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British Railways Board

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LIQUID LEVEL GAUGES

WORKSHOP OVERHAUL STANDARD SPECIFICATION

|  |   |            |
|--|---|------------|
|  | WORKSHOP OVERHAUL<br>SCHEDULE SPECIFICATION   |            |
|  | DIRECTOR T & RS TRAINLOAD FREIGHT<br>BRITISH RAILWAYS BOARD<br>RAILWAY TECHNICAL CENTRE<br>LONDON ROAD, DERBY DE2 8UP | WOSS 162/2 |

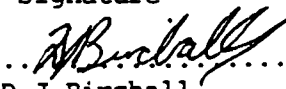


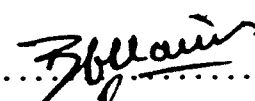
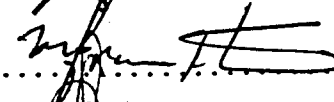
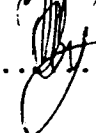
LIQUID LEVEL GAUGES  
 Bayham R & G Series

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REVISION:A

DATE: JUNE 1993

APPROVAL AND AUTHORISATION (Cont on page 2)

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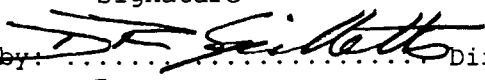

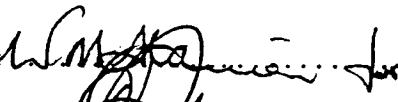

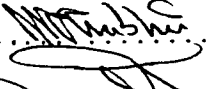
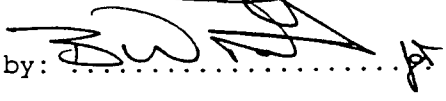
Technically acceptable, safety validated and agreed for implementation on TLF locomotives at the discretion of the TLF T & RS/Fleet Managers.

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Should you have any comments or wish to raise any technical query regarding the content of this document which may improve future revisions please contact the author on telephone BT. 0332-264047 BR 05-64047 or write to the above address.

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This Specification applies to equipment fitted to the vehicles indicated 'X' below, but it is only to be implemented when authorised by an appropriate maintenance/overhaul document.

LOCOMOTIVES

|    |   |    |   |    |   |    |   |
|----|---|----|---|----|---|----|---|
| 03 |   | 27 | X | 50 | X | 90 | X |
| 08 | X | 31 | X | 56 | X | 91 | X |
| 09 | X | 33 | X | 58 | X |    |   |
| 20 | X | 37 | X | 60 | X |    |   |
| 26 | X | 47 | X | 73 | X |    |   |

DMU's

|     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|
| 101 | X | 110 | X | 143 | X | 151 | X |
| 104 | X | 141 | X | 144 | X |     |   |
| 108 | X | 142 | X | 150 | X |     |   |

EMU's

|     |   |  |  |  |  |  |  |
|-----|---|--|--|--|--|--|--|
| 442 | X |  |  |  |  |  |  |
|-----|---|--|--|--|--|--|--|

COACHING STOCK

|                     |   |
|---------------------|---|
| Mk 3 Catering       | X |
| Mk 3 (HST) Catering | X |
| Mk 3 SLE and SLEP   | X |

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## REFERENCE DOCUMENTS

|             |   |
|-------------|---|
| WOSS 501/1  | Hot Water & Detergent Cleaning            |
| WOSS 560/4  | Crimped Joints for Cables                 |
| TDE/74/P/74 | Internal Cabling for Electronic Equipment |

## TOOLS AND MATERIALS

|  | BR Cat. No. |
|--|-------------|
| Cable, 19/0.3mm <sup>2</sup> , white insulation to TDE/74/P/74 | 006/112039  |
| Cable markers, green, marked '5'                               | 054/110675  |
| Crimp terminals, ring tongue, M3, AMP 2-320561                 | 054/119520  |
| Long-nosed pliers  |             |
| Loctite 222  | 007/060355  |
| Paint, grass green to BS381C No 218                            | 028/044240  |

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## SECTION 1 REPAIR PROCEDURE

### NOTE:

Where an item is first mentioned in the text it is followed by a number in brackets. The first part of the number, before the full stop, refers to the figure on which the item is identified. The second part of the number, after the full stop, is the number of the item as it appears on the figure. Items lists associated with figures use the full number. If an item is identified on more than one figure then the items list for each figure will give the alternative number.

### 1. Dismantling

- 1.1 Remove the screws (1.21, 2.3, 4.4), bezel (1.1, 4.11) or cover plate (2.2), bezel washer (1.2, 2.4, 4.5) and window (1.20, 2.5, 4.6).
- 1.2 Remove the pointer assembly (2.6, 4.8) comprising pointer (1.19), magnet follower (1.15) and bearings (1.17) from the needle (1.16, 2.7).
- 1.3 Remove the dial retaining ring (1.4, 2.9).
- 1.4 Remove the three dial screws (1.18) and the dial (1.5, 2.8, 4.7).
- 1.5 Remove the two screws (1.11) and the bracket (1.7) complete with gear and float assembly.

### 2. Cleaning, Examination and Repair

- 2.1 Clean all components in accordance with WOSS 501/1. Alternatively solvent may be used.
- 2.2 Renew any damaged or missing items.
- 2.3 Renew the float arm split pin if fractured or missing.
- 2.4 Renew the gear assembly if it is worn or does not operate freely. Ensure that the gear is firmly secured to the spindle by the split pin and allen screw.
- 2.5 Renew the float arm assembly if the magnet is fractured or loose.
- 2.6 Immerse the float in clean fuel oil (3") or water (6") for 2 hours. Renew the float arm assembly if the float absorbs fuel.
- 2.7 Renew the pointer assembly if the bearing (1.17) is visibly worn.
- 2.8 Renew the dial if the markings are illegible.
- 2.9 Discard the body (1.3, 2.1) if the bush (1.9, 2.10) or needle (1.16, 2.7) are visibly worn or damaged.
- 2.10 M32 Units: disconnect and discard the microswitches (4.3). Discard any defective wiring.

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### 3. Reassembly

- 3.1 Renew all spring and shakeproof washers and split pins which have been disturbed. Use new items for those discarded.
- 3.2 Fit the bracket complete with gear and float assembly. Check that the upper and lower float arm limit stops (1.6) operate. Adjust if defective. Ensure that the locknuts are tight.
- 3.3 Fit the dial and the dial screws or retaining strip.
- 3.4 Fit the seating ring.
- 3.5 Fit the pointer assembly.
- 3.6 M32 Units: fit the microswitches and set up in accordance with A.P.1.
- 3.7 Operate the float arm and check that the pointer or magnet follower do not foul the dial or the body. Ensure that there is no sluggishness of operation of the pointer. Rectify if defective.
- 3.8 M32 Units: paint the bezel green, and allow to dry before refitting.
- 3.9 Polish and fit the window. Fit the bezel washer, bezel and bezel screws.
- 3.10 M32 Units: measure the insulation resistance between each terminal and frame using a 1000V megger. Minimum acceptable reading 20M $\Omega$
- 3.11 Test in accordance with Section 2.



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Items List for Figure 1

| Item | Description                        | Bayham Part No. | BR Cat. No. |
|------|------------------------------------|-----------------|-------------|
| 1.1  | Bezel:                             |                 |             |
|      | 3"                                 | D1003/2         | 051/000548  |
|      | 4"                                 | D4493           | 061/004774  |
|      | 6" brass                           | D1061           | 051/000538  |
|      | 6" plastic                         | D1061P          | 051/008816  |
| 1.2  | Bezel washer:                      |                 |             |
|      | 3"                                 | D1006           | 051/014994  |
|      | 4"                                 | D4493/6         | 061/004772  |
|      | 6"                                 | D1062           | 051/014996  |
| 1.3  | Body                               |                 | See Table 2 |
| 1.4  | Window seating ring:               |                 | See Table 2 |
|      | 3"                                 | D1256           | 051/015552  |
|      | 6"                                 | D1184           | 051/013700  |
|      | 56                                 | D1591           | 061/038150  |
| 1.5  | Dial                               |                 | See Table 2 |
| 1.6  | Float arm limit stop               |                 |             |
|      | Locknut                            |                 |             |
| 1.8  | Magnet                             |                 |             |
| 1.9  | Bush                               |                 |             |
| 1.10 | Spindle                            |                 |             |
| 1.11 | Screw M5 x 12 csk                  |                 |             |
| 1.12 | Gear assembly                      |                 |             |
| 1.13 | Drive spindle                      |                 |             |
| 1.14 | Tank seating washer                |                 | See Table 2 |
| 1.15 | Magnet follower                    |                 |             |
| 1.16 | Needle                             |                 |             |
| 1.17 | Bearing                            |                 |             |
| 1.18 | Screw PKZ No. 2 1/4" 6"            |                 | 035/055589  |
|      | Dial retaining strip 3"            | D1014           | 051/013780  |
|      | Dial retaining strip 6"            | D1066           | 051/013694  |
| 1.19 | Pointer                            |                 | See Table 2 |
| 1.20 | Window 3"                          | D1005/2/C       | 017/008668  |
|      | Window 4"                          | D4493/3         | 061/030510  |
|      | Window 6"                          | D1064           | 051/005264  |
|      | Window 56                          | D1064           | 017/008668  |
| 1.21 | Screw M4 x 5 pan                   |                 | 035/104936  |
|      | Screw 2BA x 1/2" csk rsd           |                 | 035/055589  |
|      | Screw 4BA x 7/16" csk 56           |                 | 035/017490  |
|      | Screw 1BA x 1/2 skt cap 33 pre '82 |                 | 035/056433  |

