



# Service And Maintenance Illustrated Parts Manual

*Models*  
*4108AN*

1734150

August 06, 2018



Quality  
Endorsed  
Company

ISO 9001Lic 6080



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# SECTION ONE

## SERVICE AND MAINTENANCE

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## **SAFETY ALERT SYMBOLS AND SAFETY SIGNAL WORDS**



This is the Safety Alert Symbol. It is used to alert you to the potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

### **! DANGER**

INDICATES AN IMMINENTLY HAZARDOUS SITUATION. IF NOT AVOIDED, WILL RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE A RED BACKGROUND.

### **! WARNING**

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, COULD RESULT IN SERIOUS INJURY OR DEATH. THIS DECAL WILL HAVE AN ORANGE BACKGROUND.

### **! CAUTION**

INDICATES A POTENTIALLY HAZARDOUS SITUATION. IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY. IT MAY ALSO ALERT AGAINST UNSAFE PRACTICES. THIS DECAL WILL HAVE A YELLOW BACKGROUND.

### **IMPORTANT**

INDICATES PROCEDURES ESSENTIAL FOR SAFE OPERATION. THIS DECAL WILL HAVE A GREEN BACKGROUND.

## **SAFETY PRECAUTIONS**

Throughout the service and maintenance section of this manual cautions and warnings are shown in **BOLD TYPE**. These outline where special care is required when undertaking the various procedures outlined.

### **⚠ CAUTION**

**WHEN AN ABNORMAL CONDITION IS NOTED WITH THE MACHINE AND THE PROCEDURES WITHIN THIS MANUAL DO NOT COVER THE CONDITION, WORK SHOULD BE STOPPED UNTIL TECHNICALLY QUALIFIED GUIDANCE CAN BE CONSULTED.**

- Modifications or alterations to the lighting tower are not permitted without the prior written permission of the manufacturer.
- Failure to comply with the safety precautions listed here and elsewhere in the manual may result in severe injury or death.
- When handling the lighting tower other than towing for the purposes of lifting or manoeuvring, there are forklift pockets provided at the rear of the machine and 4 lifting points provided on the main frame for lifting by a crane. Ensure that the forklift or crane is of suitable capacity prior to attempting the lift. Refer to the diagrams shown on page 1-11 in this manual for correct handling procedures using a crane and forklift.

### **HYDRAULIC SYSTEM**

The lighting tower incorporates a hydraulic system for the purpose of operating the mast functions. Dangerous hydraulic pressures are created by this system. All applicable safety precautions should be taken when working on the hydraulic system.

### **⚠ WARNING**

Shutdown the machine prior to disconnecting hydraulic lines. Ensure the machine is safely supported prior to removal of hydraulic lines, cylinders etc.

### **ELECTRICAL SYSTEM**

### **⚠ WARNING**

The lighting tower incorporates an electrical system which generates voltages in excess of 400 volts AC.

**Severe injury or death could result if work is undertaken by untrained and unqualified personnel.**

**All safety precautions should be undertaken when working on the machine.**

**Shutdown the machine prior to disconnecting electrical wiring.**

**SPECIFICATIONS**

**1.1 CAPACITIES**

	<b>D905</b>
Hydraulic Oil Tank	5.6L
Fuel Tank	145L
Engine Crank Case	5.1L
Radiator	3.6L

**1.2 COMPONENT DATA**

**Engine—Kubota D 905BG**

3 Cylinder, water-cooled  
 Rated Power 8.8 HP SAE Net @  
 R.P.M. 1500

**Alternator –**

Mecca-Alte  
 Model C2-180/4  
 Rated Power. 6.7k VA  
 Single phase  
 Self Excited  
 Volts 240

Sincro  
 Model-FK4MDS  
 Rated Power- 8 KVA  
 Single Phase  
 Volts- 240V

**Hydraulics – Fenner Fluid Power**

Motor 12 Volt D.C.  
 Operating Pressure 2500PSI  
 17.23mpa  
 Pump Volume 0.8cc

**Lights – Sylvania Briteline  
 2000/1000**

Type Metal Halide  
 Rated Watts 1000 x 4

**Electrical Controls**

Main circuit breaker 25 amps  
 R.C.D. trip rating 30 Milliamps

**Axle**

Single Axle (IRS) Independent Rubber Suspension.

