS. 191 B | — | As req. |
| Clips, for hinge pin                        |        | T. 4891-17 | — | 2       |
| Plate, Deflector                            |        | T. 21236-1 | — | 1       |
| Plate, Deflector                            |        | T. 21238-1 | — | 1       |
| Vane, Deflector                             | G. 941 | T. 21237-3 | — | 1       |
| Vane, Deflector                             |        | T. 21237-4 | — | 1       |
| Vane, Deflector                             |        | T. 21237-1 | — | 1       |
| Vane, Deflector                             |        | T. 21237-2 | — | 1       |
| Rivets, $\frac{1}{8} \times \frac{3}{16}$ " |        | —          | — | As req. |
| Rivets, for clips                           |        | —          | — | As req. |

## R.A.F. 4A &amp; 5.

|   |         |  |                |
|---|---------|--|----------------|
| Unit, ALUMINIUM PISTON AND CONNECTING ROD. Plate 1107 | T. 9720 |  | 12 per Engine. |
|---|---------|--|----------------|

|                                  |        |                                   |    |   |
|----------------------------------|--------|-----------------------------------|----|---|
| Piston, with                     |        | T. 21329-1                        | 1  | 1 |
| Bush, Piston                     |        | T. 21329-2                        | —  | 2 |
| Pin, Gudgeon                     | G. 8 A | T. 9395-2                         | —  | 1 |
| Ring Piston                      |        | T. 21329-3                        | 7  | 2 |
| Ring, Securing, Gudgeon          |        | T. 9395-3                         | 5  | 1 |
| Rod, Connecting, with            |        | T. 3130-11                        | 8  | 1 |
| Bush, Top                        |        | T. 7562-4                         | —  | 1 |
| Cap                              |        | T. 3130-12                        | 9  | 1 |
| Metal, White (Richard's Plastic) | G. 9 A | —                                 | —  | — |
| Nut                              |        | T. 3130-14                        | 11 | 2 |
| Pin, Split                       |        | AGS. 166 $\frac{1}{8} \times 1$ " | 13 | 2 |
| Stud                             |        | T. 3130-13                        | —  | 2 |

|   |         |  |                |
|---|---------|--|----------------|
| Unit, CAST IRON PISTON AND CONNECTING ROD | T. 4981 |  | 12 per Engine. |
|---|---------|--|----------------|

|                                  |      |   |   |   |
|----------------------------------|------|---|---|---|
| Piston, with                     |      | T. 3549-5                                   | — | 1 |
| Pin, Gudgeon                     |      | T. 3549-6                                   | — | 1 |
| Plate, Locking, Gudgeon Pin      | G. 8 | T. 3549-9                                   | — | 1 |
| Pin, Split                       |      | AGS. 166 $\frac{1}{8} \times \frac{1}{2}$ " | — | 1 |
| Ring, Piston                     |      | T. 21329-3                                  | — | 3 |
| Setscrew, Gudgeon Pin            |      | T. 3549-8                                   | — | 1 |
| Rod, Connecting, with            |      | T. 3130-11                                  | — | 1 |
| Bush, Top                        |      | T. 3549-7                                   | — | 1 |
| Cap                              |      | T. 3130-12                                  | — | 1 |
| Metal, White (Richard's Plastic) | G. 9 | —   | — | 2 |
| Nut                              |      | T. 3130-14                                  | — | 2 |
| Pin, Split                       |      | AGS. 166 $\frac{1}{8} \times 1$ "           | — | 2 |
| Stud                             |      | T. 3130-13                                  | — | 2 |

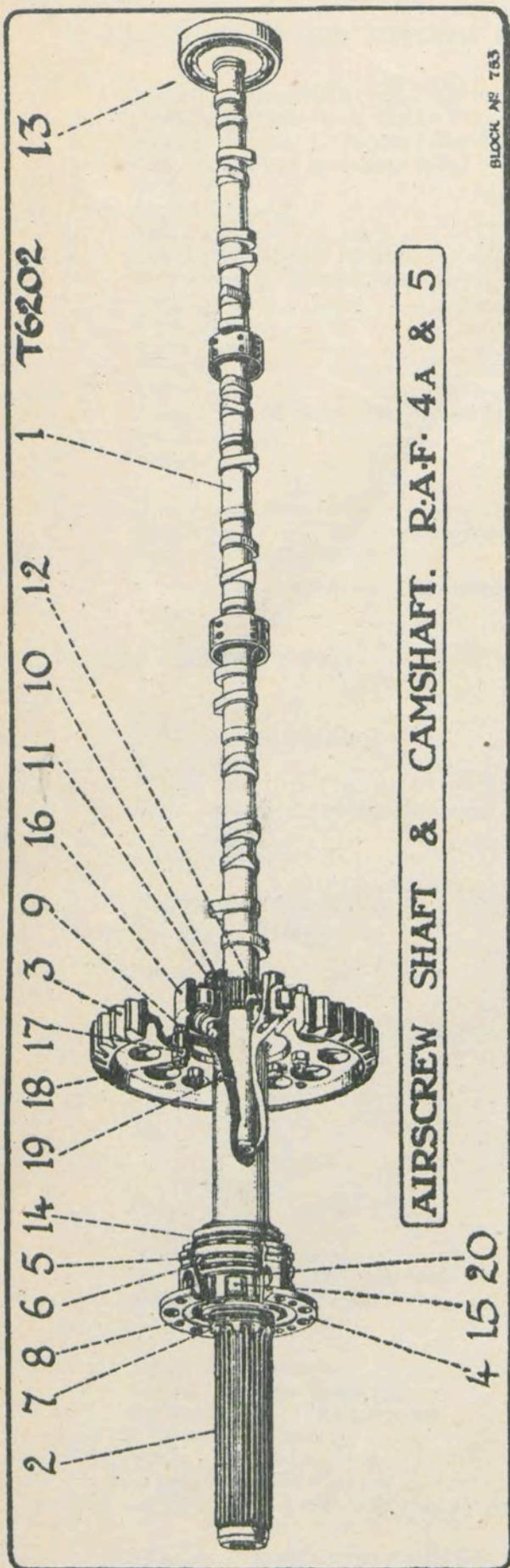
|                  |           |         |                |
|------------------|-----------|---------|----------------|
| Unit, VALVE GEAR | Plate 757 | T. 4991 | 12 per Engine. |
|------------------|-----------|---------|----------------|

|  |        |             |    |   |
|--|--------|-------------|----|---|
| Bridge, Tappet Guide                               |        | T. 3557-33  | 5  | 1 |
| Guide, Tappet (exhaust valve), with                |        | T. 5069-2   | 4  | 1 |
| Tappet   | G. 105 | T. 5069-4   | 6  | 1 |
| Tappet, Inlet Valve, with                          |        | T. 5069-1   | 1  | 1 |
| Guide, Tappet                                      |        | T. 5069-2   | 4  | 1 |
| Locknut  | G. 104 | T. 2888-40  | 3  | 1 |
| Nut, for tappet                                    |        | T. 2888-181 | 2  | 1 |
| Washer, Locking                                    |        | T. 5069-5   | 12 | 1 |
| Tube, Exhaust Valve Push Rod, with                 |        | T. 5069-3   | 7  | 1 |
| End, Lower, for rod                                |        | T. 2889-39  | 8  | 1 |
| End, Upper, for rod                                |        | T. 3577-46  | 9  | 1 |
| End, Ball, for rod                                 | G. 24  | T. 3577-45  | 13 | 1 |
| Nut, Lock, for ball end                            |        | T. 3577-47  | 10 | 1 |
| Pins, Rivets, for rod, 2mm. $\times \frac{1}{2}$ " |        | —           | 11 | 4 |
| Plate, Locking, for lock nut                       |        | T. 4630-3   | 14 | 1 |

