

PARTS BOOK PUBLICATION INSTRUCTIONS

TO : G. Prescott
FROM : Engineering Department, Hindley Green

DATE : 27.1.92

MACHINE MODEL : L6K

BOOK CPN : 92910777

ISSUE NUMBER : 1

ISSUE DATE : JAN. '92

INSTRUCTIONS

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PARTS BOOK PUBLICATION INSTRUCTIONS

TO : G.Prescott
FROM : C.Ogden

DATE : 27.1.92

This section to be completed by Engineering staff

MACHINE MODEL : L6K BOOK CPN : 92910777
ISSUE NUMBER : 1 DATE REQUIRED : 3.2.92

INSTRUCTIONS

PREPARE BOOK AS PER MASTERS SUPPLIED.

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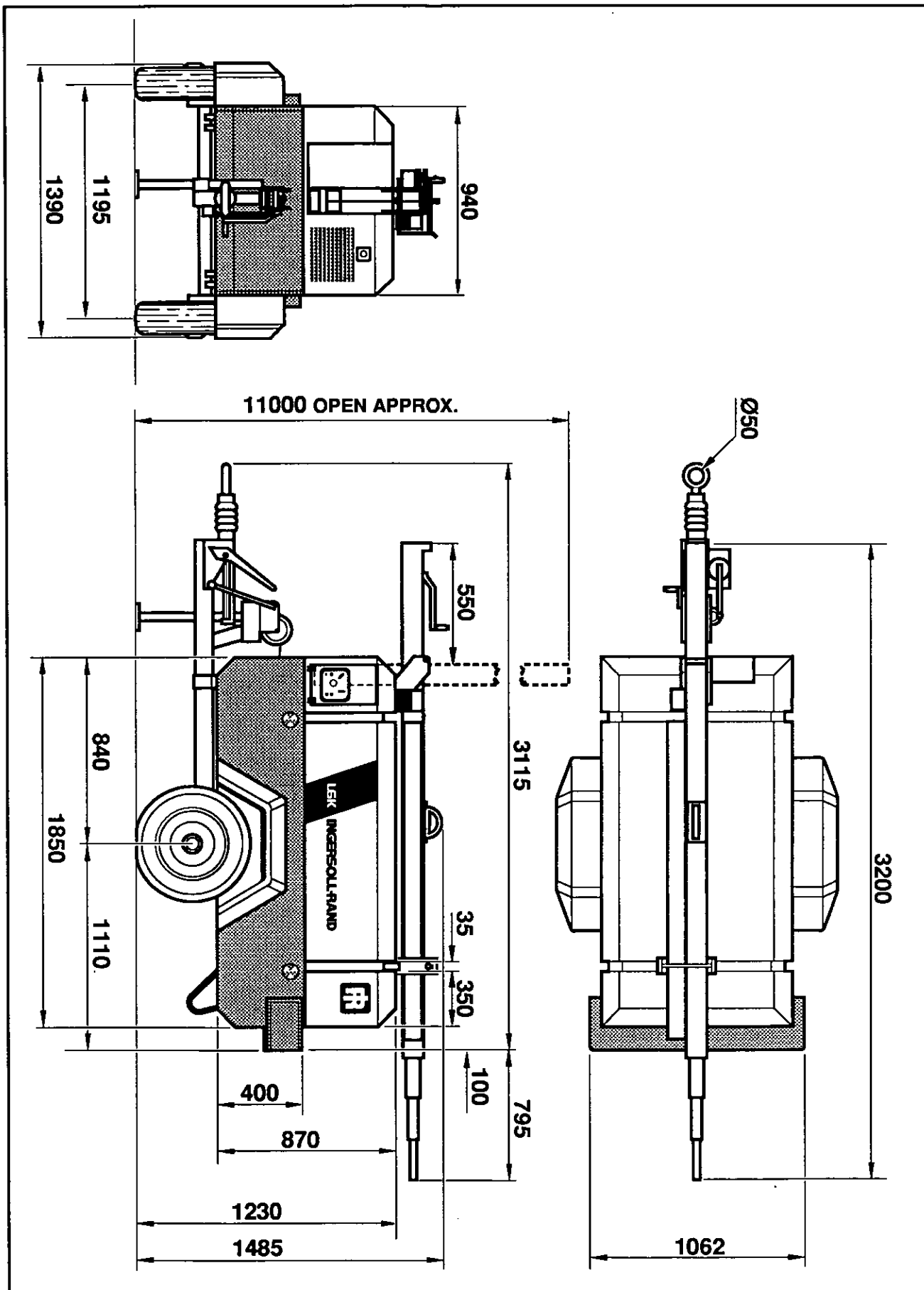
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L6K – LIGHTING TOWER OPERATION, MAINTENANCE & PARTS MANUAL