**Brakes**

Mechanical overriding. Drum.

**Tyres**

Dimensions 6.50x14"

**Wheels**

Dimensions 14"x5J rim

**Battery**

Model	N70ZZ
Voltage	12 Volt DC
C.C.A.	600 amps
Reserve Current	130 amps

**1.3 DIMENSIONS**

Length (Drawbar Stowed)	2.5 m
Width	1.74m
Height Stowed	2.4m
Height Erected	8m

**1.4 WEIGHT**

Aggregate weight	1350kg est
Towbar weight	80kg

**1.5 PERFORMANCE**

Mast lift time	110 Seconds
Mast Lower time	90 Seconds
Rated Towing Speed	80km/h
Fuel Consumption	1.5l/h

## **PRODUCT DESCRIPTION**

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### **PRODUCT DESCRIPTION**

The model 4108AN Lighting Tower is an ultra compact unit designed for maximum performance incorporating modest features while maintaining a compact overall size.

Its unique mast design allows for maximum height while still maintaining a compact stowed profile. The Tower's short length allows for "across the tray" stowing on trucks which allows for a greater number of units to be carried on an 8 foot wide truck tray.

The unit is powered by a Kubota 3 cylinder water cooled diesel engine coupled to a single phase self regulating alternator.

Four 1000 Watt Sylvania Briteline metal halide floodlight fixtures provide a wide light dispersion while maintaining a compact overall size for minimum sail area and maximum stability in high winds.

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### **Mast Operation**

The articulating telescopic mast allows for a working height of 8m. It is actuated by a single lift cylinder for the raise lower function. In addition, the upper section has a double acting cylinder for the telescope function. The four lamps are mounted on a light bar which has a single double acting cylinder for tilting the complete assembly. This function aids in the directional control of the light array together with providing adjustment when the mast is lowered for compact storage.

Three lever type hydraulic valve controls are provided for the operation

of the three mast functions of lift up, telescope, tilt.

A manual mast rotation system is employed with locking mechanism to allow for easy light positioning through 350 degrees of operation.

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### **Frame**

The light tower unit is constructed on a fully welded robust steel chassis.

Two large gas strut assisted doors swing up to provide access to all internal components for service and maintenance.

A single axle with leaf spring suspension is fitted to the machine providing a smoother ride with minimal maintenance and optimum towing stability. Mechanical override brakes are fitted for good stopping performance and a park brake is fitted for secure stowage of the machine.

Stability of the machine is provided by four outrigger/jack stowed integrally on the machine.

Three pull out legs are provided at the rear, each with a wind down jack mechanism. The fourth jack is mounted on the drawbar at the front of the machine.

Together the four outrigger legs provide a wide footprint to maintain machine stability in winds up to 118km/h.

## PRODUCT DESCRIPTION

### Transport

In addition, a transport leg is provided on the draw bar near the base of the mast. This leg may be pinned in the lowered position to support the front of the machine for transport or storage in a yard without the need to extend the draw bar.

### **⚠ CAUTION**

**ENSURE THE TRANSPORT LEG IS RAISED AND PINNED PRIOR TO TOWING THE LIGHTING TOWER.**

### **⚠ WARNING**

**DO NOT CHAIN DOWN THE MACHINE USING THE DRAWBAR EXTENDED AND FRONT JACK DOWN. DAMAGE TO THE DRAWBAR MAY RESULT FROM EXCESSIVE FORCES. USE THE TRANSPORT LEG.**

### Electrical

Power for the four metal halide lights comes from an 8.5KVA single-phase alternator. The output of the alternator connects directly to a combined main circuit breaker and Residual Current Device (RCD) located on the main control panel. The main circuit breaker is rated at 25 amps and provides main circuit protection. The RCD has a rated trip current of 30 milliamps providing protection to operators against hazards of electrocution.

An optional single phase 10 amp GPO may be provided on some units. This circuit has a separate 10 Amp breaker for protection.

### Engine Control Panel

A compact engine control panel provides a key operated ignition switch with a glow and start position. A warning lamp is also provided on this panel for alternator charge. An hour meter and one D.C. push to reset type circuit breaker rated at 20 amps for main D.C. circuit protection is included.