## R.A.F. 4A. CAMSHAFT, AIRSCREW BOSS AND MAGNETO DRIVE.

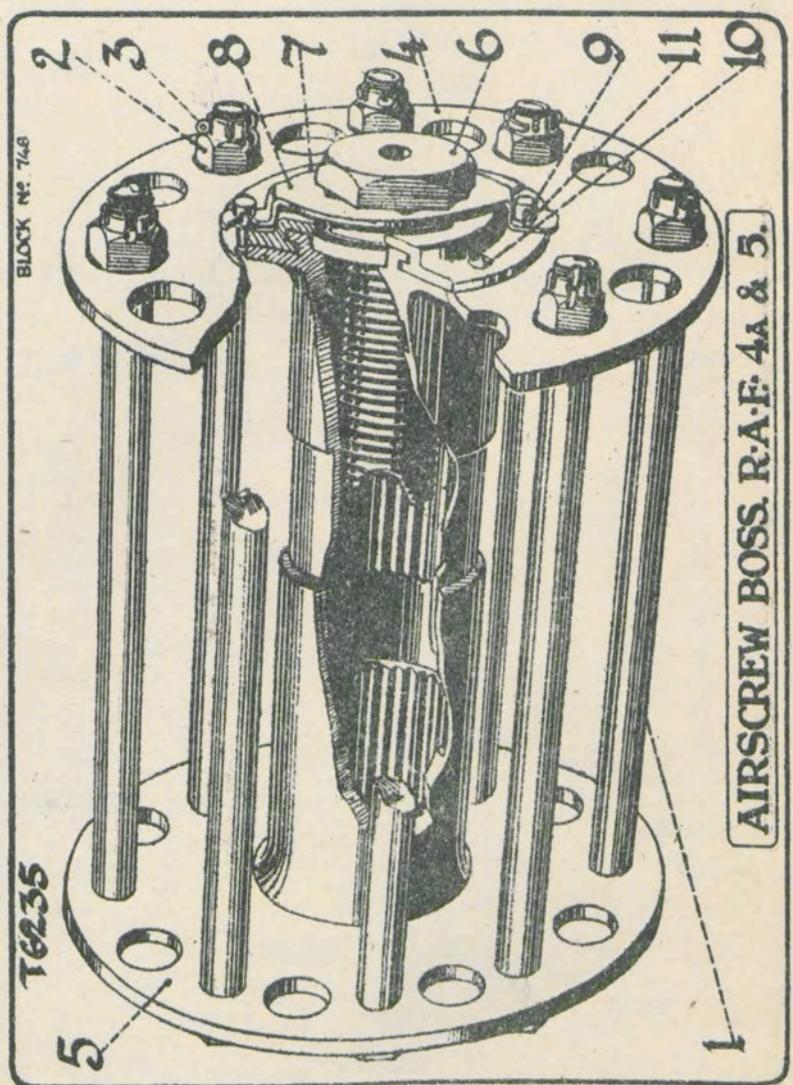
| Description.   | Order No.                | Illustration Ref. | No. off.             |
|--|--------------------------|-------------------|----------------------|
| <b>Unit, CAMSHAFT AND AIRSCREW SHAFT. Plate 753</b> ... ..                               | <b>T. 6202</b>           |                   | <b>1 per Engine.</b> |
| Bearing, Camshaft, rear roller (Hoffmann roller bearing No. 330) ...                     | —                        | 13                | 1                    |
| Bearing, Airscrew Shaft, front roller (Hoffmann roller bearing R.L.S. 15)                | —                        | 15                | 1                    |
| Bearing, Airscrew Shaft, rear roller (Hoffmann roller bearing R. 350) ...                | —                        | 16                | 1                    |
| Bolt, for aircrew shaft gear wheel   | T. 6183-3                | 9                 | 6                    |
| Camshaft   | T. 6051-1                | 1                 | 1                    |
| Flange, Thrust   | T. 6182-1                | 4                 | 1                    |
| Nut, Locking   | T. 3555-61               | 10                | 1                    |
| Nut, Thrust Washer Locking   | T. 6182-3                | 5                 | 1                    |
| Nut, Airscrew Shaft Locking  | T. 6182-5                | 7                 | 1                    |
| Ring, Locking...   | T. 6182-4                | 6                 | 1                    |
| Ring, Locking...   | T. 6190-4                | 8                 | 1                    |
| Screw, Grub  | T. 5039-4                | 12                | 1                    |
| Shaft, Airscrew  | T. 6181-1                | 2                 | 1                    |
| Sleeve, Distance   | T. 6262-3                | 20                | 1                    |
| Washer, Double Thrust (Hoffmann Thrust No. W.D. 15½)                                     | —                        | 14                | 1                    |
| Wire, Locking...   | T. 3555-62               | 11                | 1                    |
| *Wheel, Gear   | T. 8670-1                | —                 | 1                    |
| Nut, for gear wheel bolt   | AGS. 119 E               | 17                | 6                    |
| Pin, Taper, for cam and aircrew shafts   | AGS. 167 ¼" × 2"         | 19                | 1                    |
| Pin, Split, for aircrew shaft  | AGS 166 ⅜" × 1½"         | 18                | 6                    |
| * This wheel and crankshaft pinion T. 9115-1 are to be supplied in pairs wired together. |                          |                   |                      |
| <b>Unit, AIRSCREW BOSS</b> ... ..  | <b>Plate 748.</b> ... .. | <b>T. 6235.</b>   | <b>1 per Engine.</b> |
| Bolt, Securing   | T. 6256-12               | 1                 | 8                    |
| Collar, Extractor Screw  | T. 4047-4                | 7                 | 1                    |
| Flange, Front  | T. 6234-1                | 4                 | 1                    |
| Flange, Rear   | T. 6234-2                | 5                 | 1                    |
| Plate, Locking, for extraction screw   | T. 4047-8                | 8                 | 1                    |
| Rivet, Special   | T. 4047-9                | 9                 | 2                    |
| Screw, Extractor   | T. 4047-3                | 6                 | 1                    |
| Nut, for securing bolt   | AGS. 119 H               | 2                 | 8                    |
| Pin, Split, for screw  | AGS. 166 ⅜" × 1½"        | 11                | 2                    |
| Pin, Split   | AGS. 166 ⅜" × 1½"        | 3                 | 8                    |
| Rivet, Snap Head   | AGS. 260 ⅜" × ½"         | 10                | 4                    |
| <b>Component, Z.U. 6 MAGNETO DRIVE AND FITTINGS. Plate 1097</b> ...                      | <b>T. 21215 A.</b>       |                   | <b>2 per Engine.</b> |
| Bearing, Ball (Hoffmann S. 5)  | —                        | 31                | 1                    |
| Block, Packing, for mag.   | T. 6194-4                | —                 | 1                    |
| Clip, with   | T. 21233-2               | 13                | 1                    |
| Pin, Clip Buckle   | T. 8769-2                | 14                | 1                    |
| Rivets   | AGS. 397 ⅜" × ⅜"         | 47                | 10                   |
| Cover, Magneto Drive   | T. 8963-2                | 1                 | 1                    |
| Dog, Magneto Drive   | T. 9467-2                | 8                 | 1                    |
| Flange, for magneto drive  | T. 9467-7                | 9                 | 1                    |
| Key, Magneto Spindle (Woodruff No. 3)  | —                        | 32                | 1                    |
| Magneto (Bosch ZU 6 clockwise)   | —                        | 29                | 1                    |
| Nut, Magneto Spindle   | T. 21070-3               | 12                | 1                    |
| Pin, Clip  | T. 8769-4                | 16                | 1                    |
| Shims, for drive cover   | T. 8816-4                | 2                 | 6                    |
| Screws, Magneto Holding Down   | T. 6194-5                | 11                | 4                    |
| Screw, Magneto Timing Fixing   | T. 8964-6                | —                 | 1                    |
| Screw, Clip Adjusting  | T. 8769-3                | 15                | 1                    |
| Spring, Magneto Driving  | T. 8964-4                | 7                 | 1                    |
| Wheel, Magneto Driven  | T. 9467-6                | 3                 | 1                    |
| Wire, Locking (18 G. M.S. wire, 12 long)   | —                        | 30                | 1                    |
| Bolt, for magneto driven wheel   | AGS. 103 F               | 42                | 1                    |
| Bolts, for magneto driven dog  | AGS. 103 C               | 43                | 2                    |
| Nut for AGS. 103 F and 103 C   | AGS. 115 B               | 44                | 3                    |
| Nut, Lock (for adjusting screw)  | AGS. 117 A               | 48                | 1                    |
| Washer, Spring, for AGS. 103 F and 103 C   | AGS. 162 C               | 45                | 3                    |
| Washer, Tab, for magneto spindle nut   | AGS. 194-11              | 46                | 1                    |