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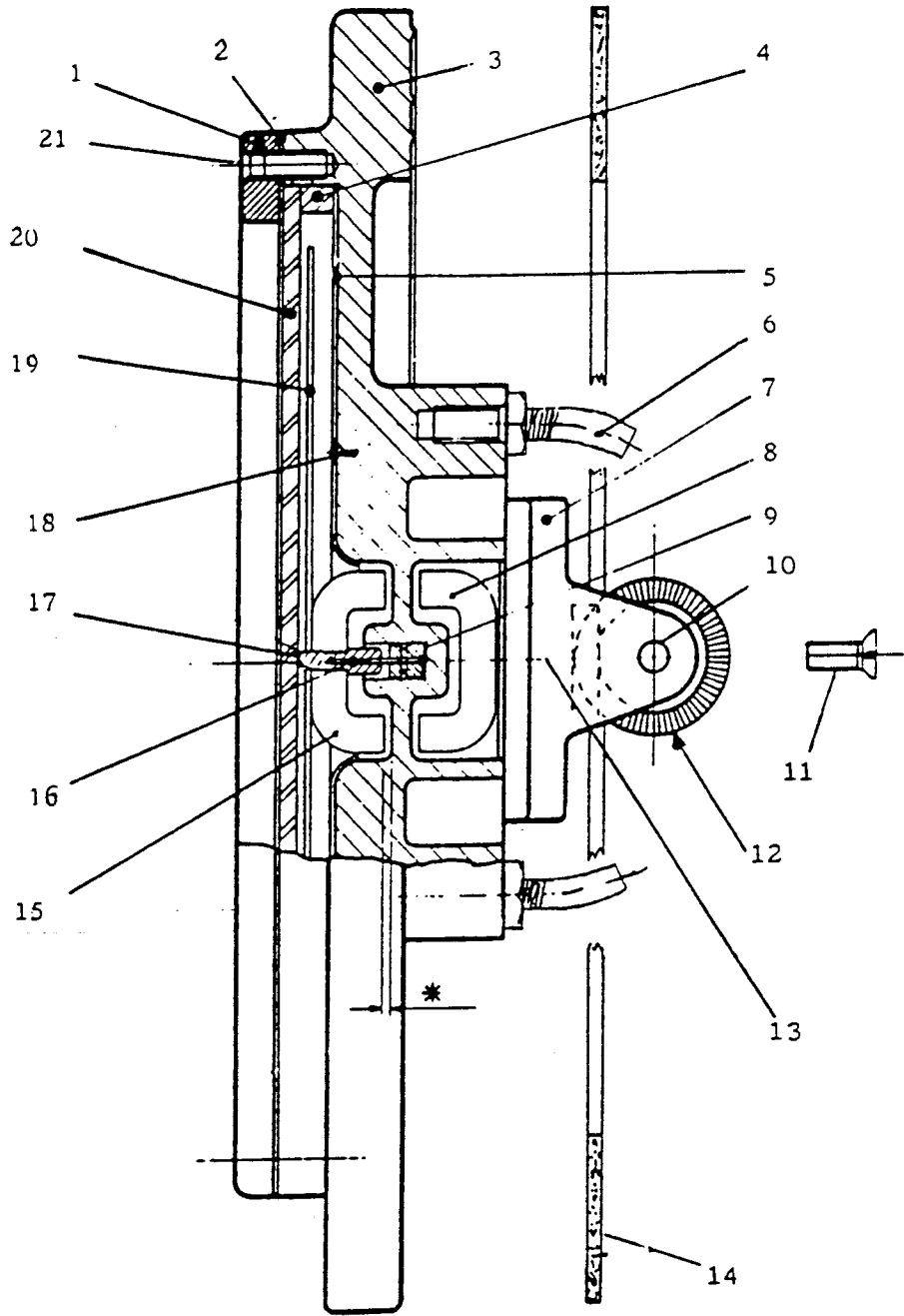


Figure 1. Typical Gauge Unit

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Items List for Figure 2

| Item | Description                              | Bayham Part No.      | BR Cat. No. |
|------|--|----------------------|-------------|
| 2.1  | Body with centre bush                    | See Data Sheet       |             |
| 2.2  | Cover plate                              | A3 AN5 D103          | 051/016298  |
| 2.3  | Screw M5 x 12 pan brass<br>Washer M5 enp |                      | 035/025242  |
| 2.4  | Sealing washer                           | A3 AN5 D104          | 051/016299  |
| 2.5  | Window                                   | A4 GL 103            | 051/016300  |
| 2.6  | Pointer assembly<br>Pointer              | D103/15<br>A4 PC 102 | 017/017768  |
| 2.7  | Needle                                   | A4 PC 101            |             |
| 2.8  | Dial                                     | See Data Sheet       |             |
| 2.9  | Dial retaining ring                      | A3 AN5 D102          | 051/016301  |
| 2.10 | Needle bush                              | A4 PC 100            |             |
| 2.11 | Tank seating washer                      | D2490                | 051/015018  |

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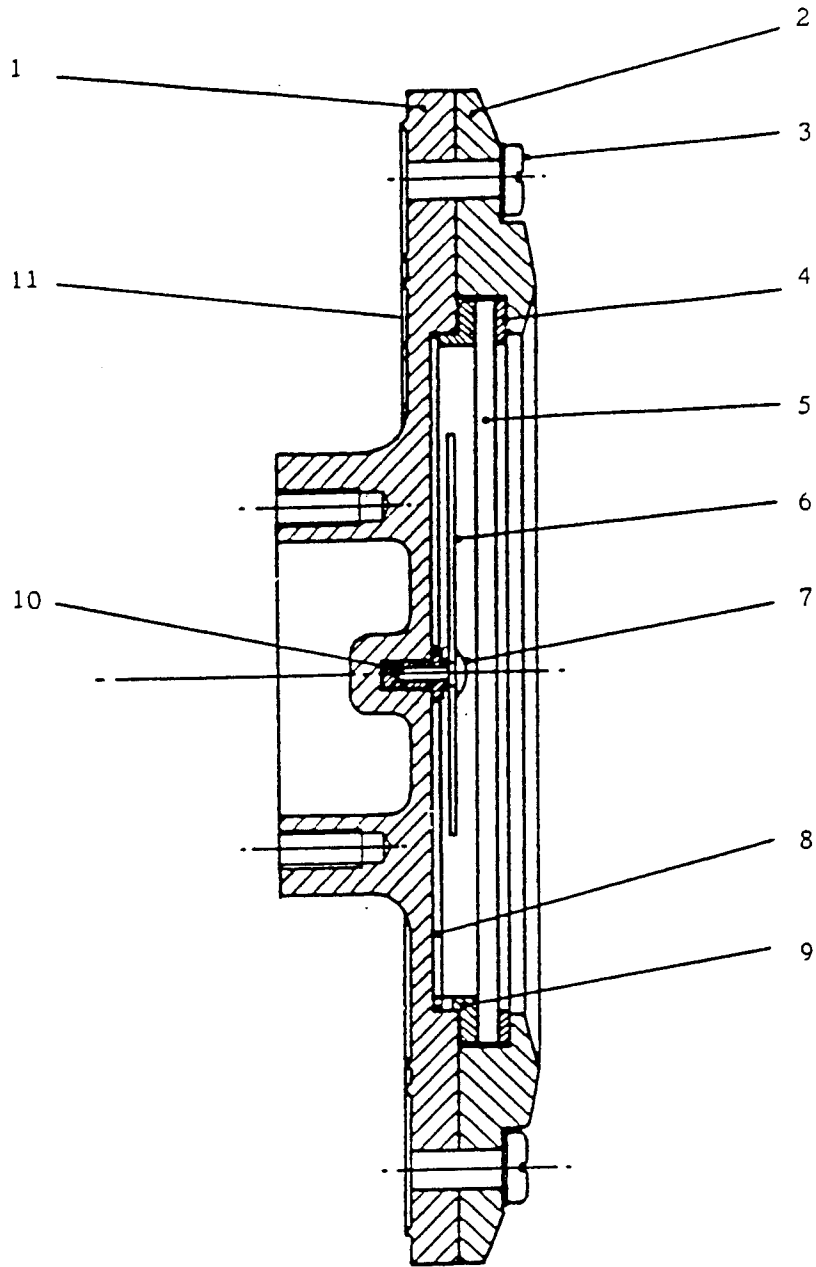


Figure 2. DR90 Gauge

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Items List for Figure 3

| Item | Description                      | Bayham Part No. | BR Cat. No. |
|------|----------------------------------|-----------------|-------------|
| 3.1  | Front unit, less float mechanism | 50134/TU        | 064/003678  |
|      | Cover                            | D3167           | 064/001774  |
|      | Cover washer                     | D3445           | 064/001775  |
| 3.2  | Potentiometer                    | AN113           | 064/001785  |
| 3.3  | Mills Pin                        |                 |             |
| 3.4  | Body                             | D1003/GM/B11    | 064/001776  |
| 3.5  | Float                            | D2747           | 064/002707  |
| 3.6  | Gear Drive                       |                 |             |
| 3.7  | Gear and float arm assembly      |                 |             |
|      | TU                               | 35869/FAA       | 064/001777  |
|      | B11                              | 50134/FAA       | 064/003677  |
| 3.8  | 2BA Nut                          |                 |             |
| 3.9  | Grub Screw                       |                 |             |