Located within the engine control panel enclosure is a timer module which forms part of the glow plug circuit. It provides a preset preheat time for the glow plugs ensuring reliable performance.

### Hydraulic System

A 12VDC Hydraulic power pack provides the power source to control the mast assembly.

Three lever actuated directional control valves combined with hydraulic controls enable switch, allow for proportional directional control of mast lift, telescope, and tilt functions.

A main pressure relief valve protects the hydraulic system and mast mechanics from over pressure. It is set for an operating pressure of 2500PSI.

The pump motor draws power from the engine start battery, which is a marine/deep cycle style, therefore the mast can be raised and lowered without the main engine running.



## MAINTENANCE PROCEDURES

### MAINTENANCE PROCEDURES

Refer to the supplement manual for all service procedures in relation to the Kubota D905 Diesel Engine.

## **IMPORTANT**

**WHEN UNDERTAKING ANY MAINTENANCE OR REPAIR PROCEDURES ON THE LIGHTING TOWER, PARTICULAR ATTENTION SHOULD BE TAKEN ON ALL PROCEDURES INVOLVING WORKING IN, UNDER OR OVER THE MACHINE.**

**THE FOLLOWING GENERAL GUIDELINES SHOULD BE READ AND UNDERSTOOD PRIOR TO CARRYING OUT ANY MAINTENANCE OR REPAIR WORK.**

### General

The following information is provided to assist you in the use of maintenance procedures contained in this section.

### Safety and workmanship

Your safety, and that of others, is the first consideration when engaging in the maintenance of equipment. Always be conscious of weight. Never attempt to move heavy parts without the aid of a mechanical device. Do not allow heavy objects to rest in an unstable position. When raising a portion of the equipment, ensure that adequate support is provided.

### Cleanliness

- (1) The most important single item in preserving the long service life of a machine is to keep dirt and foreign materials out of the vital components. Precautions have been taken to safeguard against this. Shields, covers, seals, and filters are provided to keep air, fuel, and oil supplies clean; however, these items must be maintained on a scheduled basis in order to function properly.
- (2) At any time when air, fuel, or oil lines are disconnected, clean adjacent areas as well as the openings of fittings themselves. As soon as a line or component is disconnected, cap or cover all openings to prevent entry of foreign matter.
- (3) Clean and inspect all parts during servicing or maintenance, and ensure that all passages and openings are unobstructed. Cover all parts to keep them clean. Be sure all parts are clean before they are installed. New parts should remain in their containers until they are ready to be used.

### Components Removal and Installation

- (1) Use adjustable lifting devices, whenever possible, if mechanical assistance is required. All slings (chains, cables, etc.) should be parallel to each other and as near perpendicular as possible to top of part being lifted.

**MAINTENANCE PROCEDURES**

- (2) If a part resists removal, check to see whether all nuts, bolts, cables, brackets, wiring etc., have been removed and that no adjacent parts are interfering.

**Hydraulic Lines and Electrical Wiring**

Clearly mark or tag hydraulic lines and electrical wiring, as well as their receptacles when disconnecting or removing them from the unit. This will ensure that they are correctly reinstalled. Refer to electrical schematics when re-assembling to ensure correct wiring and connections are achieved.

**Hydraulic System**

- (1) Keep the system clean. If evidence of metal or rubber particles are found in the hydraulic system, drain and flush the entire system.
- (2) Disassemble and reassemble parts on a clean work surface. Clean all metal parts with a non-flammable cleaning solvent. Lubricate components as required to aid assembly.

**Lubrication & Servicing**

Components and assemblies requiring lubrication and servicing are listed in the machine's regular maintenance schedule.

Service applicable components with the amount, type and grade of lubricant recommended in this manual, at the specified intervals. When not available, consult your local supplier for an equivalent that meets or exceeds the specifications listed.

**Battery**

Clean battery, using a non-metallic brush and a solution of baking soda and water. Rinse with clean water. After cleaning, thoroughly dry battery and coat terminals with an anti-corrosion compound.