AIRSCREW SHAFT & CAMSHAFT. R.A.F. 4A & 5

BLOCK NO. 763



AIRSCREW BOSS. R.A.F. 4A & 5.

BLOCK NO. 748

T6235









## R.A.F. 4A.

## MAGNETO DRIVE.

| Description.  | Order No.   | Illustration Ref.                          | No. off.             |
|---|-------------|--|----------------------|
| <b>Component, A 6 S (formerly HL 6) Magneto Drive and Fittings. Plate 794. T. 9608 A.</b> |             |  |                      |
|   |             |  | <b>2 per Engine.</b> |
| Bearing, Ball (Hoffmann S 5)  | —           | 11   | 1                    |
| Clip, with  | G. 943      | T. 8769-1                                  | 13                   |
| Pin, Clip Buckle...   |             | T. 8769-2                                  | 14                   |
| Rivets  |             | AGS. 397 $\frac{1}{8} \times \frac{3}{16}$ | 23                   |
| Cover, Magneto Drive  | T. 8963-2   | 1  | 1                    |
| Dog, Magneto Drive  | T. 9467-2   | 3  | 1                    |
| Flange, for magneto drive   | T. 9467-1   | 4  | 1                    |
| Key, Magneto Spindle  | T. 7873-5   | 5  | 1                    |
| Link, Fixing  | T. 8816-3   | 12   | 1                    |
| Magneto, A 6 S or H L 6 clockwise   | —           | 7  | 1                    |
| Nut, Magneto Spindle  | T. 21070-3  | 17   | 1                    |
| Pin, Clip   | T. 8769-4   | 16   | 1                    |
| Screws, Magneto Holding Down  | T. 8816-2   | 9  | 4                    |
| Screw, Clip Adjusting   | T. 8769-3   | 15   | 1                    |
| Shims, for drive cover  | T. 8816-4   | 6  | 8                    |
| Spring, Magneto Driving   | T. 8964-4   | 21   | 1                    |
| Wheel Magneto Driven  | T. 8963-1   | 2  | 1                    |
| Wire, Locking (18 G. M.S. wire, 12" long)   | —           | —  | —                    |
| Bolt, for magneto fixing link   | AGS. 103 B  | 24   | 1                    |
| Bolt, for magneto driven wheel  | AGS. 103 F  | 26   | 1                    |
| Bolts, for magneto drive dog  | AGS. 103 C  | 25   | 2                    |
| Nuts, for AGS. 103 F and AGS. 103 C   | AGS. 115 B  | 28   | 3                    |
| Nut, Lock (for adjusting screw)   | AGS. 117 A  | 32   | 1                    |
| Washer, Spring, for AGS. 103 F and 103 C  | AGS. 162 C  | 29   | 3                    |
| Washer Tap, for magneto spindle nut   | AGS. 194-11 | 31   | 1                    |
| <b>Component, D U 6 MAGNETO DRIVE AND FITTINGS. Plate 1099. T. 9608 D.</b>                |             |  |                      |
|   |             |  | <b>2 per Engine.</b> |
| Bearing, Ball (Hoffmann S 5)  | —           | 67   | 1                    |
| Block Packing, for magneto...   | T. 6194-4   | 75   | 1                    |
| Cover, Magneto Drive  | T. 8963-2   | 65   | 1                    |
| Clip, with  | G. 944      | T. 21233-1                                 | 87                   |
| Pin, Clip Buckle...   |             | T. 8769-2                                  | 88                   |
| Rivets  |             | AGS. 397 $\frac{1}{8} \times \frac{3}{16}$ | —                    |
| Dog, Magneto Drive  | T. 9467-2   | 68   | 1                    |
| Flange, for magneto drive   | T. 9467-7   | 69   | 1                    |
| Key, Magneto Spindle, No. 5 Woodruff  | —           | 71   | 1                    |
| Magneto, D U 6 Bosch, clockwise, with extra terminal                                      | —           | 76   | 1                    |
| Nut, Magneto Spindle  | T. 21070-3  | 77   | 1                    |
| Pin, Clip   | T. 8769-4   | 91   | 1                    |
| Plate, Mag. advance fixing  | T. 8964-5   | 74   | 1                    |
| Screws, Magneto Holding Down  | T. 6194-5   | 72   | 4                    |
| Screw, Clip Adjusting   | T. 8769-3   | 90   | 1                    |
| Shims, for drive cover  | T. 8816-4   | 70   | 8                    |
| Spring, Magneto Driving   | T. 8964-4   | 81   | 1                    |
| Wheel, Magneto Driven   | T. 9467-6   | 66   | 1                    |
| Wire, Locking (18 G. M.S. wire, 12" long)   | —           | 73   | 1                    |
| Bolt, for magneto drive wheel   | AGS. 103 F  | 86   | 1                    |
| Bolts, for magneto drive dog  | AGS. 103 C  | 82   | 2                    |
| Nuts, for AGS. 103 F and AGS. 103 C   | AGS. 115 B  | 84   | 3                    |
| Nut, Lock, for adjusting screw  | AGS. 117 A  | 93   | 1                    |
| Washer, Spring  | AGS. 162 C  | 83   | 2                    |
| Washer, Tab   | AGS. 194-11 | 89   | 1                    |

