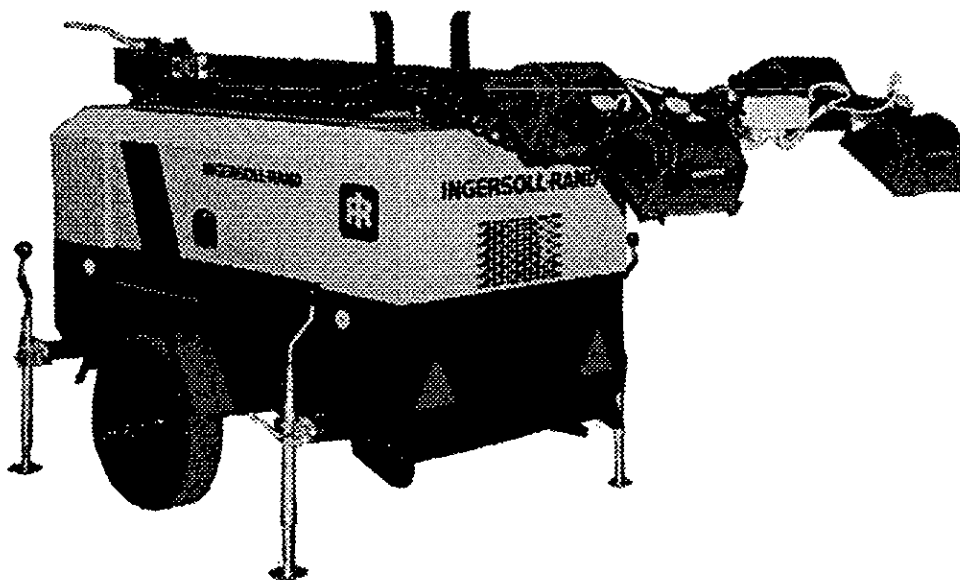


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# LIGHTING TOWER

## OPERATION, MAINTENANCE & PARTS MANUAL



*Doosan purchased Bobcat Company from Ingersoll-Rand Company in 2007. Any reference to Ingersoll-Rand Company or use of trademarks, service marks, logos, or other proprietary identifying marks belonging to Ingersoll-Rand Company in this manual is historical or nominative in nature, and is not meant to suggest a current affiliation between Ingersoll-Rand Company and Doosan Company or the products of either.*

CPN : 92910777  
ISSUE : 2  
DATE : MARCH 1992  
Revised (10-12)

### SERIAL NUMBER RANGE

900001

TO

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# **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.**

<b>SUBSTANCE</b>	<b>PRECAUTION</b>
● 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**

<b>SUBSTANCE</b>	<b>PRECAUTION</b>
Brake Lining Dust	Avoid Breathing during Maintenance
Diesel Exhaust Fumes	Avoid Breathing
Diesel Exhaust Fumes	Avoid Build-up of Fumes in Confined Spaces