THIS UNIT WAS PURCHASED FROM

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

**IMPORTANT: FURNISH
COMPLETE SERIAL NUMBER
WHEN ORDERING PARTS**

INDEX

SECTION 1 : OPERATION AND MAINTENANCE MANUAL

| Description | Page |
|----------------------------|-------------|
| Foreword | 3 |
| General Data | 4, 5 |
| Operation | 6 |
| Lubrication | 7 |
| Maintenance | 7, 8 |
| Troubleshooting | 9 |
| Torque Value Chart | 9 |
| Key To Electrical Diagrams | 10 |
| Electrical Diagrams | 11, 12 |

SECTION 2 : PARTS MANUAL

| Description | Page |
|---------------------|-------------|
| General Information | 13 |
| Enclosure | 14 |
| Lighting Tower | 14 |
| Fuel System | 15 |
| Bumper/Lights | 15 |
| Engine | 15 |
| Exhaust System | 15 |
| Running Gear | 15 |
| Air Intake System | 16 |
| Electrical System | 16 |
| Recommended Spares | 16 |

OPERATION AND MAINTENANCE MANUAL

FOREWORD

In preparing this publication, every effort has been made to provide sufficient information to permit an operator to perform his duties so as to receive maximum performance and trouble-free service from the pump. All classes of equipment, regardless of how well they are built, require a certain amount of attention. The unit has been manufactured to the highest standards using only the best of materials and workmanship. The purpose of this publication is to familiarise the operator with the functions, operation and servicing of the various components to obtain the maximum working life from the machine.

Before starting the machine, read the instructions carefully to obtain a thorough knowledge of the duties that need to be

performed in order to operate and maintain the unit successfully.

Inspect the mast regularly, especially winches, cables and pulleys. A medium oil lubricant may be used on the cables and pulleys. It is important **not to lubricate** the friction brake pads on the winch, as this may result in the brake slipping.

For major servicing, not covered in this publication, consult your nearest **INGERSOLL-RAND** branch office or the distributor from whom the machine was purchased. Note that all correspondence with a branch office or distributor should specify the serial number of the machine, together with the model number.

GENERAL DATA**LIGHTING TOWER**

| | |
|--|----------------|
| Model | L6K |
| Performance @ 3000 RPM: | 9.7 kW / 13 hp |
| Light power | 6000 Watts |
| Height | 11m |
| Maximum wind load | 60 mph |
| Operating ambient temperature at sea level | 46°C |

ENGINE

| | |
|---------------------|----------------------------------|
| Type/Model | Kubota D662B |
| Number of cylinders | 3 |
| Oil capacity | 3.8 litres |
| Speed at full load | 3000 RPM |
| Electrical system | 12 volt – negative earth |
| Fuel tank capacity | 42 litres (9.5 imperial gallons) |

WEIGHTS

| | |
|---------------------------------|--|
| Shipping weight | 810 kg |
| Gross weight (ready to operate) | 850 kg |
| Number of wheels/Tyre size | 2 / 4 ¹ / ₂ J x 13 – 155 R13 |
| Tyre pressure | 2.7 bar (39 psig) |
| Wheel nut torque | 81–100 Nm (60–74 lb.ft.) |

OPERATION

BEFORE STARTING

1: Place the unit in a level position. This can be done by use of the four outriggers.

2: Check the engine lubrication oil in accordance with the operating instructions in the engine operators manual.

3: Check the diesel fuel level. A good rule is to 'top up' after each shift. This prevents condensation from occurring in the tank.

CAUTION: Use only a No. 2-D diesel fuel oil with a minimum octane number of 45 and a sulphur content not greater than 0.5%.