## R.A.F. 4A.

## MAGNETO DRIVE.

| Description.  |     | Order No.   | Illustration Ref.                                  | No. off. |   |
|---|-----|---|--|----------|---|
| <b>Component, 6-CYLINDER DIXIE MAGNETO DRIVE AND FITTINGS</b> ... .. Plate 911. T. 21098 A. 2 per Engine. |     |   |  |          |   |
| Bearing, Ball (Hoffmann S 5)  | ... | —   | 28   | 1        |   |
| Block, Packing, for magneto   | ... | T. 21089-5  | 10   | 1        |   |
| Clamp, Magneto Holding Down   | ... | T. 21089-1  | 11   | 1        |   |
| Cover, Magneto Drive  | ... | T. 8963-2   | 1  | 1        |   |
| Dog, Magneto Drive ...  | ... | T. 9467-2   | 8  | 1        |   |
| Flange, for magneto drive   | ... | T. 21089-6  | 9  | 1        |   |
| Key, Magneto Spindle (Woodruff No. 3)   | ... | —   | 29   | 1        |   |
| Link, Magneto Advance Fixing  | ... | T. 21099-1  | 15   | 1        |   |
| Magneto, 6-Cylinder Dixie, clockwise  | ... | —   | 26   | 1        |   |
| Screws, Magneto Holding Down  | ... | T. 6194-5   | 14   | 4        |   |
| Shims, for drive cover  | ... | T. 8816-4   | 2  | 8        |   |
| Strap, Holding Down, with ...   | ... | G. 945 {  | T. 21089-4   | 12       | 1 |
| Ends, for strap ...   | ... |   | T. 21089-2   | 13       | 2 |
| Rivets ...  | ... |   | AGS. 397 $\frac{5}{16}$ " $\times$ $\frac{3}{8}$ " | 39       | 6 |
| Spring, Magneto Driving   | ... | T. 8964-4   | 7  | 1        |   |
| Wheel, Magneto Driven   | ... | T. 9467-6   | 3  | 1        |   |
| Wire, Locking (18 G. M.S. wire, 12" long)   | ... | —   | 27   | 1        |   |
| Bolt, for magneto driven wheel  | ... | AGS. 103 F  | 33   | 1        |   |
| Bolt, for magneto driving dog and fixing link   | ... | AGS. 103 C  | 34   | 2        |   |
| Nuts, for AGS. 107 F and AGS. 103 C   | ... | AGS. 115 B  | 35   | 4        |   |
| Nuts, for strap ends ...  | ... | AGS. 116 A  | 36   | 2        |   |
| Pin, Split, for magneto spindle   | ... | AGS. 166 $\frac{3}{16}$ " $\times$ $1\frac{1}{4}$ " | 40   | 1        |   |
| Washers, Spring, for bolts ...  | ... | AGS. 162 C  | 38   | 4        |   |
| Washers, Spring, for strap ends   | ... | AGS. 163 D  | 37   | 2        |   |
| <b>Component, 12-CYLINDER DIXIE MAGNETO DRIVE AND FITTINGS</b> ... .. Plate 910 T. 21098 B. 2 per Engine. |     |   |  |          |   |
| Bearing, Ball (Hoffmann S 5)  | ... | —   | 92   | 1        |   |
| Block, Packing, for magneto   | ... | T. 21089-5  | 74   | 1        |   |
| Clamp, Magneto Holding Down   | ... | T. 21089-1  | 75   | 1        |   |
| Cover, Magneto Drive  | ... | T. 8963-2   | 65   | 1        |   |
| Dog, Magneto Drive ...  | ... | T. 9467-2   | 72   | 1        |   |
| Flange, for magneto drive   | ... | T. 21089-6  | 73   | 1        |   |
| Key, Magneto Spindle (Woodruff No. 3)   | ... | —   | 93   | 1        |   |
| Link, Magneto Advance Fixing  | ... | T. 21099-1  | 78   | 1        |   |
| Magneto, 12-Cylinder Dixie, clockwise   | ... | —   | 90   | 1        |   |
| Screws, Magneto Holding Down  | ... | T. 6194-5   | 78   | 4        |   |
| Shims, for drive cover  | ... | T. 8816-4   | 66   | 8        |   |
| Strap, Holding Down, with ...   | ... | G. 946 {  | T. 21089-3   | 76       | 1 |
| Ends, for strap ...   | ... |   | T. 21089-2   | 77       | 2 |
| Rivets ...  | ... |   | AGS. 397 $\frac{5}{16}$ " $\times$ $\frac{3}{8}$ " | 103      | 6 |
| Spring, Magneto Driving   | ... | T. 8964-4   | 71   | 1        |   |
| Wheel, Magneto Driven   | ... | T. 9467-6   | 67   | 1        |   |
| Wire, Locking (18 G. M.S. wire, 12" long)   | ... | —   | 91   | 1        |   |
| Bolt, for magneto driven wheel  | ... | AGS. 103 F  | 97   | 1        |   |
| Bolt, for magneto driving dog and fixing link   | ... | AGS. 103 C  | 98   | 3        |   |
| Nuts, for AGS. 103 F and AGS. 103 C   | ... | AGS. 115 B  | 99   | 4        |   |
| Nuts, for strap ends ...  | ... | AGS. 116 A  | 100  | 2        |   |
| Pin, Split, for magneto spindle   | ... | AGS. 166 $\frac{3}{16}$ " $\times$ $1\frac{1}{4}$ " | 104  | 1        |   |
| Washers, Spring, for bolts ...  | ... | AGS. 162 C  | 102  | 4        |   |
| Washers, Spring, for strap ends   | ... | AGS. 163 D  | 101  | 2        |   |