**MAINTENANCE PROCEDURES****CHANGING ENGINE OIL**

Refer to supplement manual on Kubota Diesel Engine for procedures relating to engine oil/filter changes.

**FLOODLIGHT LAMP CHANGE****⚠ DANGER**

**PRIOR TO ATTEMPTING TO REMOVE OR REPLACE THE LAMPS IN THE LAMP FITTINGS, ENSURE THAT THE ENGINE IS SHUT OFF AND THE GENERATOR IS NOT RUNNING.**

**⚠ DANGER**

Do not touch lamp terminals or sockets. Dangerous voltages may be present even when power is off. It is very important to switch off all circuit breakers, even though the engine has been shutdown. This isolates the ballast circuits from earth, preventing a shock hazard from either lamp terminal to earth. Allow 10 minutes for ballast capacitors to discharge before replacing lamps. Check capacitors are below 10VDC before service to lamp sockets or ballast circuits by trained service personnel only. Series ballast capacitor voltage can be measured across the lamp associated with that ballast using a 1000 VDC rated multimeter with 1000 VDC rated sharp tip probes.

**⚠ WARNING**

**THE LAMPS AND LAMP FITTINGS BECOME VERY HOT AFTER THEY HAVE BEEN RUNNING. PLEASE ALLOW FOR THE LAMP ASSEMBLY TO COOL TO AN ACCEPTABLE TEMPERATURE PRIOR TO ATTEMPTING ANY SERVICE WORK.**

Access to the metal halide lamp is through the front glass shield. Open the glass shield by unlatching the clip on either side of the glass and swinging the shield open on its hinges.

**IMPORTANT**

**APPLICABLE EYE PROTECTION AND GLOVES SHOULD BE WORN TO AVOID INJURY FROM BREAKING GLASS.**

Dislodge the lamp away from the spring-loaded contacts and remove the lamp from the fitting.

A new lamp is installed in the reverse order with particular attention paid to NOT touching or contaminating the surface of the lamp tube during the installation process.

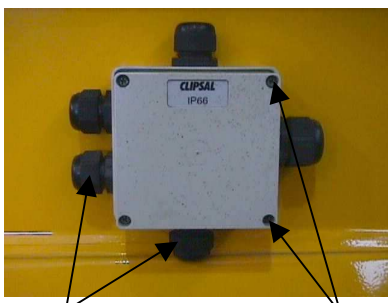
Ensure the tube is correctly seated on the spring contacts at each end.

Close the glass shield and latch on each side.

Start the engine, switch on the lamp and run the unit for 15 minutes to ensure lamp ignites and runs correctly.

**MAINTENANCE PROCEDURES****REMOVING FLOODLIGHT ASSEMBLY**

Prior to removing any of the 4 floodlight assemblies from the light bar, first remove the electrical lead connections at the light bar assembly junction box.



Cable Glands

Remove Screws

Open the lid of the junction box by removing the 4 screws. Locate the relevant B.P. connectors and loosen the wires.

Loosen the plastic cable gland clamp or steel conduit terminator as applicable and withdraw the wire from the gland.

Loosen and remove the nut on the lamp assembly attachment bolt and lower the lamp assembly away from the light bar.

Reinstallation is a reversal of the removal procedure.

**NOTE:** Ensure that the electrical wires are in good condition and reconnected correctly. Pay particular attention to the connection colours. Refer to the electrical schematic for guidance.

## MAINTENANCE PROCEDURES

### REMOVING MAST ASSEMBLY

#### **⚠ WARNING**

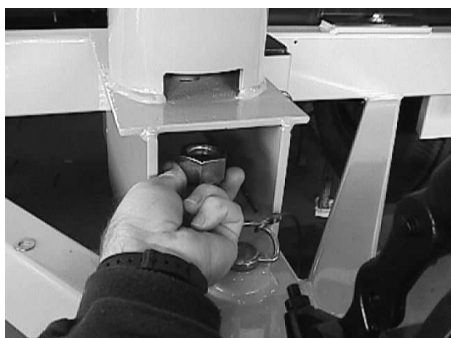
THE MAST ASSEMBLY ON THE LIGHTING TOWER HAS CONSIDERABLE WEIGHT. USE SUITABLE LIFTING DEVICES WHEN LIFTING HEAVY COMPONENTS. THE USE OF A CRANE AND SUITABLE SLING IS HIGHLY RECOMMENDED.