4: Before raising the mast, ensure that all the outriggers are fitted.

5. Before raising the mast to the vertical, make sure that the mast is completely closed and the extension lock is in position.

6. Fit the lamps to the mast head and connect to the light junction box.

7. Raise the mast to vertical and fit locking bolt.

8. Erect the mast to the required height.

STARTING THE UNIT:

All normal starting functions are incorporated in the key operated switch.

1: Turn key switch to position I, battery condition light will illuminate.

2: Continue to turn switch to position III (engine start position).

3: Release to position II when engine starts.

4: Release to position I when battery condition light is extinguished.

5: Check the vacuum pump filter pressure gauge reading.

STOPPING THE UNIT:

Turn the start switch to the O (off) position.

CAUTION:

1. Never remove locking bolt whilst mast is erected.

2. If mast is to be left unmanned, padlock the locking bolt in place.

3. When erecting and the mast reaches a 'dead-end' stop, **do not** continue winding.

4. Do not wind winch by any other means than by hand.

5. When retracting the mast and before moving the unit, the mast extension lock must be engaged.

6. Do not use the mast as a lifting device.

LUBRICATION

ENGINE LUBRICATING OIL

Refer to Engine Manufacturers manual.

MAST

Apply a medium oil lubricant to the cables and pulleys.

MAINTENANCE

| SERVICE HOURS | INTERVAL PERIOD | DESCRIPTION | MAINTENANCE REQUIRED |
|------------------|--------------------|-------------------------------|--|
| | Daily | Air filters | Inspect and clean if required |
| | Daily | Fuel tank | Refill to prevent condensation |
| | Daily | Winches/cables, pulleys | Check level and water contamination |
| | Daily | Engine oil | Top up if required |
| 100 | Weekly | Battery | Check levels and replenish with distilled water only |
| 100 | Weekly | Protective shutdown probes | Check for tightness |
| 100 | Weekly | Fan belts | Check for tightness/wear Tighten/replace as necessary |
| 500 | | Air filter element | Replace |
| | 12 months | Wheel bearings | Pack with grease |
| As Required | | Battery | Clean and grease terminals |
| As Required | | Running gear | Check brakes and brake cables. Adjust and grease linkages |

ENGINE AIR FILTER ELEMENTS

The Engine air filter element should be inspected daily and should be replaced every 12 months or 6 cleanings. When cleaning dust from the element, blow compressed air from the inside whilst turning the element. To prevent damage to the filter element, **never exceed a maximum air pressure of 100 p.s.i. (6.9 bar)**. When carbon or oil adheres to the element, soak the element in detergent for 30 minutes, then wash it several times in water, rinse with clean water and dry it naturally.

FUEL SYSTEM

The fuel tank should be filled daily or at the end of each shift. When the unit is to be shut down for any period of time, it is always advisable to refill to prevent condensation. Fuel lines and fittings should be inspected periodically and tightened, or, if they show signs of deterioration, replaced.

Fuel filters should be checked in accordance with the Engine Manufacturers Manual.

ENGINE OIL

Check the engine oil level on a daily basis. *Change the oil and oil filter as recommended in the Engine Manufacturers manual.*

BATTERY

Keep the battery terminals and cable clamps clean and lightly greased to prevent a buildup of corrosion. Maintain the correct electrolyte level within the cells, using only distilled water.

PROTECTIVE SHUTDOWN SYSTEM

Check the oil pressure switch every three months.

COOLING FAN DRIVE

Periodically check that the fan mounting bolt in the fan hub has not loosened. If, for any reason, it becomes necessary to remove the fan or re-tighten the fan mounting bolt, apply a good grade of commercially available thread locking compound to the bolt threads and tighten. Also check the fan belt for cracks or tears.