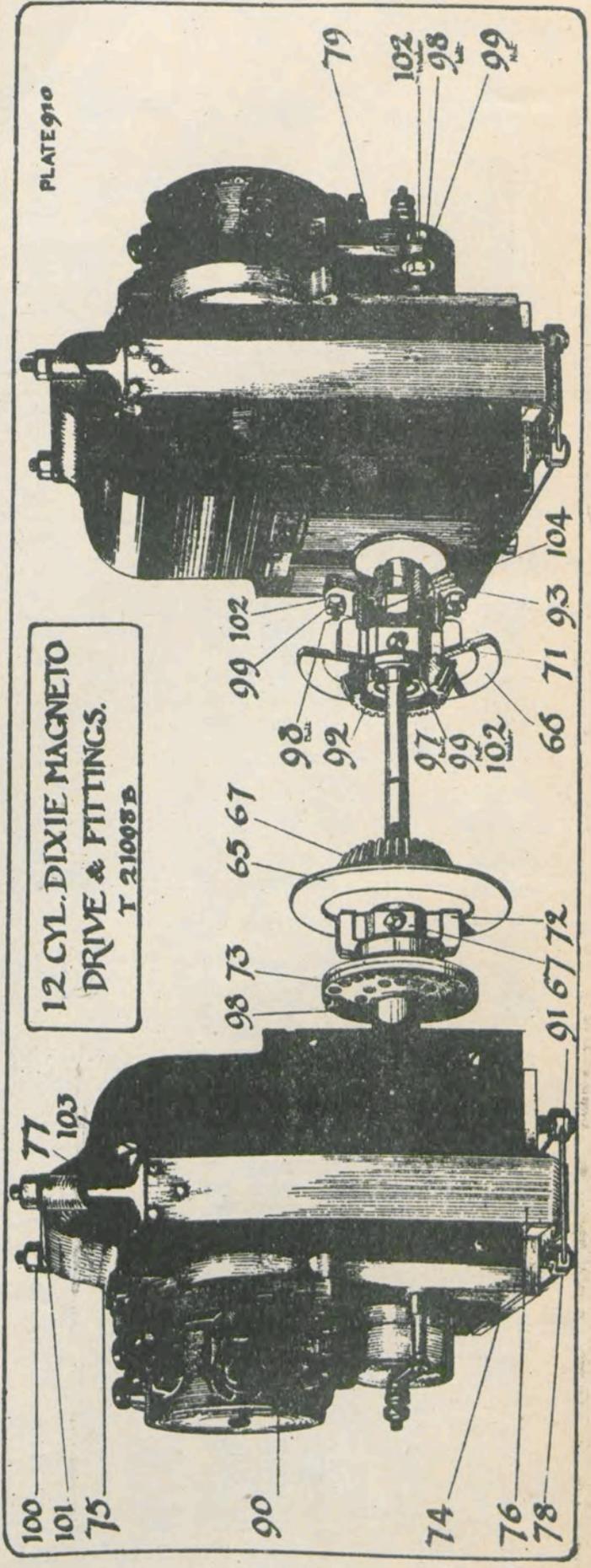
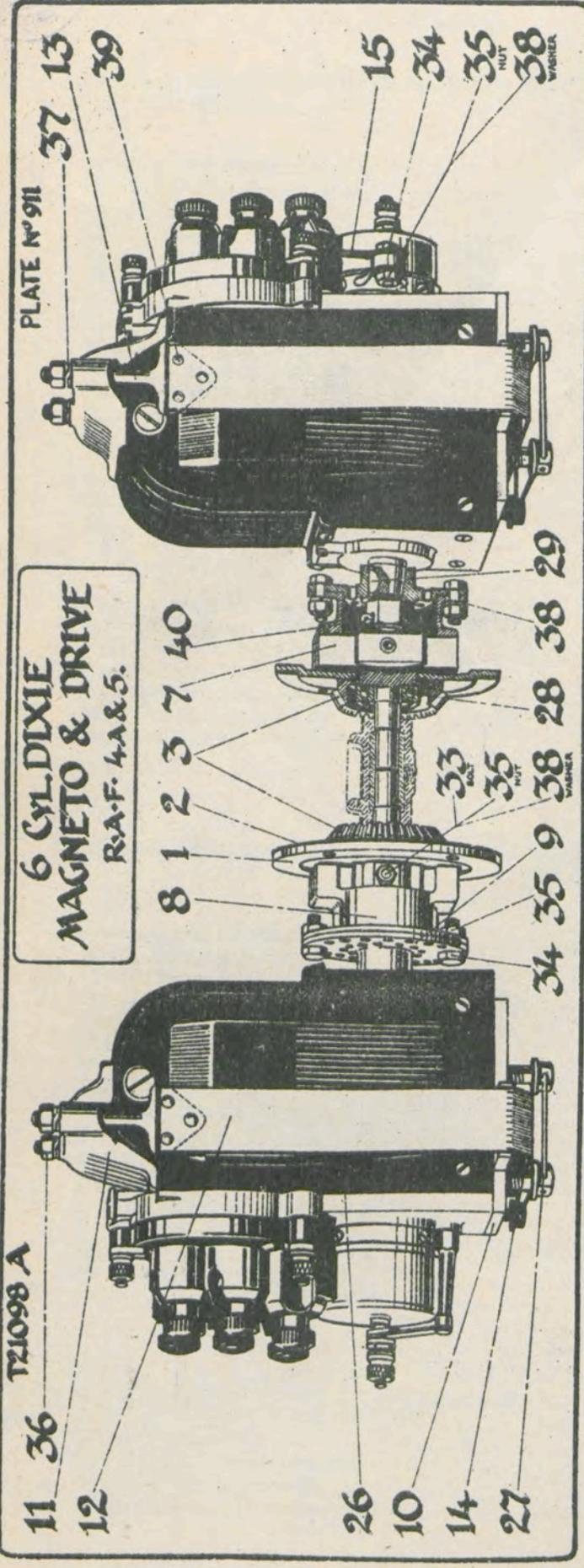
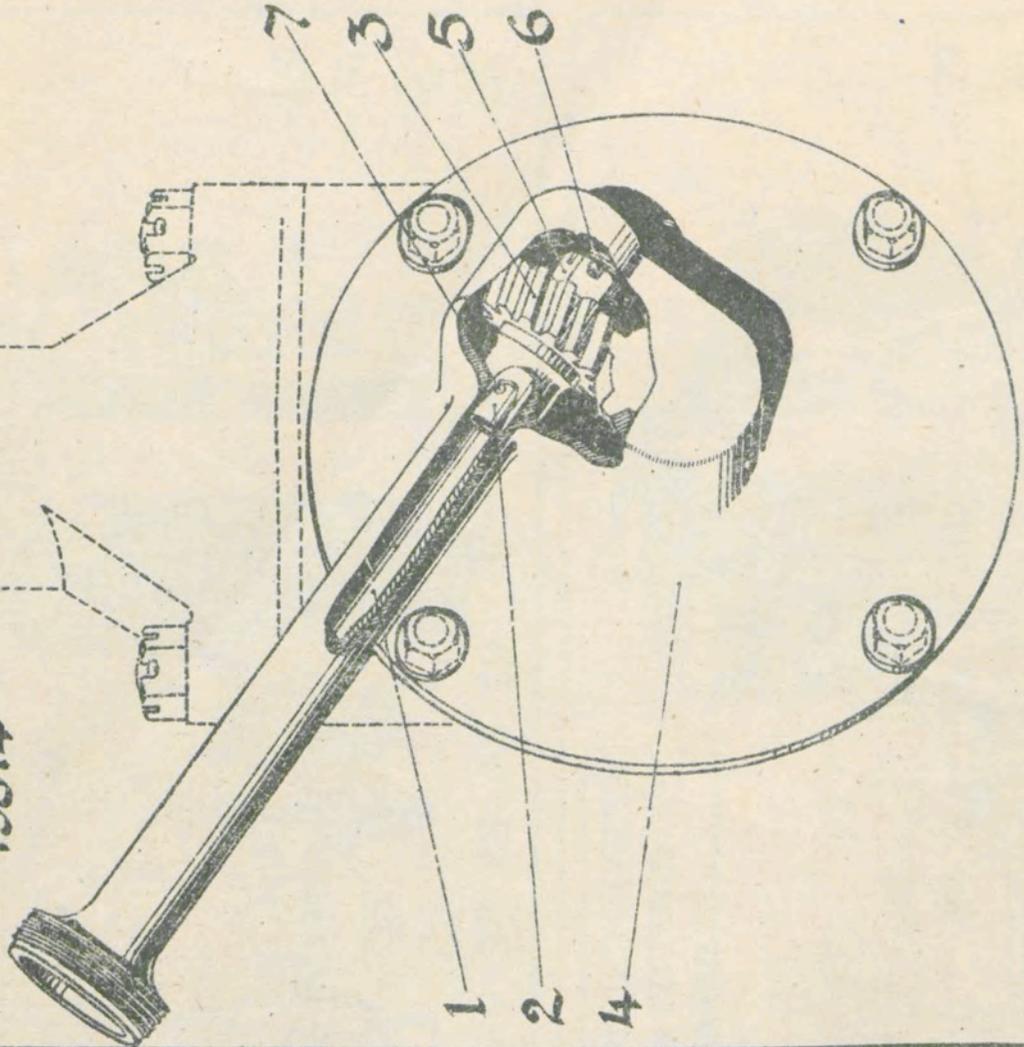