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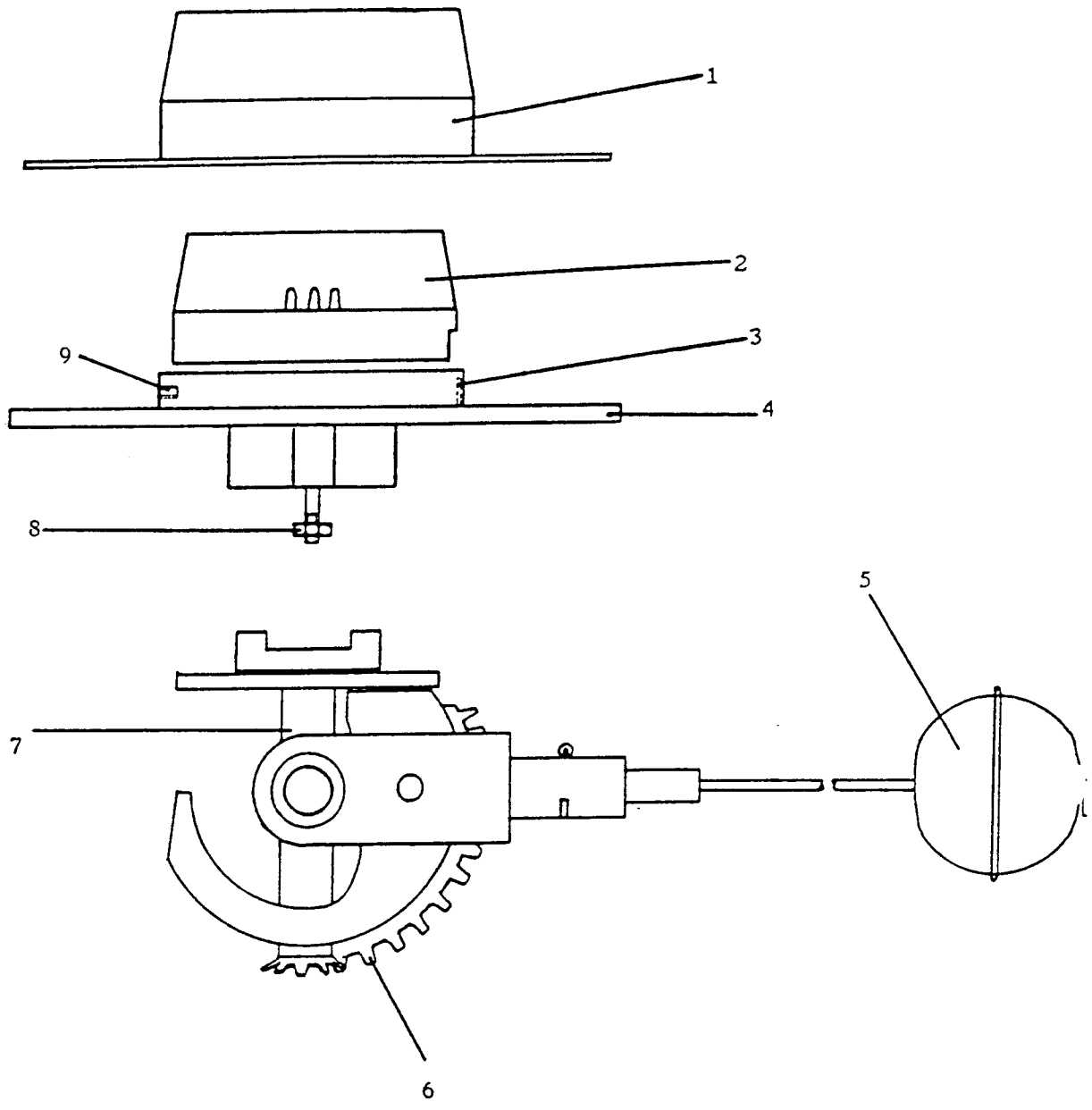


Figure 3. Tank Transmitting Unit

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Items List for Figure 4

| Item | Description   | Bayham Part No.      | BR Cat. No.              |
|------|---|----------------------|--------------------------|
| 4.1  | Screw, M3 x 30, Hex Hd, brass<br>M3 Shakeproof washer, M3 Nut |                      |                          |
| 4.2  | Cable   |                      |                          |
| 4.3  | Microswitch   | MT4RV                | 072/005269               |
| 4.4  | Screw M6 x 15 hex. brass, cad. pltd                           |                      |                          |
| 4.5  | Bezel washer  | D1256                | 051/015552               |
| 4.6  | Window  | D1005/LEX            | 017/008668               |
| 4.7  | Dial  | 47585/M32DL          | 072/005271               |
| 4.8  | Pointer assembly  | D2838                | 072/005268               |
| 4.9  | Dial retaining strip  | D1014                | 051/013780               |
| 4.10 | Front cover   |                      |                          |
| 4.11 | Bezel, brass<br>Bezel washer                                  | D1003/2BR<br>D1006/1 | 072/005267<br>051/014994 |
| 4.12 | Washer (dial case to body)                                    | D3440                | 072/005270               |
| 4.13 | Truss head screw, 2BA x 3/8"                                  |                      |                          |
| 4.14 | Terminal box lid  |                      |                          |
| 4.15 | Gasket  |                      |                          |
| 4.16 | Terminal block  |                      |                          |
| 4.17 | Terminal box<br>Junction box with terminals                   | A4D1960/3MOD         |                          |
| 4.18 | Retaining nut, 3/8" ET x 16 TPI                               |                      |                          |
| 4.19 | Conduit entry plug  |                      |                          |
| 4.20 | Screw, M3 x 25, Hex Hd, brass<br>Shakeproof Washer M3, Nut M3 |                      |                          |
| 4.21 | Magnet and shaft assembly                                     |                      |                          |
| 4.22 | Nut, 2BA  |                      |                          |

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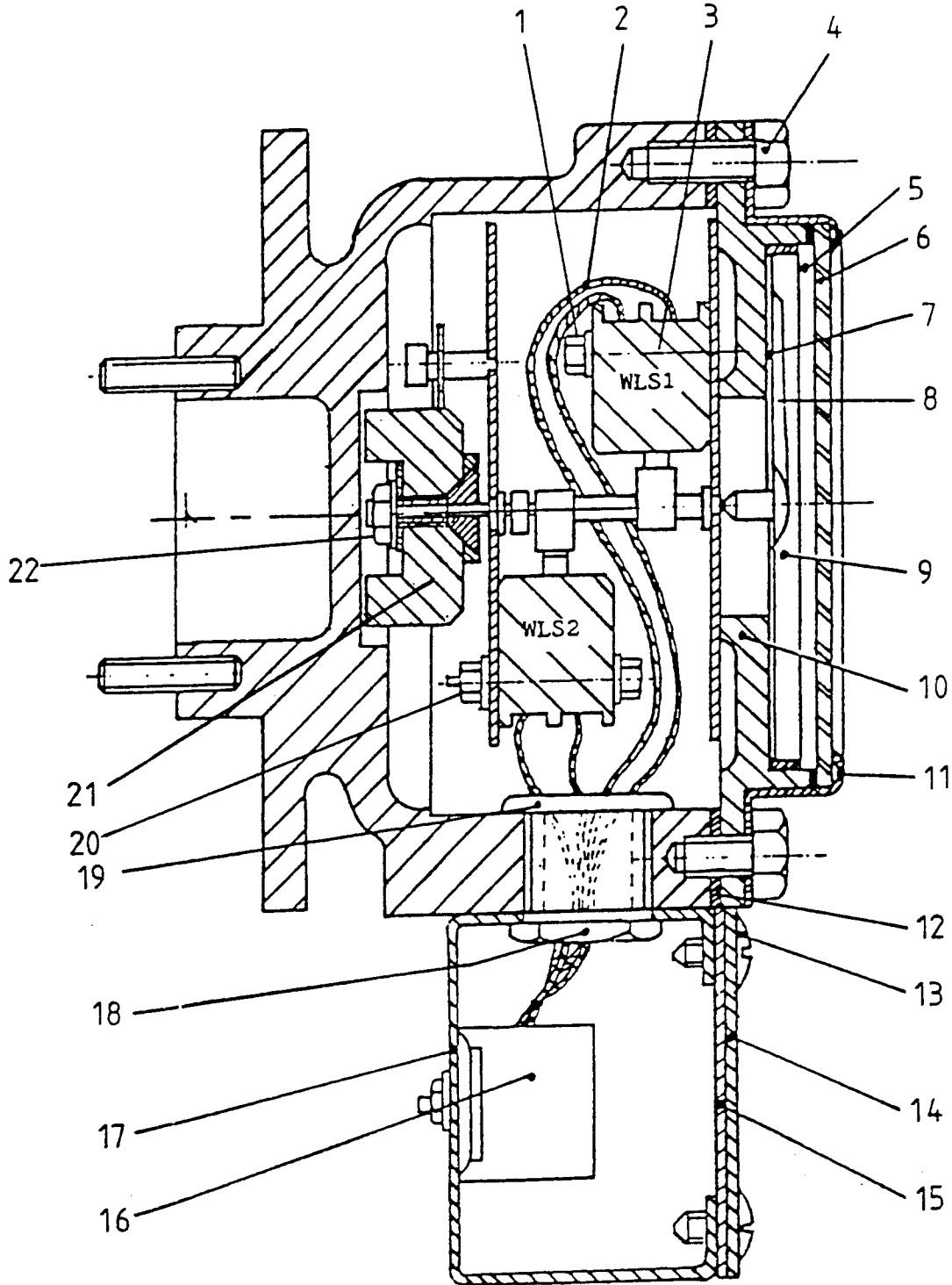


Figure 4. M32 Unit



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## SECTION 2 TEST SPECIFICATION

### Equipment

Test Rig (Figure 5)  
Continuity tester (for units with microswitches).

If any of the following tests do not give the indicated result, investigate and rectify the defect and repeat the test.

1. Fit the gauge to the test rig with the datum point of the calibration board coincident with the float spindle (1.10).

### NOTE:

The following tests are made with reference to the relevant Data sheet in Table 3.

2. Set the float arm to the empty position and check that the gauge reads Empty. Adjust lower stop/gear mesh if reading incorrect, and tighten locknuts.
3. Move the float arm up to the upper limit stop and check that the arm is in the full position and the gauge reads Full. Adjust upper stop/gear mesh if reading incorrect, and tighten locknuts.
4. Check the gauge with the float arm in any intermediate positions given in Table 3.
5. Remove the gauge from the test rig.