Prior to removal of the mast assembly, the following steps should be taken.

1. Remove the 4 floodlamp assemblies from the light bar as described earlier.
2. Disconnect and cap the hydraulic hoses at the base of the machine.
3. Disconnect the electrical cabling at the ballast compartment.



4. Loosen and remove the one inch UNC nyloc nut at the base of the mast assembly. Access to this nut is through the gap just above the draw bar at the mast pivot weldment. Take note not to lose the thrust washers as the mast is raised up.



**NOTE:** It is possible to remove the mast assembly with all light assemblies attached, however, the risk of damage to the front glass of the light is possible.

### REPLACEMENT OF AC CIRCUIT BREAKER

#### **⚠ DANGER**

LETHAL VOLTAGES ARE PRESENT WITHIN THE LIGHT CONTROL BOX ENSURE ENGINE/GENERATOR IS SHUTDOWN PRIOR TO CARRYING OUT ANY ELECTRICAL WORK OR REMOVING ANY PROTECTIVE COVERS.

Remove the cover to the light control box which houses the main circuit breaker R.C.D. by loosening the 4 cover mounting screws.

Loosen the screw clamp terminals and remove the wires from the terminals.

With the aid of a flat bladed screw driver, dislodge the clip holding the circuit breaker onto the din rail and remove the breaker from the box.

Replacement of the circuit breaker involves clipping the new breaker into place on the din rail and reconnecting the wires.

## MAINTENANCE PROCEDURES

### REMOVE/REPLACEMENT OF LAMP BALLASTS

## IMPORTANT

Please read danger and warnings on page 2-8 prior to proceeding.

The lamp ballasts are located behind the front cover of the lighting tower frame.

- First remove the cover by removing the TEK screws holding the cover in place. This will expose the Ballast assemblies.



Ballast  
Assembly x 4

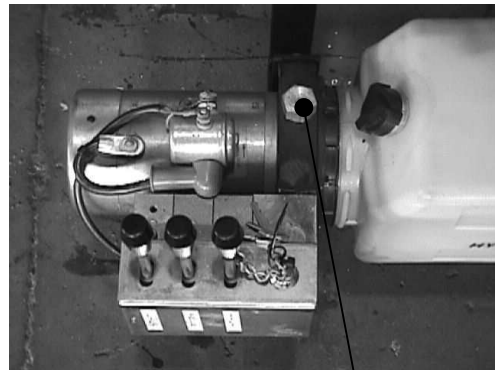
TEK  
Screws

- Take a note of the wire connections to the ballast to be removed and loosen the screw terminals and remove the wires.
- Loosen and remove the 5/16" nyloc nut holding the top of the ballast in place. Remove the washer and tilt the top of the ballast forward.
- Lift the ballast assembly up and out of the lower mounting slot, taking note that the ballast is reasonably heavy.
- Replacement is a reversal of the above removal procedure.

### SETTING HYDRAULIC OIL PRESSURE

The hydraulic oil operating pressure is set to 17.23 MPA or 2500PSI.