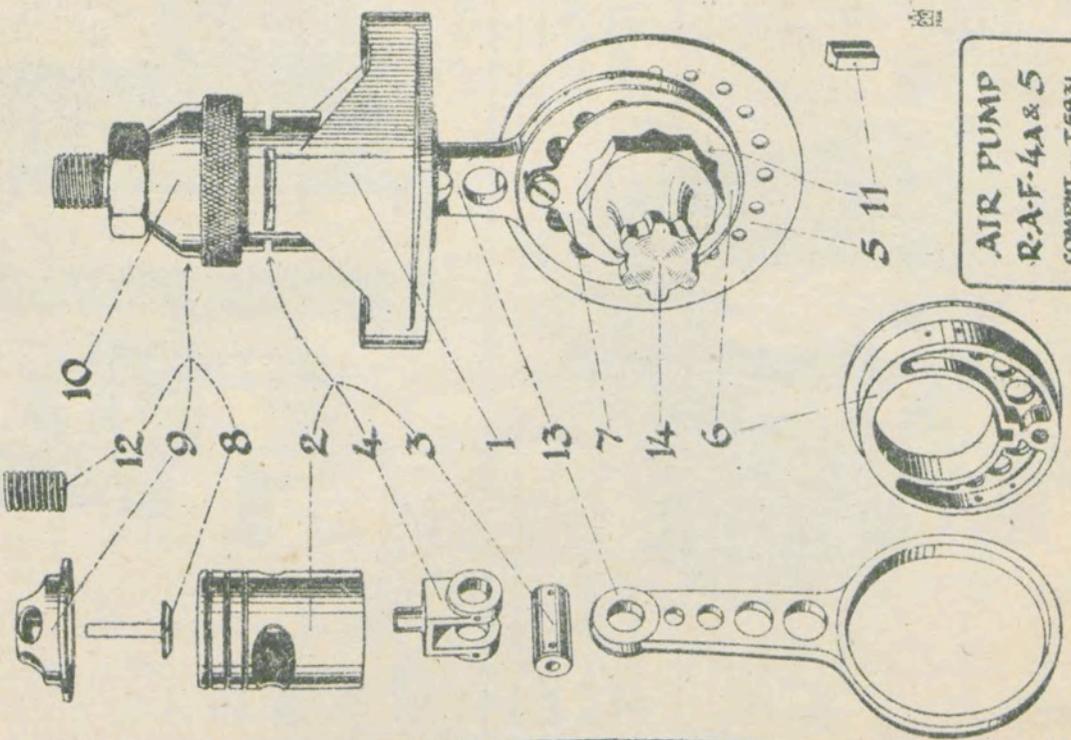
PLATE NO 749.

T58714

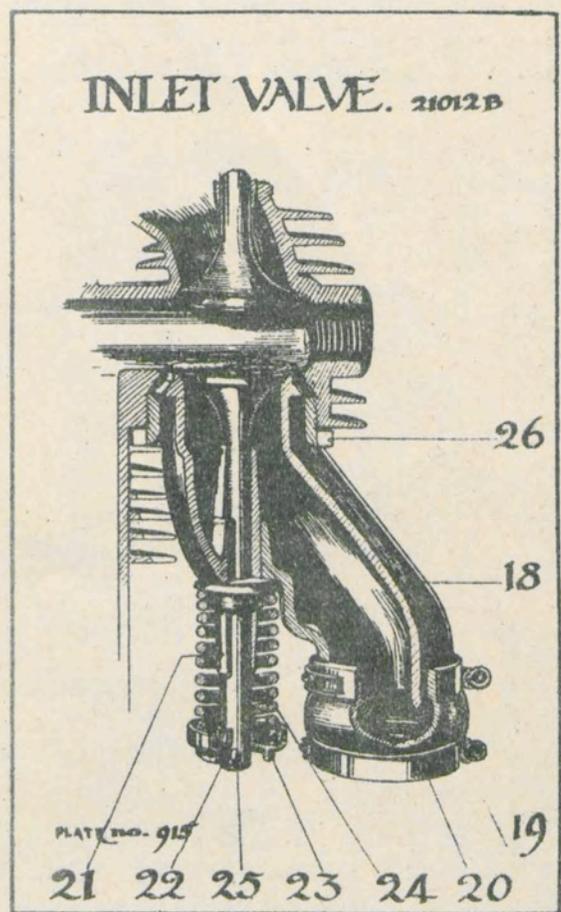
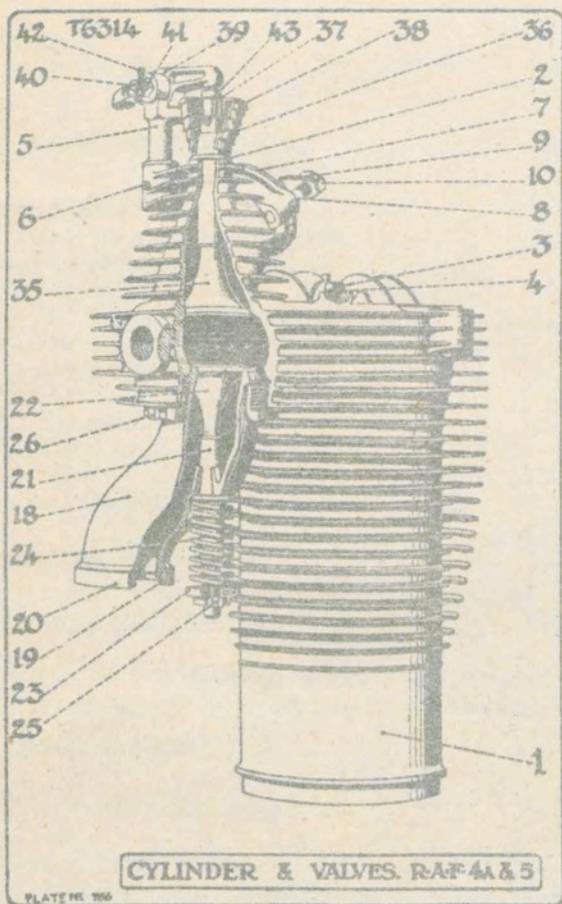