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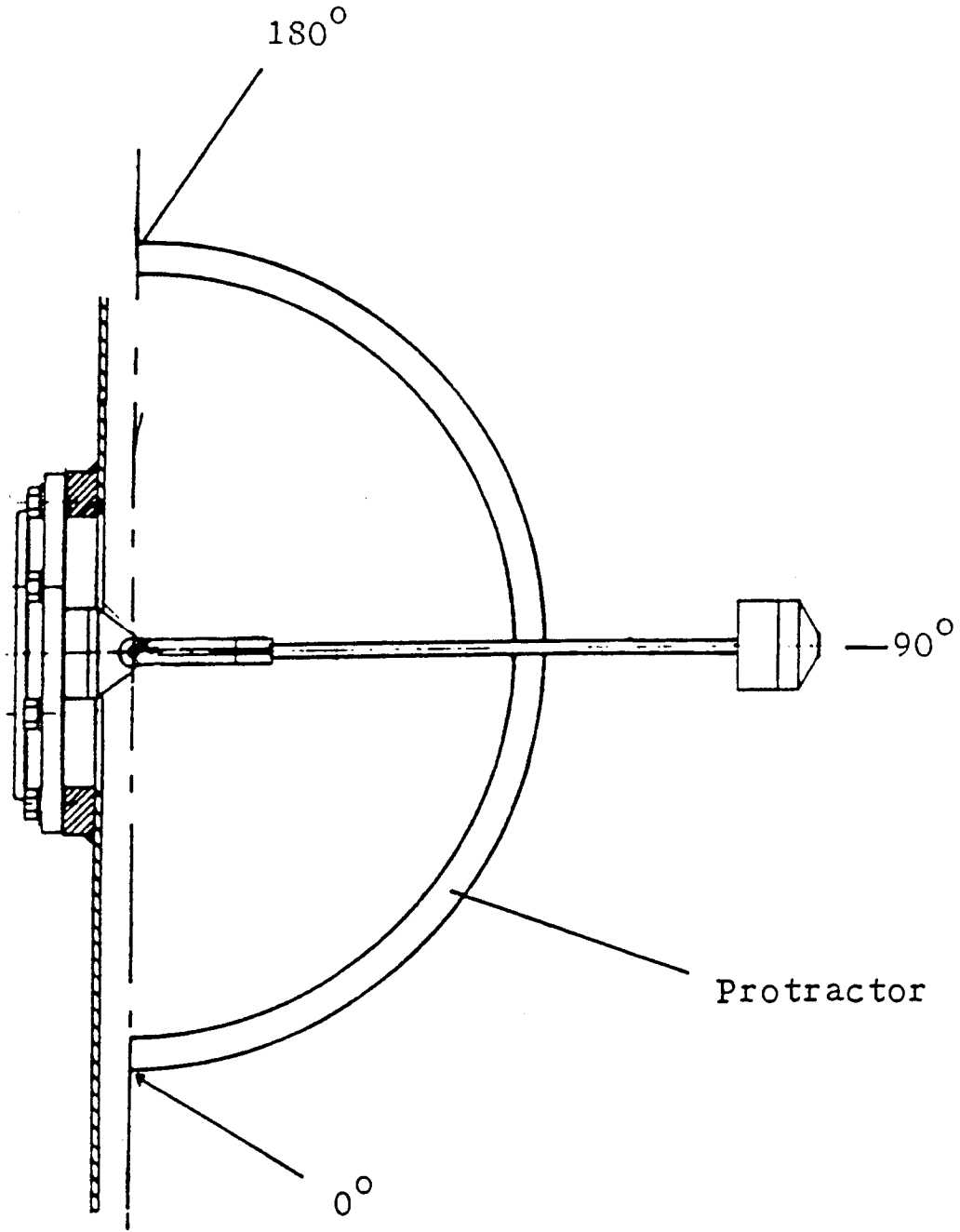


Figure 5. Test Rig

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SECTION 3 TECHNICAL DATA

Table 1 Vehicle Classes Gauge Types and Functions

| Class    | Function      | Type               | Bayham Part No.      | BR Cat. No. | Data Sheet |
|----------|---------------|--------------------|----------------------|-------------|------------|
| 08<br>09 | Fuel: 83 gal  | 3" v               | FM 7763/2823         | 017/008150  | 1          |
|          | Fuel: 585 gal | 6"                 | FM 7762/1860         | 017/008155  | 2          |
| 20       | Fuel          | 56<br>original     | FM 24953             | 051/004992  |            |
|          |               | DR90<br>since 1982 | FM 24953/90          | 051/016296  | 3          |
|          | Water header  | 3" v               | FM 24954/<br>2194/BB | 051/005044  | 4          |
| 26/1     | Main fuel     | 4"<br>original     | FM 27050             | 061/037758  |            |
|          |               | DR90<br>since 1982 | FM 27050/90          | 061/041970  | 5          |
|          | Coolant       | 56<br>original     | FM 27098/BB          | 061/037764  |            |
|          |               | DR90<br>since 1982 | FM 27098/90          | 061/041979  | 6          |
| 26/2     | Main fuel     | 4"<br>original     | D4493/1/637          | 061/035152  |            |
|          |               | DR90<br>since 1982 | FM 27300/90          | 061/041984  | 7          |
|          | Coolant       | 56<br>original     | FM 27098/BB          | 061/037764  |            |
|          |               | DR90<br>since 1982 | FM 27098/90          | 061/041979  | 8          |
| 31       | Fuel          | 3" v               | 9824/FM              | 051/044203  | 9          |

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|  | WORKSHOP OVERHAUL SCHEDULE SPECIFICATION   | No WOSS 162/2<br>Issue 3<br>Revision A |
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Table 1 (Continued)

| Class        | Function                     | Type               | Bayham Part No.     | BR Cat. No. | Data Sheet |
|--------------|------------------------------|--------------------|---------------------|-------------|------------|
| 33           | Fuel                         | 4"<br>original     | FM 34410            | 061/033915  |            |
|              |                              | DR90<br>since 1982 | FM 34110/90         | 061/041999  | 10         |
|              | Radiator Water               | 56<br>original     | FM 34411/BB         | 061/000611  |            |
|              |                              | DR90<br>since 1982 | FM 34411/90         | 061/042002  | 11         |
| 37           | Fuel                         | 6"                 | FM 51335            | 051/002750  | 12         |
|              | Water                        | 6"                 | FM 50340/BB         | 051/003321  | 13         |
| 43           | Fuel                         | 6"                 | 33932/FM            | 072/000257  | 14         |
| 47           | Coolant                      | 3" V               | FM 52198            | 061/035165  | 17         |
|              | Fuel 2                       | 3" V               | 36842/FM            | 061/040958  | 15         |
| 47/0<br>47/3 | Fuel 4                       | 3" V               | A4APP 199           |             | 18         |
| 47/4         | Fuel (500 gal<br>underslung) | 6"                 | 34771/FM            |             | 16         |
|              | Fuel (530 gal<br>underslung) | 6"                 | L-A0-3636           | 061/040481  | 19         |
| 47/7         | Fuel 530 gal<br>underslung)  | 6"                 | L-A0-3636           | 061/040481  | 19         |
| 50           | Radiator Water<br>Header     | 4"<br>original     | 7953/16253<br>FM/BB | 051/085682  |            |
|              |                              | DR90<br>since 1982 | 16253/FM/90         | 051/087106  | 20         |
| 56           | Coolant                      | 3"                 | 54954/FM            | 072/007585  | 21         |
| 58           | Coolant                      | M32                | 47585/M32           | 072/005266  | 22         |
|              | Fuel                         | DR90               | 48575/FM            | 072/005441  | 23         |

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|  | WORKSHOP OVERHAUL SCHEDULE SPECIFICATION   | No WOSS 162/2<br>Issue 3<br>Revision A |
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Table 1 (Continued)

| Class                                     | Function       | Type            | Bayham Part No. | BR Cat. No. | Data Sheet |
|---|----------------|-----------------|-----------------|-------------|------------|
| 60  | Coolant        | 3" V            | 64323FM         | 072/008377  | 24         |
|   | Fuel           | DR90            | 64355/FM/90     | 072/008553  | 25         |
| 73  | Radiator Water | 56 original     | FM 24953        | 051/004992  |            |
|   |                | DR90 since 1982 | 5877/FM         | 083/001823  | 26         |
| 90  | Refrigerant    |                 |                 |             |            |
| 91  | Refrigerant    |                 |                 |             |            |
| 101                                       | Fuel           | 3" V            | 30579A/FM       | 014/001515  | 27         |
| 104                                       | Fuel           | 3" V            | 34140           | 014/096626  | 28         |
| 108                                       | Fuel           | 3" V            | 14036/FM        | 014/001296  | 29         |
| 110                                       | Fuel           | 3" V            | FM 23585        | 014/096592  | 30         |
| 141-2                                     | Fuel           | DR90            | 65850FM         | 015/004838  | 31         |
| 143                                       | Fuel           | DR90            | 56061/FM        | 015/082740  | 32         |
| 144                                       | Fuel           | DR90            | 53073/FM        | 015/081475  | 33         |
| 150                                       | Fuel           | DR90            | 52731/FM        | 015/078000  | 34         |
| 151                                       | Fuel           | DR90            | 56096/FM        | 015/078210  | 35         |
| 442                                       | Buffet Water   | TU              | 61653/2/SP      | 098/009133  | 36         |
| RF<br>TRF<br>TRBF<br>TRFB<br>TRFK<br>TRSB | Drinking Water | TU              | 35869/TU        | 064/000934  | 36         |
| SLE<br>SLEP                               | Drinking Water | B11             | 50134/TU        | 064/003670  | 37         |

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|  | WORKSHOP OVERHAUL SCHEDULE SPECIFICATION   | No WOSS 162/2<br>Issue 3<br>Revision A |
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Table 2 Data Sheets

1. Data Sheet for FM 7763/2823

BR Cat. No. 017/008150

Class 08, 09

Function Fuel: 83 gallons

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D100/3M         | 061/037206  |
| 1.5  | Dial 3"                     | FM 7763/D       | 017/006810  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer                     | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | FM 7763/FAA     | 017/000388  |
|      | Float                       | D1488/1         | 061/037206  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 49 - 51°     | Empty         |
| 89 - 91°     | 46.4          |
| 131 - 133°   | Full          |