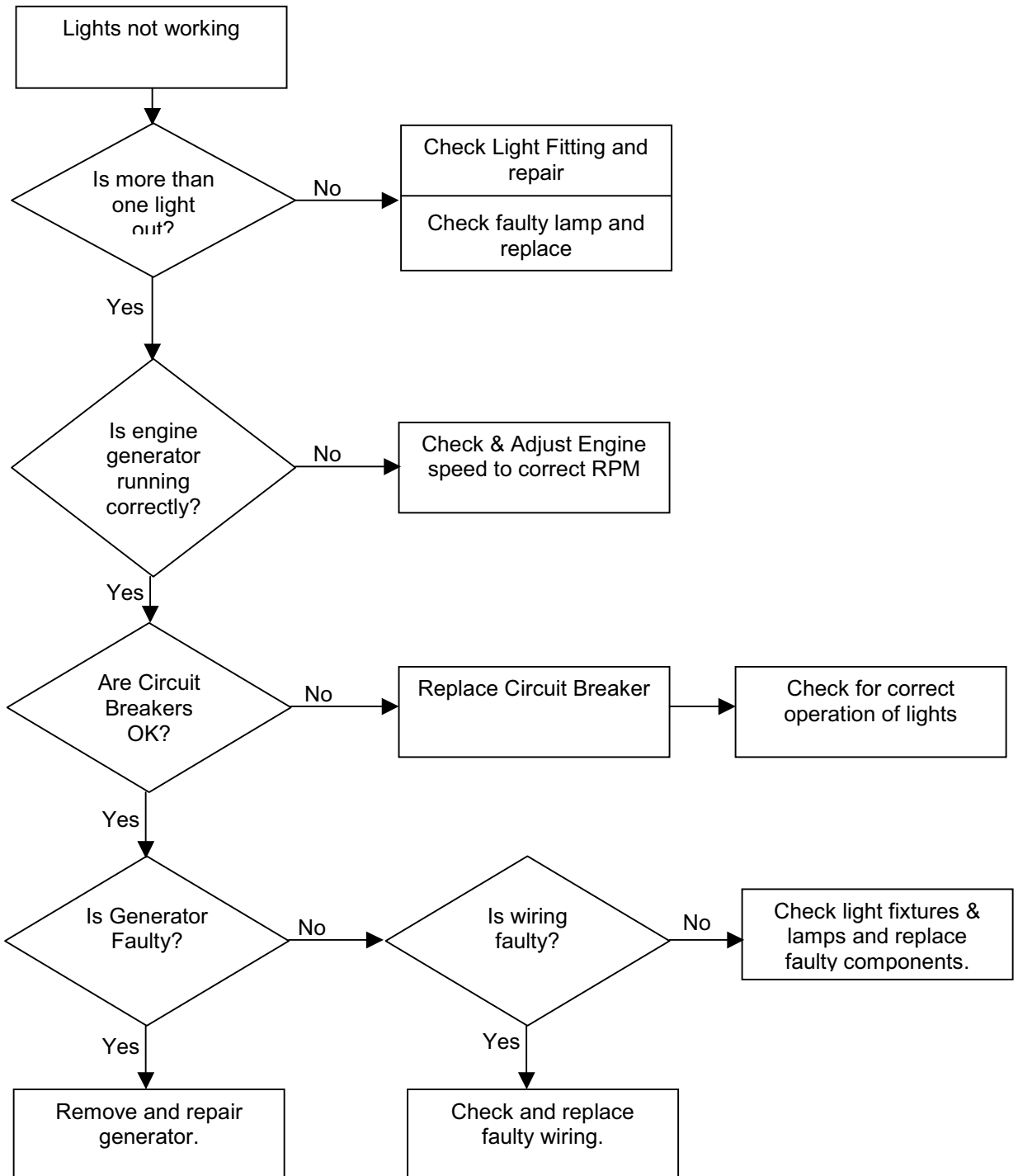
The pressure is set by adjusting the system relief valve located on the pump/motor assembly.