SPEEDOMETER DRIVE R·A·F·4A&5.

PLATE NO 1098



AIR PUMP  
R·A·F·4A&5  
COMPIE --- T5831





R.A.F. 4A.

## AIR PUMP, SPEEDOMETER AND CYLINDERS.

|                                   |  | Description. | Part No.   | Illustration No. | No. off.  |                |
|-----------------------------------|--|--------------|--|------------------|-----------|----------------|
| <b>Unit, AIR PUMP</b>             | ...  | ...          | Plate 1098   | ...              | T. 5831   | 1 per Engine.  |
|                                   | Body, Pump   | ...          | T. 4914-1  | 1                | 1         |                |
|                                   | Cage, Valve  | ...          | T. 4915-5  | 9                | 1         |                |
|                                   | Cap, Body  | ...          | T. 4915-6  | 10               | 1         |                |
|                                   | Fork, Gudgeon Pin  | ...          | T. 4914-5  | 4                | 1         |                |
|                                   | Key, Sheave  | ...          | T. 4890-4  | 11               | 1         |                |
|                                   | Nut, Camshaft  | ...          | T. 5731-4  | 14               | 1         |                |
|                                   | Pin, Gudgeon   | ...          | T. 4914-4  | 3                | 1         |                |
|                                   | Plunger  | ...          | T. 4914-3  | 2                | 1         |                |
|                                   | Plate, Sheave  | ...          | T. 4914-6  | 5                | 1         |                |
|                                   | Plate, Locking   | ...          | T. 4915-3  | 7                | 1         |                |
|                                   | Rod, Eccentric   | ...          | T. 9185-2  | 13               | 1         |                |
|                                   | Sheave, Eccentric  | ...          | T. 9185-1  | 6                | 1         |                |
|                                   | Spring   | ...          | T. 5172-2  | 12               | 1         |                |
|                                   | Valve  | ...          | T. 4915-4  | 8                | 1         |                |
|                                   | Pin, Split   | ...          | AGS. 166 $\frac{1}{16}$ " $\times$ $\frac{1}{4}$ "   | 15               | 2         |                |
|                                   | Setscrew   | ...          | AGS. 246 $\frac{1}{4}$ B.A. $\times$ $\frac{1}{8}$ " | —                | 1         |                |
| <b>Unit, SPEEDOMETER DRIVE</b>    | ...  | ...          | Plate 749  | ...              | T. 5874   | 1 per Engine.  |
|                                   | Gear, Speedometer  | ...          | T. 5731-3  | 3                | 1         |                |
|                                   | Housing, for speedometer drive   | ...          | T. 5731-5  | 4                | 1         |                |
|                                   | Pins, for plug, $\frac{1}{16}$ " $\times$ 11mm.  | ...          | —  | 7                | 2         |                |
|                                   | Plug, Spindle  | ...          | T. 5731-2  | 2                | 1         |                |
|                                   | Spindle, Speedometer Drive   | ...          | T. 5731-1  | 1                | 1         |                |
|                                   | *Spindle, Speedometer Drive...   | ...          | T. 8987-5  | —                | 1         |                |
|                                   | Union and Jet Plug, complete   | ...          | T. 21309-2   | —                | 1         |                |
|                                   | Nut, Slotted, for plug   | ...          | AGS. 114 B   | 5                | 1         |                |
|                                   | Nut, Lock, for Union and Jet Plug  | ...          | AGS. 207 A   | —                | 1         |                |
|                                   | Pin, Split   | ...          | AGS. 166 $\frac{1}{16}$ " $\times$ $\frac{1}{4}$ "   | 6                | 1         |                |
|                                   | Washer, Spring, for union lock nut   | ...          | AGS. 164 E   | —                | 1         |                |
|                                   | * NOTE.—This part is alternative to Spindle T. 5731-1 and Spindle Plug T. 5731-2.                                    |              |  |                  |           |                |
| <b>Unit, CYLINDERS AND VALVES</b> | ...  | ...          | Plate 756  | ...              | T. 6314   | 12 per Engine. |
|                                   | This Unit is designed to suit R.A.F. type of Induction Manifolds and should always be ordered for Engines so fitted. |              |  |                  |           |                |
| <b>Component, Cylinder</b>        | ...  | ...          | ...  | ...              | T. 4977 A | 1 per Unit.    |
|                                   | Collar, Exhaust Pipe Spigot...   | ...          | T. 3639-183  | 7                | 1         |                |
|                                   | Cylinder   | ...          | T. 3546-1  | 1                | 1         |                |
|                                   | Guide, Exhaust Valve   | ...          | T. 3577-54   | 2                | 1         |                |
|                                   | Pin, Split Taper, for rocker standard  | ...          | T. 4890-3  | 6                | 1         |                |
|                                   | Plug, Cylinder Head  | ...          | T. 4623-144  | 3                | 1         |                |
|                                   | Plate, Locking   | ...          | T. 4905-6  | 10               | 2         |                |
|                                   | Standard, Exhaust Valve Rocker   | ...          | T. 4905-4  | 5                | 1         |                |
|                                   | Washer, for cylinder head plug   | ...          | T. 4890-2  | 4                | 1         |                |
|                                   | Nut, for exhaust pipe  | ...          | AGS. 116 C   | 9                | 2         |                |
|                                   | Stud, Exhaust Pipe   | ...          | AGS. 132 D   | 8                | 2         |                |
| <b>Component, Inlet Valve</b>     | ...  | ...          | ...  | ...              | T. 6314 B | 1 per Unit.    |
|                                   | Collar, Valve  | ...          | T. 3577-53   | 23               | 1         |                |
|                                   | Cotter, Valve  | ...          | T. 3577-52   | 25               | 1         |                |
|                                   | Guide, Valve   | ...          | T. 4905-2  | 21               | 1         |                |
|                                   | Nut, Inlet Pipe  | ...          | T. 3633-3  | 26               | 1         |                |
|                                   | Ring, Jointing Washer Retaining  | ...          | T. 6457-3  | 20               | 1         |                |
|                                   | Seating, Inlet Valve   | ...          | T. 6457-1  | 18               | 1         |                |
|                                   | Spring, Valve  | ...          | T. 2210-113  | 24               | 1         |                |
|                                   | Valve  | ...          | T. 4890-1  | 22               | 1         |                |
|                                   | Washer, Inlet Jointing   | ...          | T. 6457-2  | 19               | 1         |                |

Unit continued.