2. Data Sheet for FM 7762/1860

BR Cat. No. 017/008155

Class 08, 09

Function Fuel: 585 gallons

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1175/2         | 051/008817  |
| 1.5  | Dial 6"                     | FM 7762/D       | 017/000684  |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer                     | D1422/A6        | 017/000387  |
|      | Gear and Float Arm Assembly | FM 7762/FAA     | 017/000386  |
|      | Float                       | D1422/A6        | 061/000387  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 33 - 35°     | Empty         |
| 135 - 137°   | Full          |

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3. Data Sheet for FM 24953/90

BR Cat. No. 051/016296

Class 20

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Gauge Front Unit Complete   | FM 24953/90FT   | 051/016297  |
|      | Body                        | D100/A/PC100    | 051/016302  |
| 2.6  | Pointer, Red                | D.1013/15       | 017/017768  |
| 2.8  | Dial 6"                     | FM 24953/90DL   | 051/016303  |
| 2.11 | Tank Washer                 | D2429           | 002/126700  |
|      | Gear and Float Arm Assembly | FM 24953/FAA    | 051/008318  |
|      | Float                       | D.1422/A4       | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 53 - 57°     | Empty         |
| 103 - 107°   | Full          |

4. Data Sheet for FM 24953

BR Cat. No. 051/004992

Class 20

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Gauge Front Unit Complete   | FM 24953/FT     | 051/014800  |
|      | Body                        | D1587/J         | 051/014078  |
| 1.5  | Dial 6"                     | FM 24953/D      | 051/001957  |
| 1.14 | Tank Washer                 | D2490           | 002/126700  |
| 1.19 | Pointer, Red                | D.1013/15       | 017/017768  |
|      | Gear and Float Arm Assembly | FM 24953/FAA    | 051/008318  |
|      | Float                       | D. 1422/A4      | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 53 - 57°     | Empty         |
| 103 - 107°   | Full          |

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5. Data Sheet for FM 24954/2194/BB

BR Cat. No. 051/005044

Class 20

Function Water Header

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Front Unit Complete         | FM 24954/90FT   | 051/014801  |
|      | Body, Brass                 | D.1000/3/GM     | 051/008887  |
| 1.5  | Dial 3"                     | D.1341          | 014/000425  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D.1013/15       | 017/011768  |
|      | Gear and Float Arm Assembly | FM 24954/FAA    | 051/008322  |
|      | Float                       | D.1488/1        | 061/037206  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 43 - 47°     | Empty         |
| 133 - 137°   | Full          |

6. Data Sheet for FM 27050/90

BR Cat. No. 061/041970

Class 26/1

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | FM 24953/90FT   | 051/016297  |
|      | Body                        | D.100/A/PC100   | 051/016302  |
| 2.6  | Pointer, Red                | D.1013/15       | 017/017768  |
| 2.8  | Dial                        | D.1341          | 014/000425  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | FM 27050/90DL   | 061/041972  |
|      | Float                       | D. 1054/1/4     | 061/004766  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 72 - 76°     | Empty         |
| 161 - 166°   | Full          |



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7. Data Sheet for FM 27098/90

BR Cat. No. 061/041979

Class 26/1 & 26/2

Function Coolant

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Gauge Complete   | FM 27098/90FT   | 061/041982  |
|      | Body, Brass                 | D.100/B/PC100   | 061/042009  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial 3"                     | FM27098/90DL    | 061/041983  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | FM 27098/FAA    | 061/039095  |
|      | Float                       | D.1422/A4       | 061/041154  |

| Float Position | Gauge Reading |
|----------------|---------------|
| 31 - 35°       | Empty         |
| 117 - 121°     | Full          |

8. Data Sheet for FM 27300/90

BR Cat. No. 061/041984

Class 26/2

Function Main Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Gauge Complete   | FM 27300/90FT   | 061/041985  |
|      | Body, Brass                 | D.100/A/PC100   | 051/016302  |
| 2.6  | Pointer, Red                | D.1013/15       | 017/017768  |
| 2.8  | Dial                        | FM 27300/90DL   | 061/041986  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | FM 27300/FAA    | 061/039097  |
|      | Float                       | D. 1054/1/4     | 061/004766  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 71 - 76°     | Empty         |
| 162 - 166°   | Full          |

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9. Data Sheet for 9824/FM

BR Cat. No. 051/044203

Class 31

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D.1000/30H      | 051/040545  |
| 1.5  | Dial                        | FM34111C/D      | 051/040548  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | 9824/FM/FAA     | 051/040546  |
|      | Float                       | D.1007/1        | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 33 - 36°     | Empty         |
| 153 - 156°   | Full          |

10. Data Sheet for FM 34410/90

BR Cat. No. 061/041999

Class 33

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
|      | Front Unit Complete         | FM 34410/90FT   | 061/042000  |
| 1.3  | Body                        | D.10/A/PC100    | 051/016302  |
| 1.5  | Dial                        | FM 34410/90DL   | 061/042001  |
| 1.14 | Tank Washer                 | D2490           | 002/126700  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | FM 34410/FAA    | 061/039129  |
|      | Float                       | D. 1054/1/44    | 061/004766  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 28 - 32°     | Empty         |
| 158 - 162°   | Full          |

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11. Data Sheet for FM34411/90

BR Cat. No. 061/042002

Class 33

Function Water

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | FM34411/90FT    | 061/042003  |
|      | Body                        | D100/B/PC100    | 061/042009  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | FM34411/90DL    | 061/042004  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | FM34411/FAA     | 061/034148  |
|      | Float                       | D1422/A4        | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 28 - 32°     | Empty         |
| 158 - 162°   | Full          |

12. Data Sheet for FM 51335

BR Cat. No. 051/002750

Class 37

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1175/2         | 051/008817  |
| 1.5  | Dial                        | FM 36236/D      | 051/004127  |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer, Red                | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | FM 51335/FAA    | 051/008833  |
|      | Float                       | D1422/A4        | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 32 - 36°     | Empty         |
| 139 - 143°   | Full          |

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13. Data Sheet for FM50340/BB

BR Cat. No. 051/003321

Class 37

Function Water

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1175/2/GM      | 051/008888  |
| 1.5  | Dial                        | FM36237/D       | 051/004125  |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer, Red                | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | FM50340/FAA     | 051/008834  |
|      | Float                       | D1422/A4        | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 33 - 37°     | Empty         |
| 148 - 153°   | Full          |

14. Data Sheet for 33932/FM

BR Cat. No. 072/000257

Class 43

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body 6"                     | D1175M/2        | 051/014089  |
| 1.5  | Dial 6"                     | 27008A/DL       | 072/002764  |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer, Red                | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | 33932/FAA/FL    | 072/002763  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 26 - 28°     | Empty         |
| 60 - 62°     | 1/4           |
| 86 - 88°     | 1/2           |
| 114 - 116°   | 3/4           |
| 146 - 148°   | Full          |

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15. Data Sheet for 37175/FM

BR Cat. No. 061/040958

Class 47

Function Fuel 1 & 2

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000M/3        | 061/040914  |
| 1.5  | Dial                        | 36842/DL        | 061/040959  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Black              | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | 36842/FAA       | 061/040960  |

| Float Position | Gauge Reading |
|----------------|---------------|
| 13 - 17°       | Empty         |
| 145 - 149°     | Full          |

16. Data Sheet for 34771/FM

BR Cat. No. 061/040481

Class 47

Function Fuel 3 (underslung  
500 gal.)

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1175/2/AL      | 051/014089  |
| 1.5  | Dial                        | 64795/1/FM      |             |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer, Red                | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | 34771/FM/FAA    | 061/041812  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 46 - 51°     | Empty         |
| 123 - 128°   | Full          |

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|  | WORKSHOP OVERHAUL SCHEDULE SPECIFICATION   | No WOSS 162/2<br>Issue 3<br>Revision A |
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17. Data Sheet for FM52198

BR Cat. No. 061/035165

Class 47

Function Coolant

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000/3/GM      | 051/008817  |
| 1.5  | Dial                        | FM52198/D       | 061/038194  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | FM52198/FAA     | 061/038193  |
|      | Float                       | D1488/1         | 061/037206  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 53 - 56°     | Empty         |
| 71 - 73°     | 1/4           |
| 89 - 91°     | 1/2           |
| 106 - 109°   | 3/4           |
| 124 - 126°   | Full          |

18. Data Sheet for

BR Cat. No.

Class 47

Function Fuel (ex. boiler  
compt)

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000M/3        | 061/040914  |
| 1.5  | Dial                        | A4APP-199       |             |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Black              | D1013/15        | 017/011768  |
|      | Gear and Float Arm Assembly | 36842/FAA       | 061/040960  |

| Float Position | Gauge Reading |
|----------------|---------------|
| 13 - 17°       | Empty         |
| 145 - 149°     | Full          |

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|  | WORKSHOP OVERHAUL SCHEDULE SPECIFICATION   | No WOSS 162/2<br>Issue 3<br>Revision A |
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19. Data Sheet for 34771/FM

BR Cat. No. 061/040481

Class 47/7

Function Fuel 3 (underslump)  
530 gal.