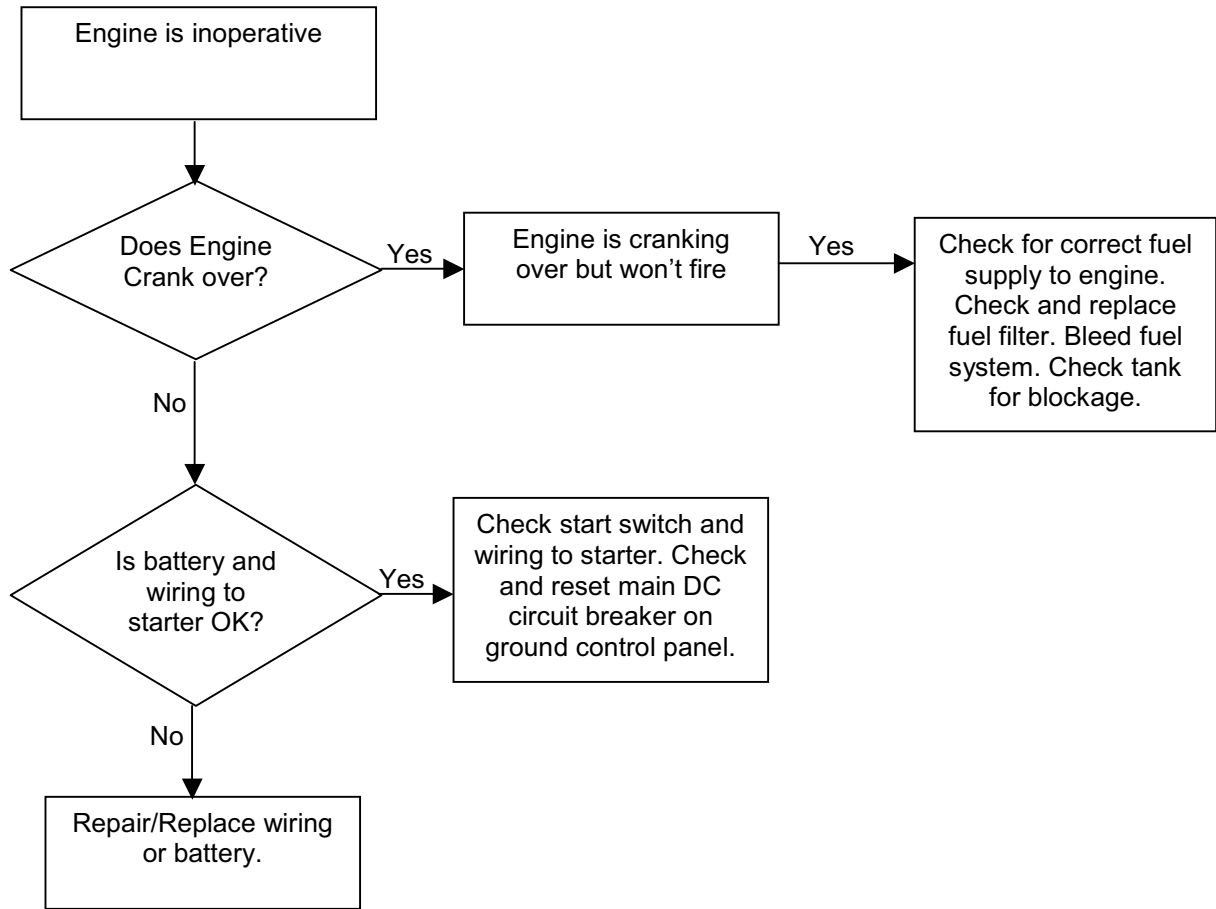
System Pressure Adjustment.

- Remove the Hex cap cover from the valve.
- Connect a suitable pressure gauge to the lift up circuit.
- Operate and bottom out the lift up function.
- While monitoring the pressure gauge continue to operate the lift up function.
- Set the relief valve to the pressure specified above.
- Remove gauge. Reinstall protective cap on relief valve and check system operation.