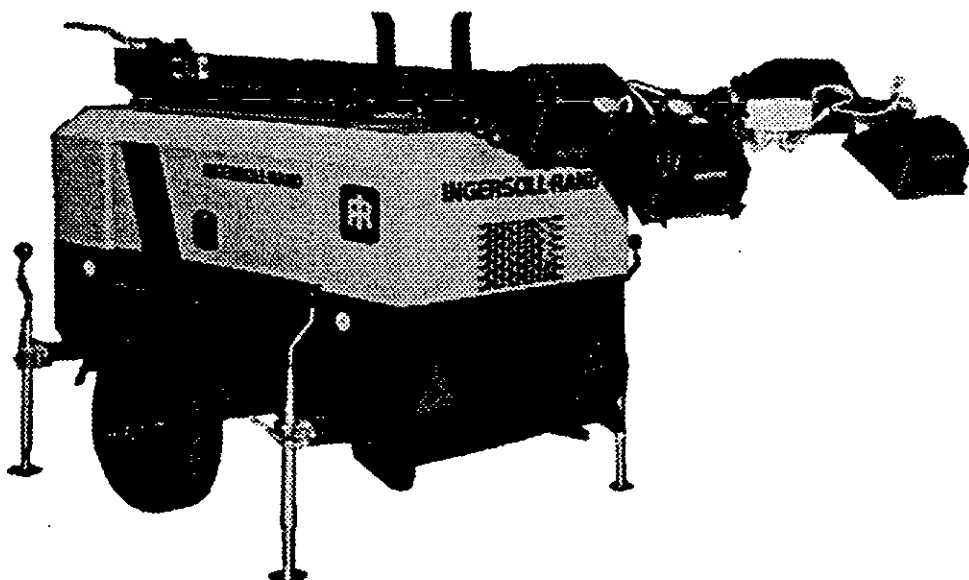
- Watercooled Engines Only

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## LIGHTING TOWER

### OPERATION, MAINTENANCE & PARTS MANUAL



CPN : 92910777  
ISSUE : 2  
DATE : MARCH 1992

#### SERIAL NUMBER RANGE

900001 TO 900050

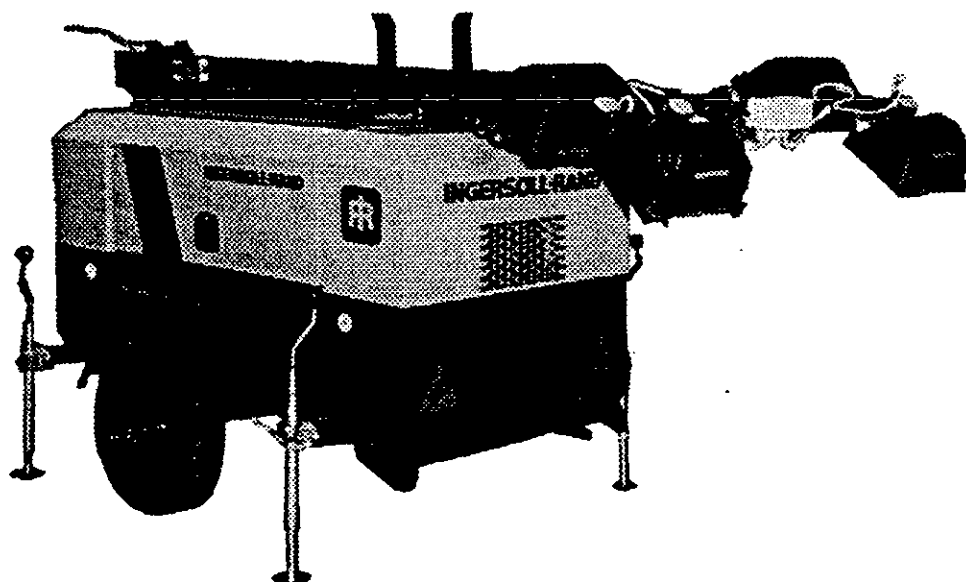
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# INGERSOLL-RAND

## PARTS BOOK PUBLICATION INSTRUCTIONS

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

DATE : 20-3-92

MACHINE MODEL : L6K

BOOK CPN : 92910777

ISSUE NUMBER : 2

ISSUE DATE : 27-3-92

### INSTRUCTIONS

**OK  
TO  
PRINT**

AS PROOF COPY

AFTER MINOR ALTERATIONS

AUTHORISED BY

PLEASE SUPPLY 2 FURTHER COPIES



PAGES


## PARTS BOOK PUBLICATION INSTRUCTIONS

TO : G.Prescott  
FROM : C.Ogden

DATE : 20-3-92

This section to be completed by Engineering staff

MACHINE MODEL : L6K BOOK CPN : 92910777  
ISSUE NUMBER : 2 DATE REQUIRED : 27-3-92

### INSTRUCTIONS

PREPARE SINGLE SIDED BOOK USING MASTER  
PAGES ENCLOSED. PLEASE SUPPLY 7 COPIES.

**ALL ENCLOSED DOCUMENTATION MUST BE RETURNED  
WITH THE PROOF COPY (INCLUDING THIS SHEET)**

### DOCUMENTS ENCLOSED

- |                                     |                        |                          |          |
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| <input type="checkbox"/>            | FINAL COPY             |                          |          |
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### ILLUSTRATION NUMBERS

This section to be completed by the recipient

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DATE RETURNED : \_\_\_\_\_

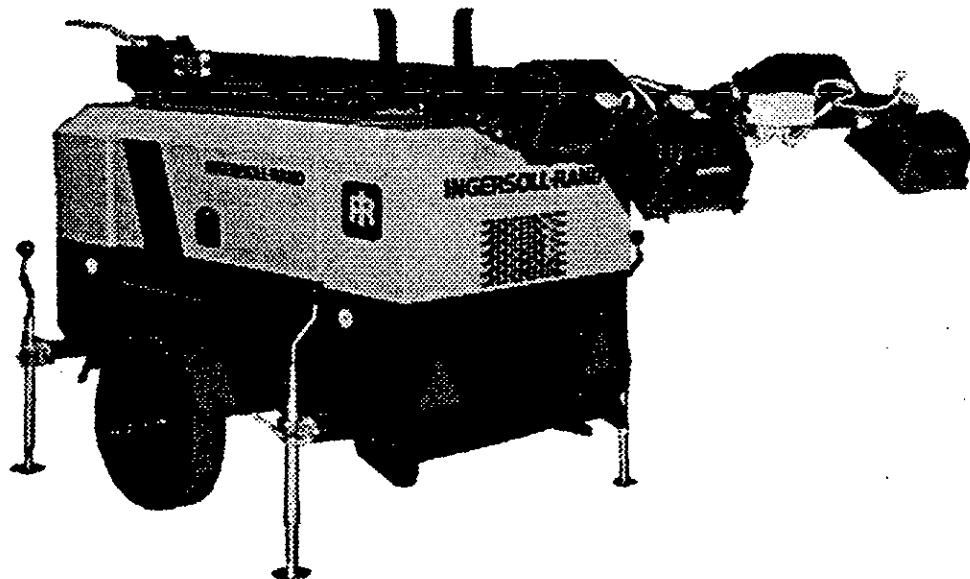
### DOCUMENTS RETURNED

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COMMENT \_\_\_\_\_

# LIGHTING TOWER

## OPERATION, MAINTENANCE & PARTS MANUAL



CPN : 92910777  
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900001

TO

900050

# INGERSOLL-RAND

# **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

<b>Description</b>	<b>Page</b>
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

<b>Description</b>	<b>Page</b>
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 Lighting Tower. 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