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1175/2/AL      | 051/014089  |
| 1.5  | Dial                        | 34771/34992D    | 061/041813  |
| 1.14 | Tank Washer                 | D2491           | 051/015019  |
| 1.19 | Pointer, Red                | D1067           | 051/009971  |
|      | Gear and Float Arm Assembly | 34771/FM/FAA    | 061/041812  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 46 - 51°     | Empty         |
| 113 - 118°   | Full          |

20. Data Sheet for 16253/FM/90

BR Cat. No. 051/087106

Class 50

Function Water

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
|      | Front Unit Complete         | 16253FM/90FT    | 051/087107  |
| 2.1  | Body                        | D100/B/PC100    | 061/042009  |
| 2.6  | Tank Washer                 | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 16253FM/90DL    | 051/087108  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 16253FM/FAA     | 051/086133  |
|      | Float                       | D1422/A4        | 061/041154  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 43 - 46°     | Empty         |
| 88 - 92°     | 1/2           |
| 133 - 136°   | Full          |

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21. Data Sheet for 54954/FM

BR Cat. No. 072/007585

Class 56

Function Coolant

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Front Unit Complete         | 45952FM/FT      | 072/005687  |
|      | Body                        | D1000M/3GM      | 051/014077  |
| 1.5  | Dial                        | 45952/DL        | 072/004714  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | 45952FM/FT      | 072/005687  |
|      | Float                       | D2747           | 064/002707  |

| Position of bottom of arm | Gauge Reading |
|---------------------------|---------------|
| 14 - 19°                  | Empty         |
| 142 - 145°                | Full          |

22. Data Sheet for 44585/M32

BR Cat. No. 072/005266

Class 58

Function Coolant

| Item | Description                   | Bayham Part No. | BR Cat. No. |
|------|-------------------------------|-----------------|-------------|
|      | Front Switching Unit Complete | 47585/SU        | 072/005272  |
|      | Dial                          | 47585/M32DL     | 072/005271  |
|      | Pointer, Dayglo               | D2838           | 072/005268  |
|      | Gear and Float Arm Assembly   | 47585M/32FFAA   | 072/005273  |
|      | Float                         | F213            | 072/005274  |
|      | Tank Seating Washer           | D1174           | 061/037947  |
|      | Microswitch                   | MT-4RV          | 072/005269  |

| Arm Position | Gauge Reading           | Terminal Continuity                 |
|--------------|-------------------------|-------------------------------------|
| 57 - 59°     | Empty                   | 1-4 open<br>3-4 closed<br>4-2 open  |
| 65 - 67°     | 2.5mm into Amber Sector | 1-4 open<br>3-4 closes<br>4-2 opens |

(continued)



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22. Data Sheet for 44585/M32 (Cont/d)

BR Cat. No. 072/005266

Class 58

Function Coolant

| Arm Position | Gauge Reading           | Terminal Continuity                |
|--------------|-------------------------|------------------------------------|
| 73 - 75°     | Top of<br>Amber Sector  | 1-4 open<br>3-4 open<br>4-2 closed |
| 84 - 86°     | 'F' of Fill             | 1-4 open<br>3-4 open<br>4-2 closes |
| 103 - 105°   | Top of<br>Yellow Sector | 1-4 closed<br>3-4 open<br>4-2 open |
| 139 - 141°   | Top of<br>Blue Sector   | 1-4 closed<br>3-4 open<br>4-2 open |

23. Data Sheet for 48575/FM

BR Cat. No. 072/005441

Class 58

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Body                        | D1175/2/AL      | 051/014089  |
| 2.6  | Pointer, Black              | D1067           | 051/009961  |
| 2.8  | Dial                        | 48575/FM/DL     | 072/005442  |
| 2.11 | Tank Washer                 | D2491           | 051/015019  |
|      | Gear and Float Arm Assembly | 48575/FM/DL     | 072/005443  |
|      | Float                       | D1054/1/4       | 061/004766  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 28 - 32°     | Empty         |
| 148 - 152°   | Full          |

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24. Data Sheet for 64323FM

BR Cat. No. 072/008377

Class 60

Function Coolant

| Item | Description                                    | Bayham Part No. | BR Cat. No. |
|------|--|-----------------|-------------|
| 1.3  | Body   | D1000M/3GM      | 051/014077  |
| 1.5  | Dial   | 64323/DL        | 072/004714  |
| 1.14 | Tank Washer                                    | D1174           | 002/127180  |
| 1.19 | Pointer  | D1013/15        | 017/017768  |
|      | Extension Tube, Gear and Float<br>Arm Assembly | 64323/XTFAA     |             |
|      | Float  | D2747           | 064/002707  |

25. Data Sheet for 64355FM90

BR Cat. No. 072/008553

Class 60

Function Fuel

| Item | Description                 | Bayham Part No.   | BR Cat. No. |
|------|-----------------------------|-------------------|-------------|
| 1.3  | Body                        | A2AN5D100/A/PC100 | 051/016302  |
| 1.5  | Dial                        | 64355/90DL        |             |
| 1.14 | Tanker Washer               | D2490             | 002/126700  |
| 1.19 | Pointer, Black              | A4PC102/101       | 017/017768  |
|      | Gear and Float Arm Assembly | 64355FM/FAA       |             |
|      | Float                       | D1054/1/4         | 061/004766  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 35 - 39°     | Empty         |
| 138 - 142°   | Full          |

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26. Data Sheet for 5877/FM

BR Cat. No. 083/001823

Class 73

Function Water

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Gauge, Front Unit Complete  | 5877FM/90FT     | 083/001824  |
|      | Body                        | A2AN5D100/B/P   | 061/042009  |
| 2.6  | Pointer                     | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 5877FM/ODL      | 083/001825  |
|      | Gear and Float Arm Assembly | 5877/FM/FAA     | 083/001135  |
|      | Float                       | D149191/SS      | 083/001134  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 73 - 77°     | Empty         |
| 148 - 152°   | Full          |

27. Data Sheet for 30579/FM

BR Cat. No. 014/001515

Class 101

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000/3M        | 017/000133  |
| 1.5  | Dial                        | 30579A/FM/DL    | 014/001521  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | 30579A/FM/FAA   | 014/001522  |
|      | Float                       | D1007/1         | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 57 - 61°     | Empty         |
| 163 - 167°   | Full          |

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28. Data Sheet for 34140

BR Cat. No. 014/096626

Class 104

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000/3         | 061/039029  |
| 1.5  | Dial                        | FM34140/DL      | 014/001266  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | FM34140/FAA     | 014/001267  |
|      | Float                       | D1278           | 051/067013  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 74 - 79°     | Empty         |
| 163 - 167°   | Full          |

29. Data Sheet for 14036/FM

BR Cat. No. 014/001296

Class 108

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000/3         | 017/000133  |
| 1.5  | Dial                        | FM34140/DL      | 014/001266  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/5         | 017/017768  |
|      | Gear and Float Arm Assembly | FM34140/FAA     | 014/001267  |
|      | Float                       | D1278           | 051/067013  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 22 - 26°     | Empty         |
| 154 - 158°   | Full          |

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30. Data Sheet for FM23585

BR Cat. No. 014/096592

Class 110

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 1.3  | Body                        | D1000/3         | 017/000133  |
| 1.5  | Dial                        | FM34140/DL      | 061/039027  |
| 1.14 | Tank Washer                 | D1174           | 002/127180  |
| 1.19 | Pointer, Red                | D1013/15        | 017/017768  |
|      | Gear and Float Arm Assembly | FM23585/FAA     | 014/001272  |
|      | Float                       | D1278           | 051/067013  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 74 - 79°     | Empty         |
| 163 - 167°   | Full          |

31. Data Sheet for 65850/FM

BR Cat. No. 015/004838

Class 141-2

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
|      | Front Unit Complete         | 53073/FM/FT     | 015/081481  |
| 2.1  | Body                        | D100A/PC100     | 051/016302  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 53073/DL        | 015/081482  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 53073/FAA       | 015/081483  |
|      | Float                       | D1007/1         | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 74 - 78.1°   | Empty         |
| 156 - 161°   | Full          |

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32. Data Sheet for 56061/FM

BR Cat. No. 015/082740

Class 143

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | 56061/FM        | 015/082740  |
|      | Body                        | D100A/PC100     | 051/016302  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 56061/DL        | 015/082742  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 53073/FAA       | 015/081483  |
|      | Float                       | D1007/1         | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 74 - 78.1°   | Empty         |
| 156 - 161°   | Full          |

33. Data Sheet for 53073/FM

BR Cat. No. 015/081475

Class 144

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         |                 |             |
|      | Body                        | D100A/PC100     | 051/016302  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 56061/DL        | 015/082742  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 53073/FAA       | 015/081483  |
|      | Float                       | D1007/1         | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 74 - 78.1°   | Empty         |
| 156 - 161°   | Full          |

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34. Data Sheet for 52731/FM

BR Cat. No. 015/078000

Class 150

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | 52731/FM/FT     | 015/078001  |
|      | Body                        | D100A/PC100     | 051/016302  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 52731/DL        | 015/078002  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 52731/FAA       | 015/078003  |
|      | Float                       | D1278           | 051/067013  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 48 - 52°     | Empty         |
| 148 - 152°   | Full          |

35. Data Sheet for 56091/FM

BR Cat. No. 015/078210

Class 151

Function Fuel

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | 533096/FM/FT    | 015/078500  |
|      | Body                        | D100A/PC100     | 051/016302  |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        | 53096/DL        | 015/078501  |
| 2.11 | Tank Washer                 | D2490           | 002/126700  |
|      | Gear and Float Arm Assembly | 53096/FAA       | 015/078502  |
|      | Float                       | D1007/1         | 051/040538  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 28 - 32°     | Empty         |
| 148 - 152°   | Full          |

|  |  |  |
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36. Data Sheet for 61653/2/SP

BR Cat. No. 098/009133

Class 442

Function Water

| Item | Description                 | Bayham Part No. | BR Cat. No. |
|------|-----------------------------|-----------------|-------------|
| 2.1  | Front Unit Complete         | 61612           | 098/009135  |
| 2.6  | Body                        |                 |             |
| 2.6  | Pointer, Red                | D1013/15        | 017/017768  |
| 2.8  | Dial                        |                 |             |
| 2.11 | Tank Washer                 | D1174           | 002/127180  |
|      | Gear and Float Arm Assembly | 61653/FAA/FLT   | 098/009138  |
|      | Microswitch                 | E6628           | 098/009137  |
|      | Microswitch                 | E6601           | 098/009136  |

| Arm Position | Gauge Reading |
|--------------|---------------|
| 137 - 141°   | Empty         |
| 198 - 203°   | 50 gal        |