TYRE AND TYRE PRESSURE

See section on *General Data*

RUNNING GEAR WHEEL BEARINGS

Wheel bearings should be packed with grease every 12 months. The type of grease used should conform to specification *MIL-G-10924*

TROUBLESHOOTING

| FAULT | CAUSE | REMEDY |
|---|---------------------|--|
| <i>Engine fails to start</i> | Low battery | Check fan belt, battery and cables |
| | Bad earth | Check earth cables |
| | Loose wire | Check wiring terminals |
| <i>Engine starts but will not run or shuts down prematurely</i> | Loose light bulb | Check that all lights are lit when power is switched on. Check all lights are extinguished when starter operates |
| | Low oil pressure | Check oil level and filter |
| | Fuel starvation | Check fuel level and system |
| | Electrical fault | Test electrical circuits |
| Note: Refer to Engine Manufacturers Manual | | |
| <i>Engine speed too low</i> | Blocked fuel filter | Check fuel filter if engine smokes |
| | Blocked air filter | Check air filter |

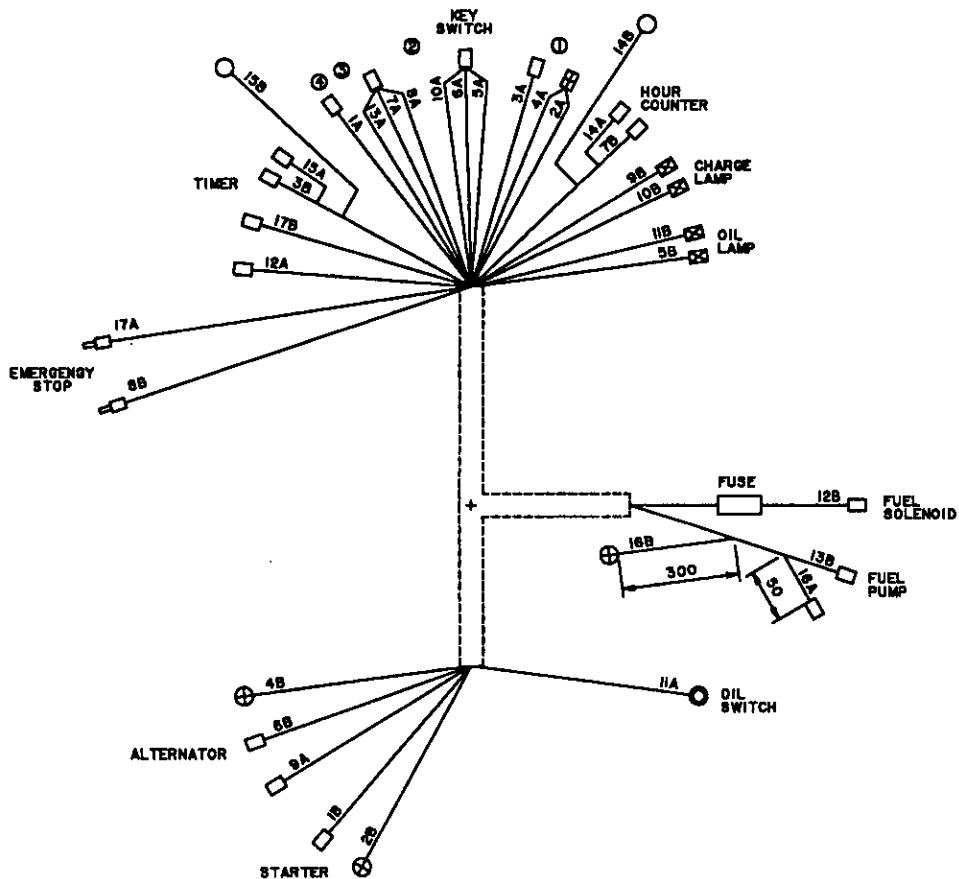
TORQUE VALUES

In order to ensure satisfactory operation of this equipment, it is essential that the fasteners listed below are tightened to the torque values indicated using a suitable torque wrench.

| LOCATION | TORQUE VALUES | |
|---|---------------|---------|
| | kgf | Lbs ft. |
| Generator – Adaptor Studs | 1.3 | 10 |
| Securing Nut for stub shaft & rotor shaft | 2 | 15 |