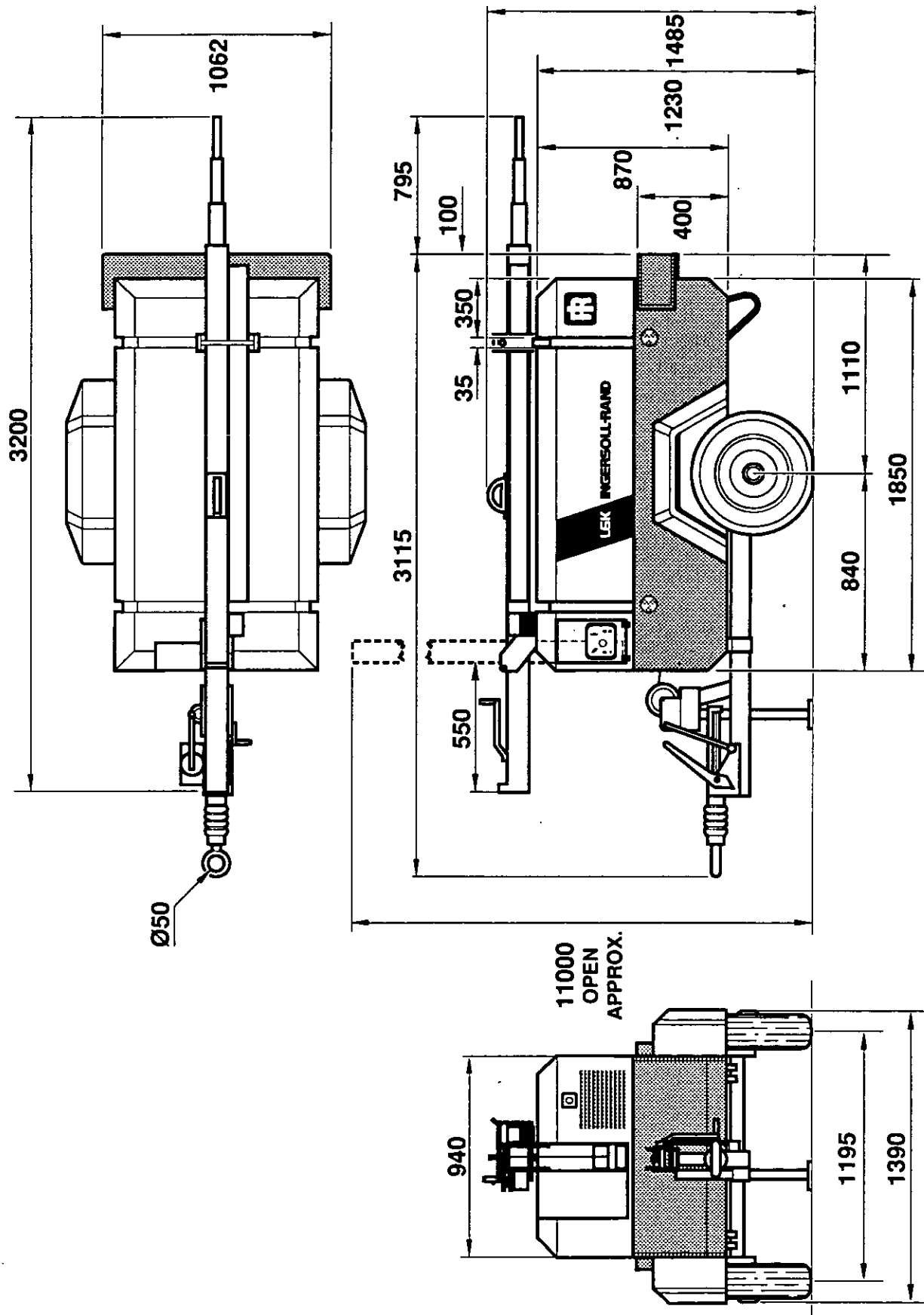
**ENGINE**

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 <sup>1</sup> / <sub>2</sub> J x 13 – 155 R13
Tyre pressure	2.7 bar (39 psig)
Wheel nut torque	81–100 Nm (60–74 lb.ft.)

## GENERAL DATA



## 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. Locking bolt will lock automatically. Fit lock bolt pin.

8. Erect the mast to the required height.  
**DO NOT EXTEND THE MAST TO IT'S FULL EXTENSION BECAUSE THE SAFETY LOCK WILL NOT DISENGAGE.**

### STARTING THE UNIT:

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

1: Turn the key clockwise to position **II**, and hold until the starting aid light is extinguished.

2: Continue to turn to position **III** and hold until engine starts.

3: Release key to position **I**.

### LOWERING MAST:

1. Raise the mast to disengage the safety lock. This 'lock' must be 'held off' whilst lowering the mast.

2. Remove the mast lock pin and lower the mast to it's horizontal position.

3. Fit the mast retaining pin and 'R' clip to secure the mast.

4. Fit the extension retaining pin..

### STOPPING THE UNIT:

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

**NOTE:** Do not stop the engine with the lights switched on.

### CAUTION:

1. Never remove locking bolt whilst mast is erected.

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

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

4. 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 and water temperature switches 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
<b>Note:</b> Refer to <i>Engine Manufacturers Manual</i>		
<i>Engine speed too low</i>	Blocked fuel filter	Check fuel filter if engine smokes
	Blocked air filter	Check air filter