## R.A.F. 4A.

## CYLINDERS AND TOOL KIT.

| Description.                             | Order No.                                  | Illustration Ref. | No. off.              |
|--|--|-------------------|-----------------------|
| <b>Unit T. 6314—continued.</b>           |  |                   |                       |
| <b>Component, Exhaust Valve</b> ... ..   | <b>T. 4977 C</b>                           |                   | <b>1 per Unit.</b>    |
| Collar, Exhaust Valve ... ..             | T. 3980-56                                 | 37                | 1                     |
| End Piece, Valve ... ..                  | T. 3980-58                                 | 43                | 1                     |
| Pin, Exhaust Valve Rocker ... ..         | T. 3577-50                                 | 40                | 1                     |
| Rocker, Exhaust Valve ... ..             | T. 3577-49                                 | 39                | 1                     |
| Spring, Valve ... ..                     | T. 3956-5                                  | 36                | 1                     |
| Valve ... ..                             | T. 4630-1                                  | 35                | 1                     |
| Washer, Valve ... ..                     | T. 3980-57                                 | 38                | 1                     |
| Nut, Exhaust Valve Rocker ... ..         | AGS. 118 A                                 | 41                | 1                     |
| Pin, Split ... ..                        | AGS. 166 $\frac{1}{16} \times \frac{3}{4}$ | 42                | 1                     |
| <b>Unit, CYLINDERS AND VALVES</b> ... .. | <b>Plate 915</b> ... ..                    | <b>T. 21012</b>   | <b>12 per Engine.</b> |

This Unit is designed to suit Daimler type of Induction Manifolds and should always be ordered for Engines so fitted.

The Unit consists of Components T. 4977 A and C as in Unit T. 6314, but Component T. 6314 B is replaced by Component T. 21012 B.

|  |                    |    |                      |
|--|--------------------|----|----------------------|
| <b>Component, Inlet Valve</b> ... ..                         | <b>T. 21012 B.</b> |    |                      |
| Clip, Induction Manifold ... ..                              | T. 21009-2         | 19 | 1                    |
| Connections, Induction Manifold ... ..                       | T. 21009-3         | 20 | 1                    |
| Collar, Valve ... ..   | T. 3577-53         | 23 | 1                    |
| Cotter, Valve ... ..   | T. 3577-52         | 25 | 1                    |
| Guide, Valve ... ..  | T. 4905-2          | 21 | 1                    |
| Nut, Inlet Pipe ... ..                                       | T. 3633-3          | 26 | 1                    |
| Seating, Inlet Valve ... ..                                  | T. 21009-1         | 18 | 1                    |
| Spring, Valve ... ..   | T. 2210-113        | 24 | 1                    |
| Valve, ... ..  | T. 4890-1          | 22 | 1                    |
| <b>Unit, TOOL KIT FOR AIR COOLED ENGINES COMPLETE</b> ... .. | <b>T. 21981</b>    |    | <b>1 per Engine.</b> |
| Box Tool ... ..  | T. 21981 C 1       | —  | 1                    |
| Card, Glazed Instruction ... ..                              | T. 21981 B 1       | —  | 1                    |
| Compressor, Exhaust Valve Spring ... ..                      | T. 21981 N         | —  | 1                    |
| Compressor, Valve Spring ... ..                              | T. 21981-O         | —  | 1                    |
| Drift, Gudgeon Pin ... ..                                    | T. 21981 W         | —  | 1                    |
| Drift, Split Bush ... ..                                     | T. 21981 U         | —  | 1                    |
| Fitter, Crankshaft Gear ... ..                               | T. 21981 A         | —  | 1                    |
| Grinder, Exhaust Valve ... ..                                | T. 21981 Q         | —  | 1                    |
| Grinder, Inlet Valve ... ..                                  | T. 21981 R         | —  | 1                    |
| Indicator, Piston Top ... ..                                 | T. 21981 D 1       | —  | 1                    |
| Remover, Camshaft Rear Bearing Outer Race ... ..             | T. 21981 E 1       | —  | 1                    |
| Remover Dog, Gear ... ..                                     | T. 21981 D         | —  | 1                    |
| Remover Dog, Magneto Drive Bevel ... ..                      | T. 21981 C         | —  | 1                    |
| Remover Dog, Roller Bearing ... ..                           | T. 21981 J         | —  | 1                    |
| Remover Dog, Roller Bearing ... ..                           | T. 21981 K         | —  | 1                    |
| Remover, Gear ... ..   | T. 21981 B         | —  | 1                    |
| Remover Link, Front Cover (R.A.F. 4 A, 4 D and 5) ... ..     | T. 21981 G         | —  | 1                    |
| Remover Link, Front Cover (R.A.F. 1 A, 1 B and 1 D) ... ..   | T. 21981 H         | —  | 1                    |
| Remover, Magneto Driving Flange ... ..                       | T. 21981 M         | —  | 1                    |
| Remover, Magneto Gear ... ..                                 | T. 21981 L         | —  | 1                    |
| Remover Strap, Gear (R.A.F. 4 D) ... ..                      | T. 21981 E         | —  | 1                    |
| Remover Strap, Gear (R.A.F. 1 A, 1 B and 1 D) ... ..         | T. 21981 F         | —  | 1                    |
| Screwdriver, for valve collar ... ..                         | T. 21981 P         | —  | 1                    |
| Spanner (Front End), Crankshaft Nut ... ..                   | T. 21981 X         | —  | 1                    |
| Spanner, (Rear End) Crankshaft Nut ... ..                    | T. 21981 Y         | —  | 1                    |
| Spanner, Inlet Tappet Adjusting ... ..                       | T. 21981 F 1       | —  | 1                    |
| Spanner, Oil Drive Ball Bearing Nut ... ..                   | T. 21981 Z         | —  | 1                    |
| Spanner, Oil Pump Driving Bevel ... ..                       | T. 21981 A 1       | —  | 1                    |
| Spanner, Cylinder Nut ... ..                                 | T. 21981 S         | —  | 1                    |
| Spanner, Cylinder Nut ... ..                                 | T. 21981 T         | —  | 1                    |