ELECTRICAL SYSTEM

ELECTRICAL SYSTEM - WIRING HARNESS

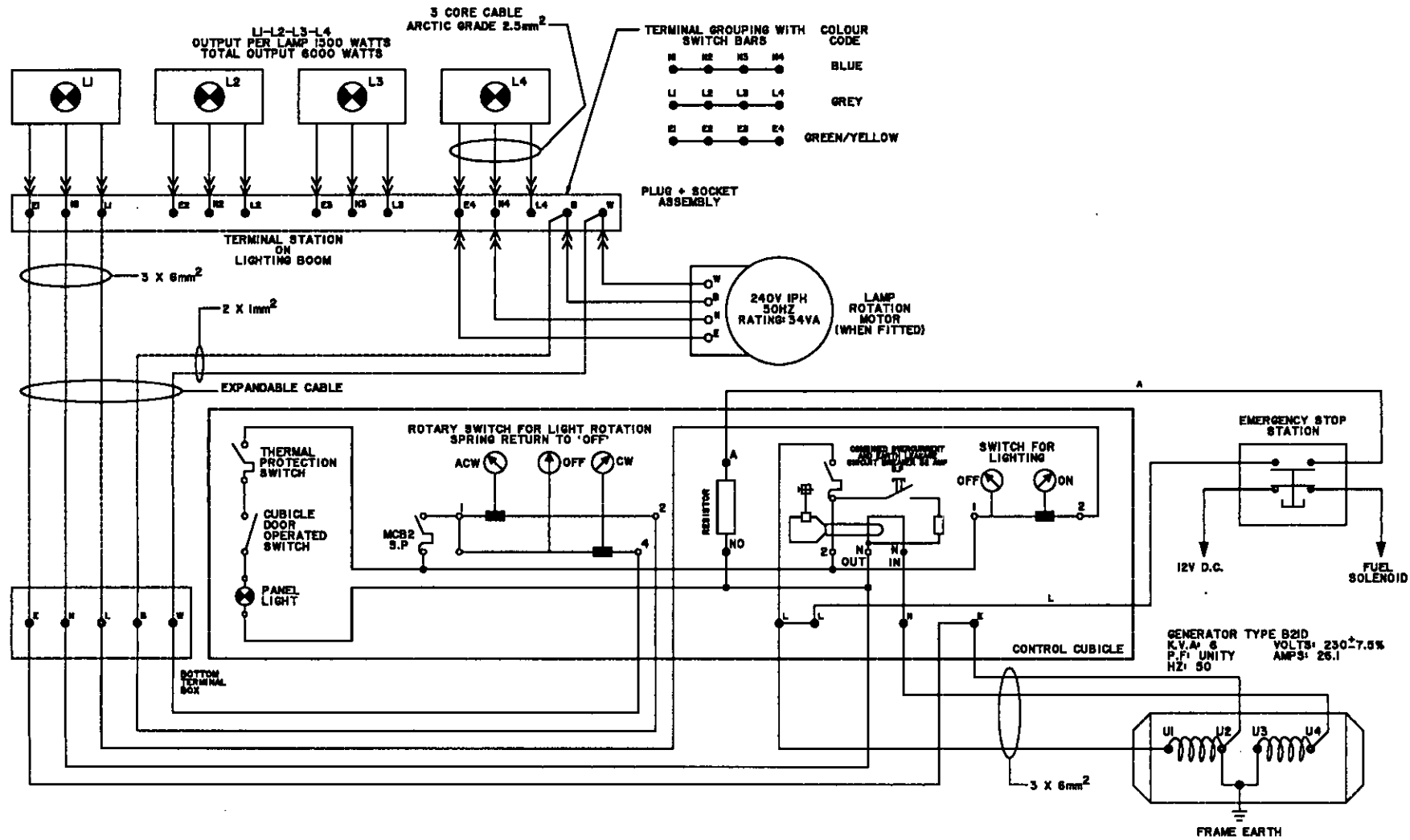


| WIRE NO. | START LOCATION | END LOCATION | COLOUR | SIZE |
|----------|----------------------|--------------------|-------------|------|
| 1 | KEY SWITCH (4) | START SOLENOID -VE | RED/WHITE | 44/3 |
| 2 | KEY SWITCH (1 LARGE) | START SOLENOID +VE | RED | 44/3 |
| 3 | KEY SWITCH (1 SMALL) | TIMER (4) | RED | 14/3 |
| 4 | KEY SWITCH (2) | ALTERNATOR 'B' | BLACK | 14/3 |
| 5 | KEY SWITCH (2) | OIL LAMP | BLUE | 14/3 |
| 6 | KEY SWITCH (2) | ALTERNATOR 'L' | YELLOW | 14/3 |
| 7 | KEY SWITCH (2) | HOUR COUNTER +VE | ORANGE | 14/3 |
| 8 | KEY SWITCH (2) | EMERGENCY STOP | RED/WHITE | 14/3 |