## TORQUE VALUES

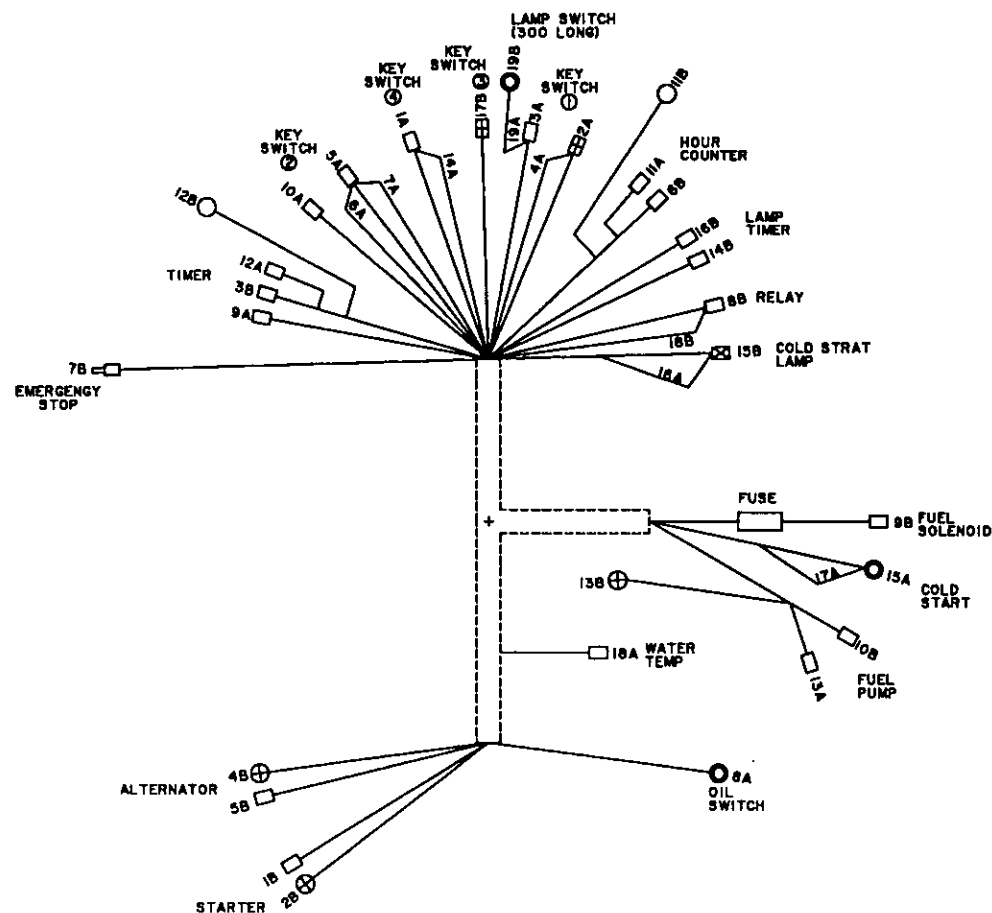
In order to ensure satisfactory operation of this equipment, it is essential that the fasteners listed below are tightened to the torque values indicated using a suitable torque wrench.

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



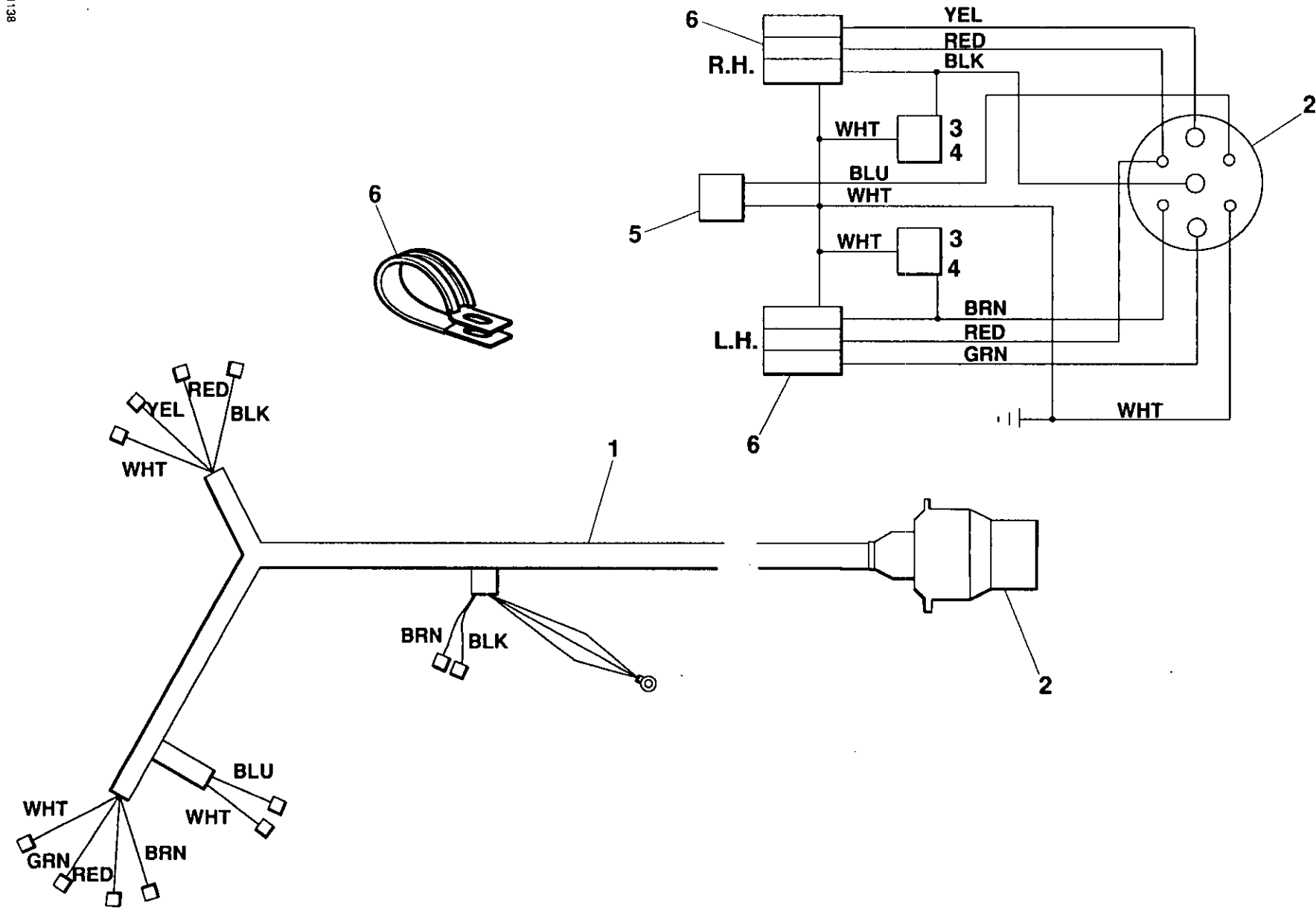
WIRE NO.	START LOCATION	END LOCATION	COLOUR	SIZE
1	KEY SWITCH (4)	START SOLENOID -VE	RED/WHITE	14/3
2	KEY SWITCH (1) LARGE	START SOLENOID +VE	RED	14/3
3	KEY SWITCH (1) SMALL	TIMER (4)	RED	14/3
4	KEY SWITCH (1) MEDIUM	ALTERNATOR 'B'	BLACK	14/3
5	KEY SWITCH (2)	ALTERNATOR '16'	YELLOW	14/3
6	KEY SWITCH (2)	HOUR COUNTER +VE	ORANGE	14/3
7	KEY SWITCH (2)	EMERGENCY STOP	RED/WHITE	14/3
8	OIL SWITCH	RELAY 86	YELLOW	14/3
9	TIMER 1	FUEL SOLENOID	BROWN/BLACK	14/3
10	KEY SWITCH (2)	FUEL PUMP	WHITE	14/3
11	HOUR COUNTER	EARTH	BLACK	14/3
12	TIMER 2	EARTH	BLACK	14/3
13	FUEL PUMP	EARTH	BLACK	14/3
14	KEY SWITCH (1) MEDIUM	TIMER 5 (LAMP TIMER)	GREEN	14/3
15	GLOW PLUG	COLD START LAMP	BROWN	14/3
16	COLD START LAMP	TIMER 4 (LAMP TIMER)	BROWN	14/3
17	GLOW PLUG	KEYSWITCH (3)	BLUE	14/3
18	WATER TEMP	RELAY	YELLOW	14/3
19	KEY SWITCH (1) MEDIUM	PANEL LAMP SWITCH	BLACK	14/3