37. Data Sheet for 35869/TU

BR Cat. No. 064/000934

Class RF, TRF, TRBF, TRFK, TRSB

Function Water

See Figure 3 for parts list.

| Arm Position | Potentiometer Resistance |
|--------------|--------------------------|
| Empty        | 0 - 1 $\Omega$           |
| Full         | 65 - 75 $\Omega$         |

38. Data Sheet for 50134/TU

BR Cat. No. 064/003670

Class SLE, SLEP

Function Water

See Figure 3 for parts list.

| Arm Position | Potentiometer Resistance |
|--------------|--------------------------|
|              |                          |



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#### SECTION 4 ADDITIONAL PROCEDURES

##### A.P. 1 Setting Up of Microswitches Fitted to M32 Units

BR Cat. No.

|   |            |
|---|------------|
| Cable, 19/0.3mm <sup>2</sup> , white insulation, to TDE/74/P/74 | 006/112039 |
| Cable markers, green marked '5'                                 | 054/110675 |
| Crimp terminals, ring tongue, M3, AMP 2-320561                  | 054/119520 |
| Loctite 222   | 007/060355 |

#### NOTE:

The following directions "front", "rear", "clockwise", etc refer to the view facing the front of the dial. Note that contacts are shown on Figures, 6, 7, and 9 in the position they will be in when the tank is full of water. The cams will be off both microswitches when the tank is full so the normally open and normally closed markings moulded on the micro switches are correct for the diagrams.

If re-wiring is necessary, use cable, markers and terminals as above for connection to the microswitches, ensuring all terminations are in accordance with WOSS 560/4.

- 1.1 Connect the wiring in accordance with Figure 6, ensuring that the following conditions exist:-

#### Top Microswitch

- Wire 1 (brown marker) connected to the front right (normally closed) terminal.
- Wire 2 (red marker) connected to the back right (normally open) terminal.
- Wire 5 (green marker) connected between the left (common) terminal and the front left (normally closed) terminal on the bottom microswitch.

#### Bottom Microswitch

- Wire 3 (orange marker) connected to the back left (normally open) terminal.
- Wire 4 (yellow marker) connected to the right (common) terminal.
- Wire 5 as above.

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- 1.2 Check that the microswitch operating arms are not bent in the middle.
- 1.3 Clean off any dirt and grease from the cams and arms.
- 1.4 Check that the end 10mm section of both arms is bent away from the microswitch sufficiently such that the gap between the arm and the brass spacer is 5mm  $\pm$ 1mm, as shown on Figure 7. If necessary, adjust the bend with long nosed pliers to give this 5mm gap.
- 1.5 Check that the backs of the cams (the faces with the clamping screws) do not operate the switches. If they do, slacken the microswitch fixing screws and move the switch away from the cam. Re-adjust the 5mm gap in accordance with paragraph 1.4.
- 1.6 Check that when operated by the cam, the microswitch switches both ways with equal overtravel in both directions. If it is necessary to adjust the overtravel, this can be done by slackening the fixing screws (4.1, 4.20) and moving the switch. Apply Loctite 222 to the threads before tightening the fixing screws.
- 1.7 Turn the magnet fully anticlockwise (looking from the front of the gauge) and check that the tip of the pointer points to x on Figure 8. If it does not, adjust the pointer by loosening the nut (4.22), turning the spindle, and re-tightening the nut.
- 1.8 Set up a test circuit as per Figure 9, and switch on.
- 1.9 Turn the pointer anticlockwise, and check that the top microswitch changes the L.E.D. indication from green to amber as the pointer uncovers the letter "F" on "Fill" on the dial. If it does not, switch off and adjust the position of the front cam.
- 1.10 Turn the pointer anticlockwise and check that the bottom microswitch changes the L.E.D. indication from amber to red when the pointer is 2.5mm  $\pm$ 0.5mm from the red sector. Adjust as necessary by switching off and adjusting the rear cam. Check at this stage that the green L.E.D. does not momentarily illuminate. If it does, move the front cam a fraction clockwise and repeat 1.9 and 1.10.

|  |  |                |
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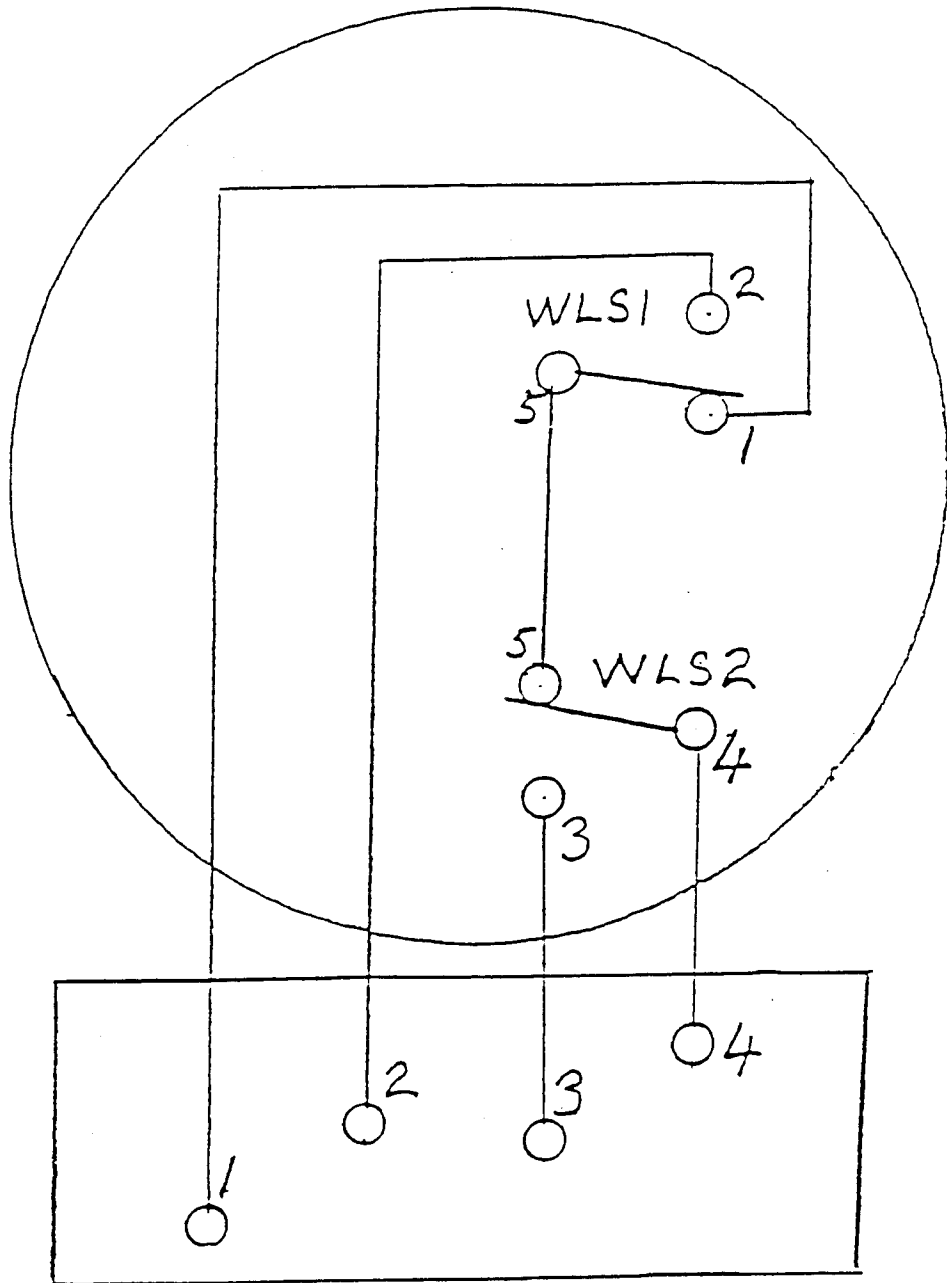