| 9 | ALTERNATOR 'L' | CHARGE LAMP | GREEN | 14/3 |
| 10 | KEY SWITCH (2) | CHARGE LAMP | PURPLE | 14/3 |
| 11 | OIL SWITCH | OIL LAMP | YELLOW | 14/3 |
| 12 | TIMER 1 | FUEL SOLENOID | BROWN/BLACK | 14/3 |
| 13 | KEY SWITCH (2) | FUEL PUMP | WHITE | 14/3 |
| 14 | HOUR COUNTER | EARTH | BLACK | 14/3 |
| 15 | TIMER (2) | EARTH | BLACK | 14/3 |
| 16 | FUEL PUMP | EARTH | BLACK | 14/3 |
| 17 | EMERGENCY STOP | TIMER 3 | YELLOW | 14/3 |

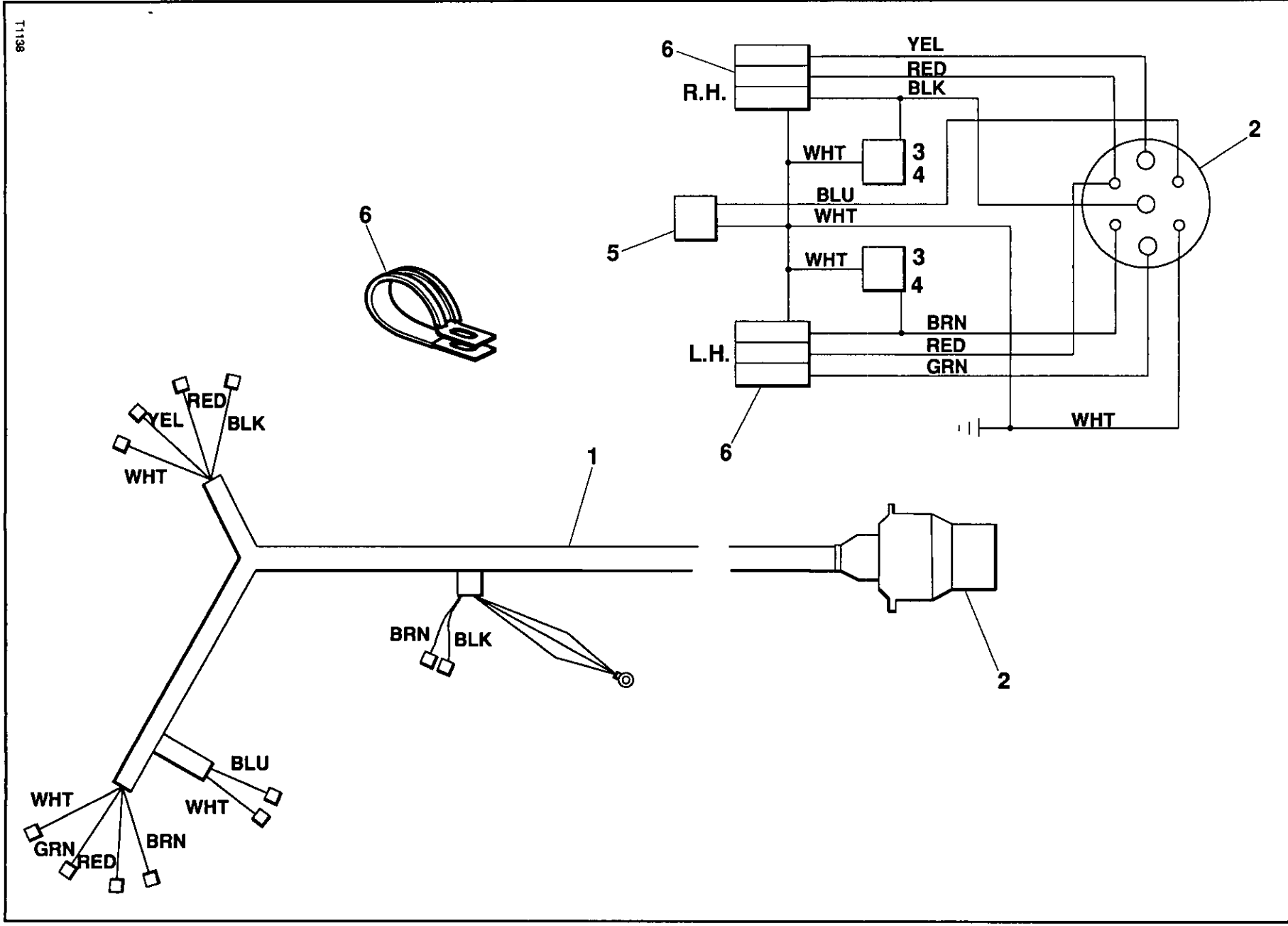
| TERMINALS | DESCRIPTION |
|-----------|-------------------|
| □ | 1/4" FEMALE SPADE |
| ⊞ | 3/8" FEMALE SPADE |
| ⊙ | 4mm RING TONGUE |
| ○ | 6mm RING TONGUE |
| ⊕ | 8mm RING TONGUE |
| ⊞ | 3/8" FEMALE SPADE |
| ⊞ | PIN KVPC 010 |