TERMINALS	DESCRIPTION
□	1/4" FEMALE SPADE
⊞	3/8" FEMALE SPADE
⊙	4mm RING TONGUE
⊕	6mm RING TONGUE
⊗	8mm RING TONGUE
⊞	3/16" FEMALE SPADE
⊞	PIN LUG KVPC 010

--- CONVOLUTED HOSE  
 --- NO COVERING



T1138



## **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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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	Outtrigger
92895937	4	Prop stand
92783588	2	Fender, plastic
	4	Gas spring
92895945	4	Shoot bolt

**LIGHTING TOWER**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92783596	1	Bumper bar, rear
92721331	2	Reflector, triangle
92121243	4	Reflector, amber

**ENGINE**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92882950	1	Engine

**EXHAUST SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92906049	1	Gasket, exhaust
92902386	1	Silencer, exhaust
92902394	1	Tailpipe

**RUNNING GEAR**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92823152	1	Running gear
92869783	2	Wheel & tyre assembly
92762962	1	Prop stand

**AIR INTAKE SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92899749	1	Aircleaner Assembly

**ELECTRICAL SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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.**

<b>SUBSTANCE</b>	<b>PRECAUTION</b>
● Antifreeze Engine Lubricating Oil Preservative Grease Rust Preventative Diesel Fuel Battery	Avoid Ingestion, Skin Contact and Breathing of Fumes Avoid Ingestion, Skin Contact and Breathing of Fumes Avoid Ingestion, Skin Contact and Breathing of Fumes Avoid Ingestion, Skin Contact and Breathing of Fumes Avoid Ingestion, Skin Contact and Breathing of Fumes 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**

<b>SUBSTANCE</b>	<b>PRECAUTION</b>
● Brake Lining Dust Diesel Exhaust Fumes Diesel Exhaust Fumes	Avoid Breathing during Maintenance Avoid Breathing Avoid Build-up of Fumes in Confined Spaces

- Watercooled Engines Only



# **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

<b>Description</b>	<b>Page</b>
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

<b>Description</b>	<b>Page</b>
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 Lighting Tower. 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**