Figure 6. Internal Wiring - M32 Units

|  |  |                |
|--|--|----------------|
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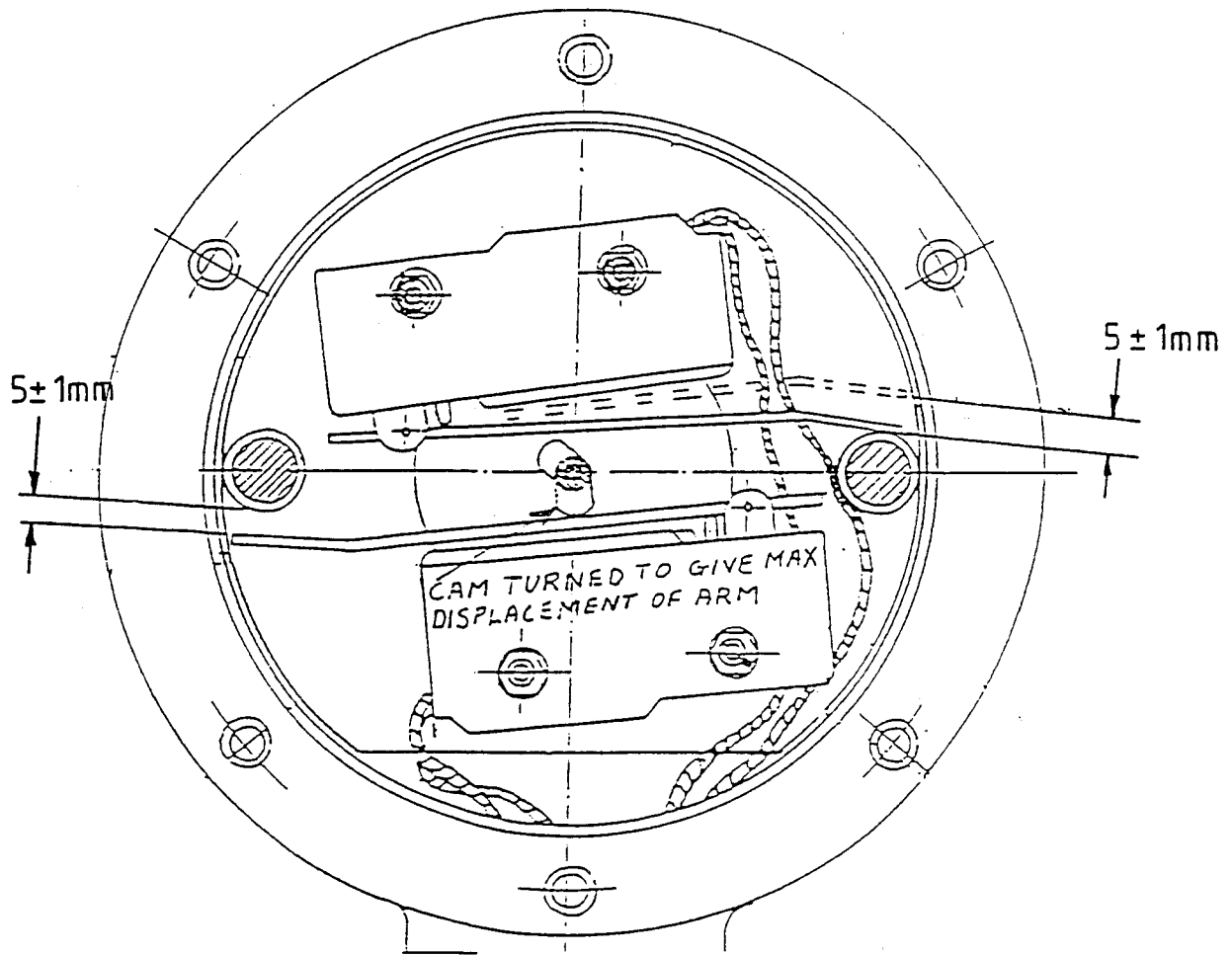


Figure 7. Microswitch Arm Travel - M32 Units

|  |  |                |
|--|--|----------------|
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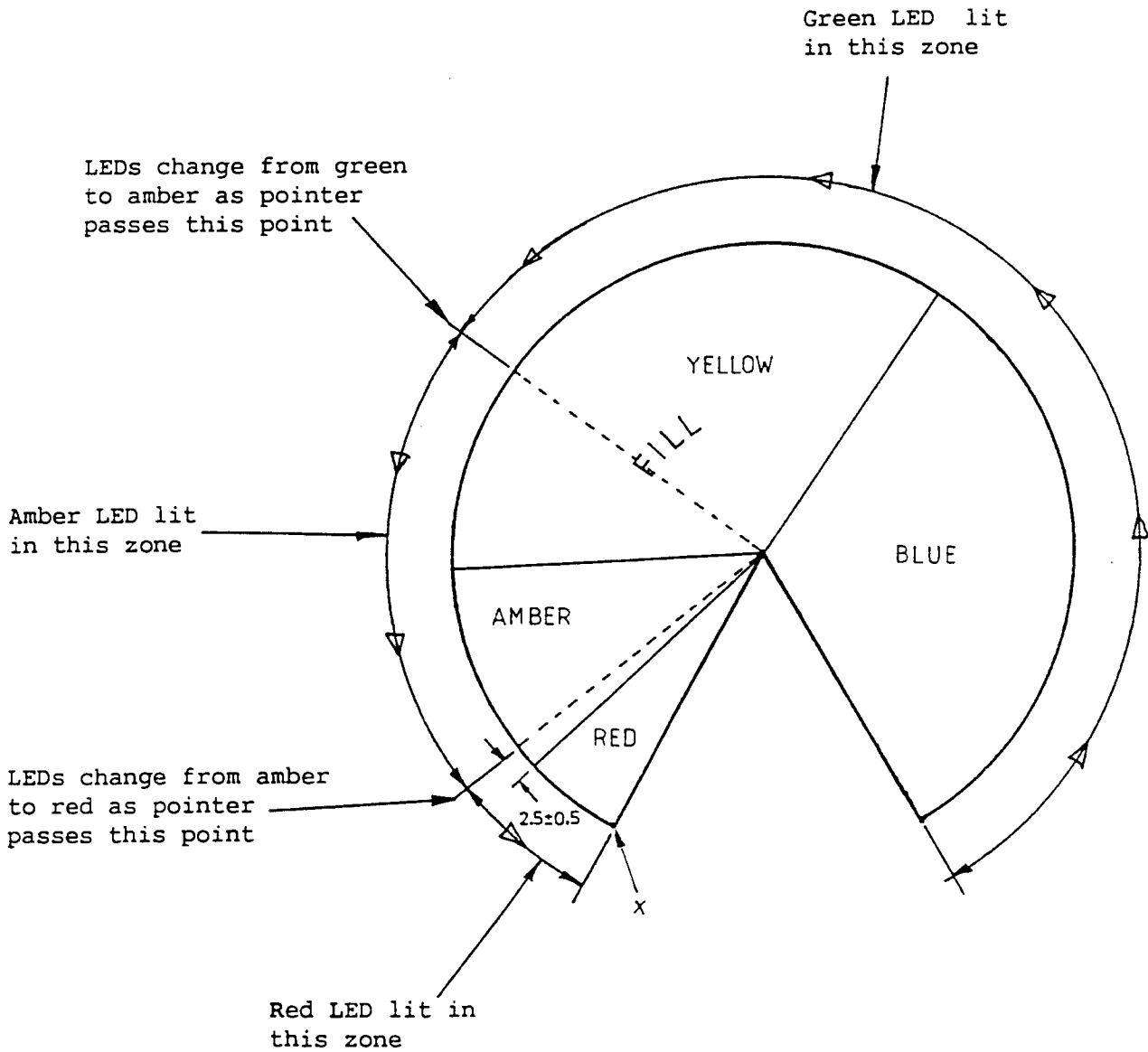


Figure 8. Dial Calibration Points - M32 Units

LIQUID LEVEL GAUGES  
Bayham R & G Series

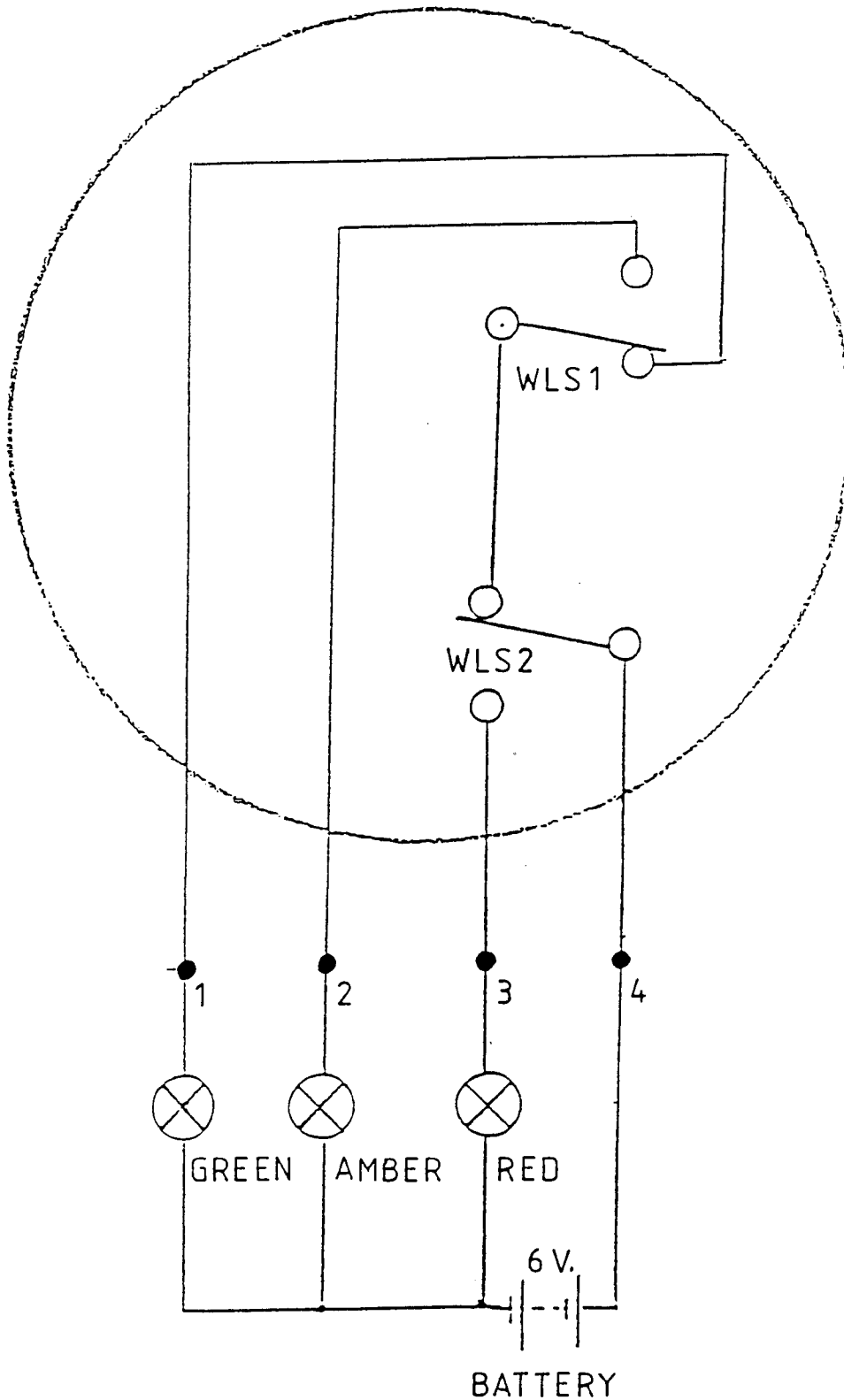


Figure 9. Test Circuit - M32 Units