CONVOLUTED HOSE
NO COVERING

ELECTRICAL SYSTEM – SCHEMATIC



ELECTRICAL SYSTEM SCHEMATIC



TT138

PARTS MANUAL

GENERAL INFORMATION

This manual has been prepared as an aid in identifying and ordering parts.

INGERSOLL-RAND Company service facilities and parts are available worldwide. Each part is referenced with a number. The number, description and quantity needed per assembly are listed on the following pages.

RECOMMENDED SPARE PARTS

A selection of spare parts have been prepared as insurance against prolonged shutdown periods. These parts are itemised at the rear of this publication. The contents of the list gives the part name, part number, the quantity of parts used on the machine and the recommended quantity to keep on hand so as to provide maximum protection for a light tower with a minimum number of parts.

HOW TO ORDER PARTS

When ordering parts, please specify the following:

1: The model number of the unit as shown on the lighting tower data plate.

2: The serial number of the unit as shown on the lighting tower data plate.

3: The part number, description and quantity needed exactly as listed.

CAUTION

Responsibility cannot be accepted for equipment which has been fitted with parts that have not been approved by **INGERSOLL-RAND**.

ALWAYS USE GENUINE INGERSOLL-RAND REPLACEMENT PARTS

ENCLOSURE

| CPN | Qty | Description |
|------------|------------|-----------------------|
| 92880004 | 1 | Chassis |
| 92783786 | 1 | Panel, rear top |
| 92869833 | 1 | Panel, rear bottom |
| 92880020 | 1 | Panel, lower side RH |
| 92882091 | 1 | Panel, lower side LH |
| 92882109 | 1 | Panel, front |
| 92882117 | 1 | Canopy, fixed rear |
| 92882125 | 1 | Support, canopy front |
| 92887058 | 1 | Support, canopy rear |
| 92882927 | 2 | Door, hinged |
| 92882943 | 1 | Canopy, fixed front |
| 92882935 | 1 | Roof |
| 92807585 | 2 | Skid, rear |
| 92886183 | 4 | Outrigger |
| 92895937 | 4 | Prop stand |
| 92783588 | 2 | Fender, plastic |
| | 4 | Gas spring |
| 92895945 | 4 | Shoot bolt |

LIGHTING TOWER

| CPN | Qty | Description |
|------------|------------|--------------------------------------|
| 92895234 | 1 | Block ballast |
| 92895077 | 1 | Mast assembly |
| 92895226 | 1 | Bracket, winch |
| 92892298 | 1 | Bracket, mast support |
| 92895085 | 1 | Bracket, tower support |
| 92885482 | 1 | Mast, support rear |
| 92892918 | 1 | Pin |
| 92895911 | 1 | 'R' clip |
| 92885532 | 4 | Light, halogen |
| 92885540 | 1 | Bracket, mount light assembly |
| 92885557 | 4 | Cable (Light-terminal box) |
| 92885565 | 1 | Box terminal (Light) |
| 92885581 | 1 | Box terminal (Panel/extension cable) |
| 92885599 | 1 | Cable, extendable |
| 92885615 | 1 | Panel, control |
| 92885623 | 1 | Cable (Control panel-generator) |
| 92891639 | 1 | Access cover, control panel |