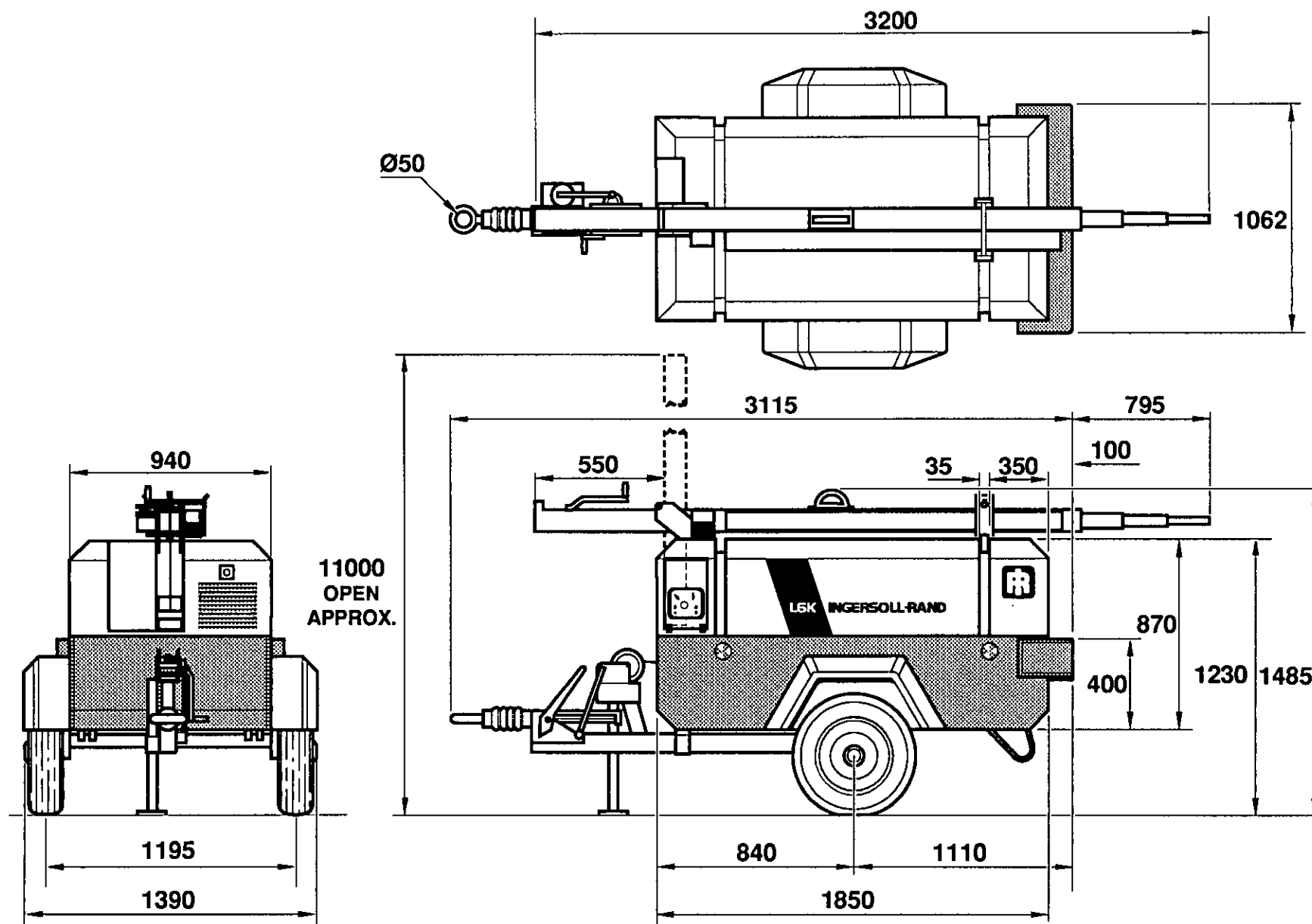
Model	L6K
Performance @ 3000 RPM:	9.7 kW / 13 hp
Light power	6000 Watts
Height	11m
Maximum wind load	60 mph
Operating ambient temperature at sea level	46°C

**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 <sup>1</sup> / <sub>2</sub> 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. Locking bolt will lock automatically. Fit lock bolt pin.

8. Erect the mast to the required height.  
**DO NOT EXTEND THE MAST TO IT'S FULL EXTENSION BECAUSE THE SAFETY LOCK WILL NOT DISENGAGE.**

### STARTING THE UNIT:

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

1: Turn the key clockwise to position **II**, and hold until the starting aid light is extinguished.

2: Continue to turn to position **III** and hold until engine starts.

3: Release key to position **I**.

### LOWERING MAST:

1. Raise the mast to disengage the safety lock. This 'lock' must be 'held off' whilst lowering the mast.

2. Remove the mast lock pin and lower the mast to it's horizontal position.

3. Fit the mast retaining pin and 'R' clip to secure the mast.

4. Fit the extension retaining pin.

### STOPPING THE UNIT:

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

**NOTE:** Do not stop the engine with the lights switched on.

### CAUTION:

1. Never remove locking bolt whilst mast is erected.

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

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

4. 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 and water temperature switches 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
<b>Note:</b> 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