FUEL SYSTEM

| CPN | Qty | Description |
|------------|------------|---------------------------|
| 92825843 | 1 | Fuel tank assembly |
| 92857556 | 2 | Clamp, fuel tank |
| 92809516 | 1 | Strap assembly, fuel tank |
| 92790492 | 1 | Drop tube |
| 92808666 | 1 | Filter, fuel pipe |
| 92792977 | 1 | Hose, fuel |
| 92814243 | 1 | Fuel filler cap/chain |
| 92808138 | 1 | Gasket, fuel filler cap |

BUMPER/LIGHTS

| CPN | Qty | Description |
|------------|------------|---------------------|
| 92783596 | 1 | Bumper bar, rear |
| 92721331 | 2 | Reflector, triangle |
| 92121243 | 4 | Reflector, amber |

ENGINE

| CPN | Qty | Description |
|------------|------------|--------------------|
| 92882950 | 1 | Engine |

EXHAUST SYSTEM

| CPN | Qty | Description |
|------------|------------|--------------------|
| 92906049 | 1 | Gasket, exhaust |
| 92902386 | 1 | Silencer, exhaust |
| 92902394 | 1 | Tailpipe |

RUNNING GEAR

| CPN | Qty | Description |
|------------|------------|-----------------------|
| 92823152 | 1 | Running gear |
| 92869783 | 2 | Wheel & tyre assembly |
| 92762962 | 1 | Prop stand |

AIR INTAKE SYSTEM

| CPN | Qty | Description |
|------------|------------|---------------------|
| 92899749 | 1 | Aircleaner Assembly |

ELECTRICAL SYSTEM

| CPN | Qty | Description |
|------------|------------|--------------------|
| 92724947 | 1 | Battery |
| 92892322 | 1 | Support, battery |
| 92517648 | 1 | Clamp, battery |
| 92895325 | 1 | Cover, battery |
| 92790112 | 1 | Cable, battery +ve |
| 92790120 | 1 | Cable, battery -ve |
| 92789734 | 1 | Cable, earth |

RECOMMENDED PARTS

| CPN | Qty | Description |
|------------|------------|-------------------------|
| 92909597 | 1 | *Air filter element |
| 92909605 | 1 | *Fuel filter |
| 92909613 | 1 | *Engine oil filter |
| 92906049 | 1 | Exhaust manifold gasket |
| 92086719 | 1 | Hour counter |
| 92306901 | 1 | Starter switch |

***Kubota**

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH

**THE FOLLOWING INFORMATION IS GIVEN TO ASSIST THE OWNERS/
OPERATORS OF MACHINES USED IN THE UNITED KINGDOM**

**FURTHER INFORMATION MAY BE OBTAINED BY REQUEST THROUGH
INGERSOLL-RAND CUSTOMER SERVICES DEPARTMENT**

- 1 THE FOLLOWING SUBSTANCES MAY BE USED IN THIS MACHINE AND COULD BE
HAZARDOUS TO HEALTH IF USED INCORRECTLY.**

| SUBSTANCE | PRECAUTION |
|--|--|
| ● Antifreeze | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| Engine Lubricating Oil | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| Preservative Grease | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| Rust Preventative | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| Diesel Fuel | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| Battery | Avoid Ingestion, Skin Contact and Breathing of Fumes |
| (For further information, see Material Safety Data Sheet ACGP 011/89) | |

- 2 THE FOLLOWING SUBSTANCES MAY BE PRODUCED DURING THE OPERATION OF
THIS MACHINE**

| SUBSTANCE | PRECAUTION |
|----------------------|--|
| Brake Lining Dust | Avoid Breathing during Maintenance |
| Diesel Exhaust Fumes | Avoid Breathing |
| Diesel Exhaust Fumes | Avoid Build-up of Fumes in Confined Spaces |

- Watercooled Engines Only