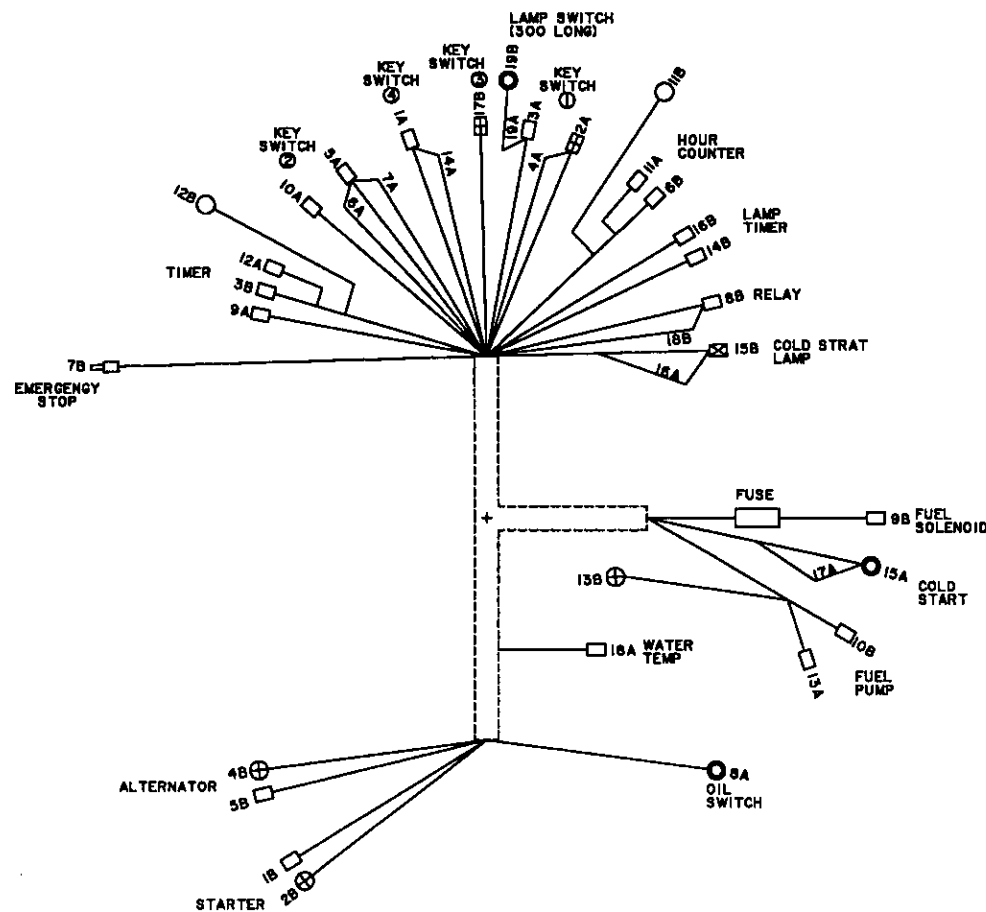
## TORQUE VALUES

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

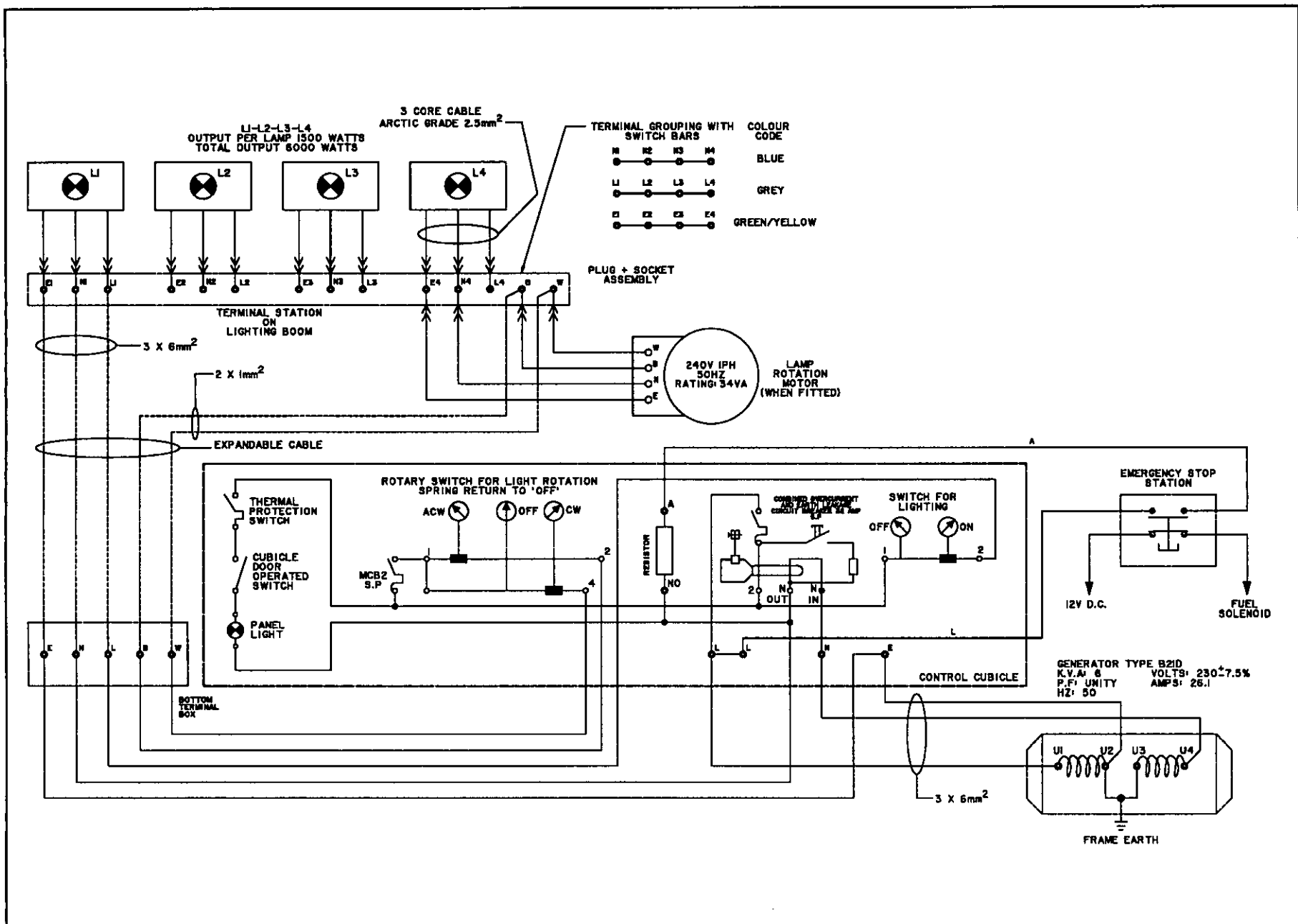


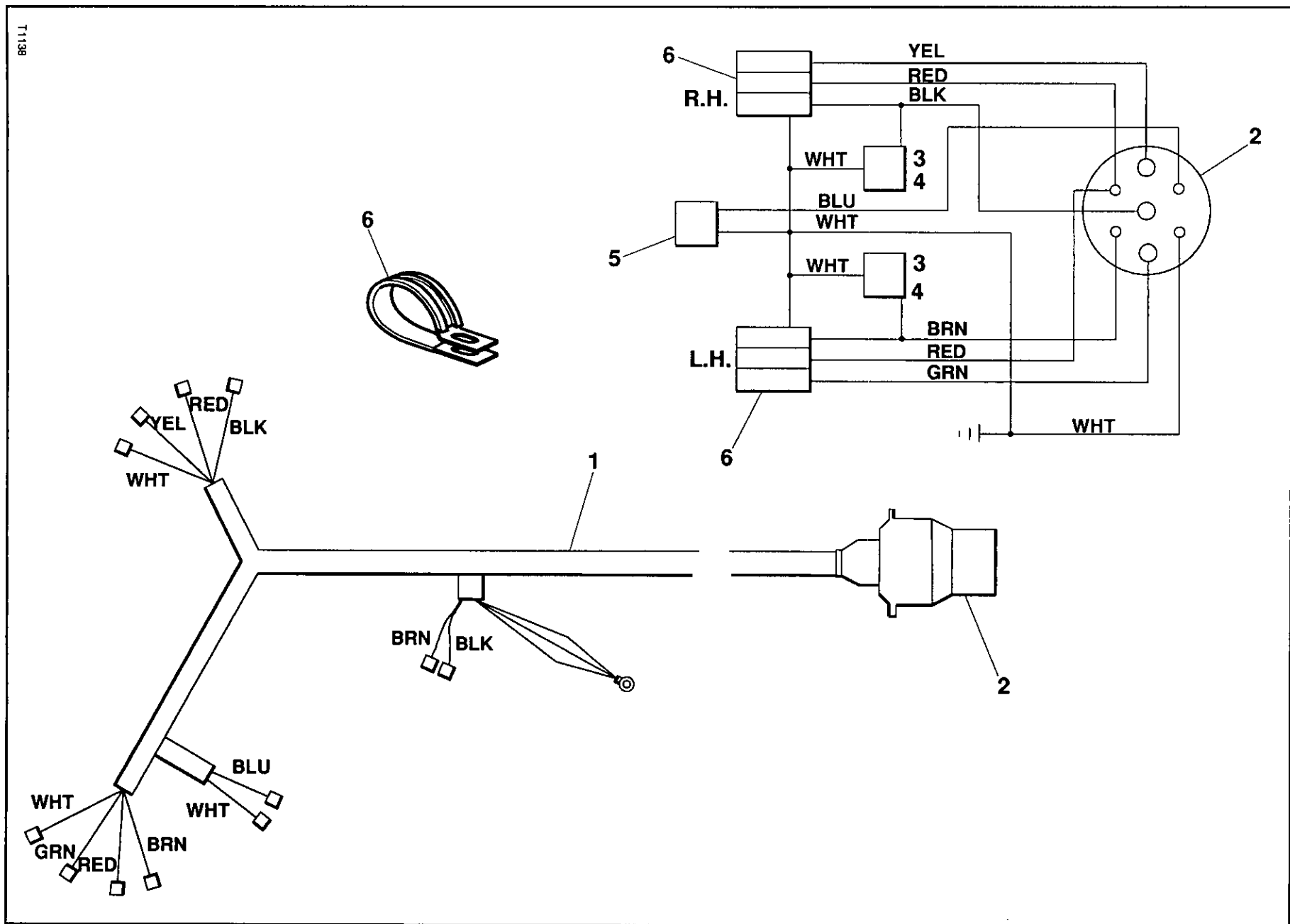
WIRE NO.	START LOCATION	END LOCATION	COLOUR	SIZE
1	KEY SWITCH (4)	START SOLENOID -VE	RED/WHITE	44/3
2	KEY SWITCH (1) LARGE	START SOLENOID +VE	RED	44/3
3	KEY SWITCH (1) SMALL	TIMER (4)	RED	14/3
4	KEY SWITCH (1) LARGE	ALTERNATOR 'B'	BLACK	14/3
5	KEY SWITCH (2)	ALTERNATOR '16'	YELLOW	14/3
6	KEY SWITCH (2)	HOUR COUNTER +VE	ORANGE	14/3
7	KEY SWITCH (2)	EMERGENCY STOP	RED/WHITE	14/3
8	OIL SWITCH	RELAY 8B	YELLOW	14/3
9	TIMER 1	FUEL SOLENOID	BROWN/BLACK	14/3
10	KEY SWITCH (2)	FUEL PUMP	WHITE	14/3
11	HOUR COUNTER	EARTH	BLACK	14/3
12	TIMER 2	EARTH	BLACK	14/3
13	FUEL PUMP	EARTH	BLACK	14/3
14	KEY SWITCH (4) PHOTOGRAPH	TIMER 5 (LAMP TIMER)	GREEN	14/3
15	GLOW PLUG	COLD START LAMP	BROWN	14/3
16	COLD START LAMP	TIMER 4 (LAMP TIMER)	BROWN	14/3
17	GLOW PLUG	KEYSWITCH (3)	BLUE	14/3
18	WATER TEMP	RELAY	YELLOW	14/3
19	KEY SWITCH (1) LARGE	PANEL LAMP SWITCH	BLACK	14/3

TERMINALS	DESCRIPTION
□	1/4" FEMALE SPADE
▢	3/8" FEMALE SPADE
⊙	4mm RING TONGUE
○	6mm RING TONGUE
⊕	8mm RING TONGUE
⊗	3/16" FEMALE SPADE
□	PIN LUG KVPC 010

--- CONVOLUTED HOSE  
 — NO COVERING

## ELECTRICAL SYSTEM – SCHEMATIC





## **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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92783596	1	Bumper bar, rear
92721331	2	Reflector, triangle
92121243	4	Reflector, amber

**ENGINE**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92882950	1	Engine

**EXHAUST SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92906049	1	Gasket, exhaust
92902386	1	Silencer, exhaust
92902394	1	Tailpipe

**RUNNING GEAR**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92823152	1	Running gear
92869783	2	Wheel & tyre assembly
92762962	1	Prop stand

**AIR INTAKE SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
92899749	1	Aircleaner Assembly

**ELECTRICAL SYSTEM**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**

<b>CPN</b>	<b>Qty</b>	<b>Description</b>
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**