**FAULT DIAGNOSIS CHART**  
**Lights and Generator Circuit**



**FAULT DIAGNOSIS CHART**  
**Engine**



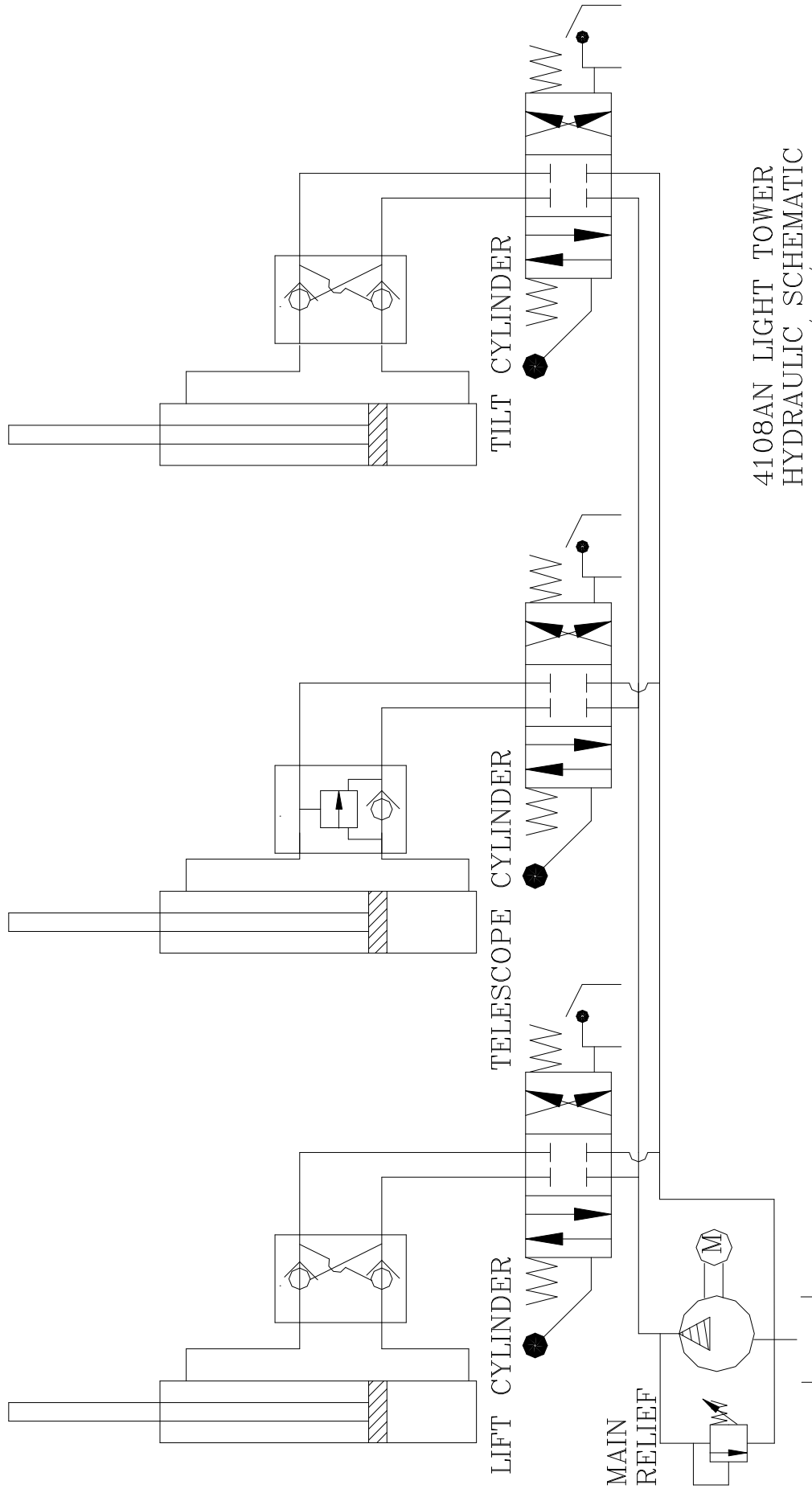


**REGULAR MAINTENANCE SCHEDULE**

Item	Daily	50hrs	100hrs	200hrs	400hrs	500hrs	Yearly	1500hrs	3000hrs
Check Engine Oil Level	•								
Check Radiator Coolant Level	•								
Check Machine for damage/leaks	•								
Check Decals Legible	•								
Check all controls function as per manual	•								
Check RCD operation			•						
Change Engine oil		*		•					
Check tyre pressure		•							
Clean Air Cleaner element			•						
Check battery water level			•						
Check fan belt tightness			•						
Check radiator hoses clamps				•					
Replace oil filter cartridge					•				
Replace fuel filter cartridge					•				
Drain clean fuel tank. Clean & flush radiator cooling system. Replace fan belt						• • •			
Replace Air cleaner element. Check valve clearance. Check fuel injection for correct operation. Check fuel injection pump. Bleed brake hydraulic system.							• •	• • •	
Mast rotate mechanism lift/tilt cylinder bushes grease.					•				
Stabiliser legs locking pins – check free operation, lubricate with WD40 or equivalent.				•					
Check mast pins bushings for wear.						•			
Check fuel injection timer									•
Check tow hitch and safety chains for secure operation				•					
Check chassis frame for cracks and damage.						•			
Check alternator, bearings, mounts.							•		
Check tyres for wear, splits, damage.				•					
Visual check of all electrical wires and connections for damage.				•					

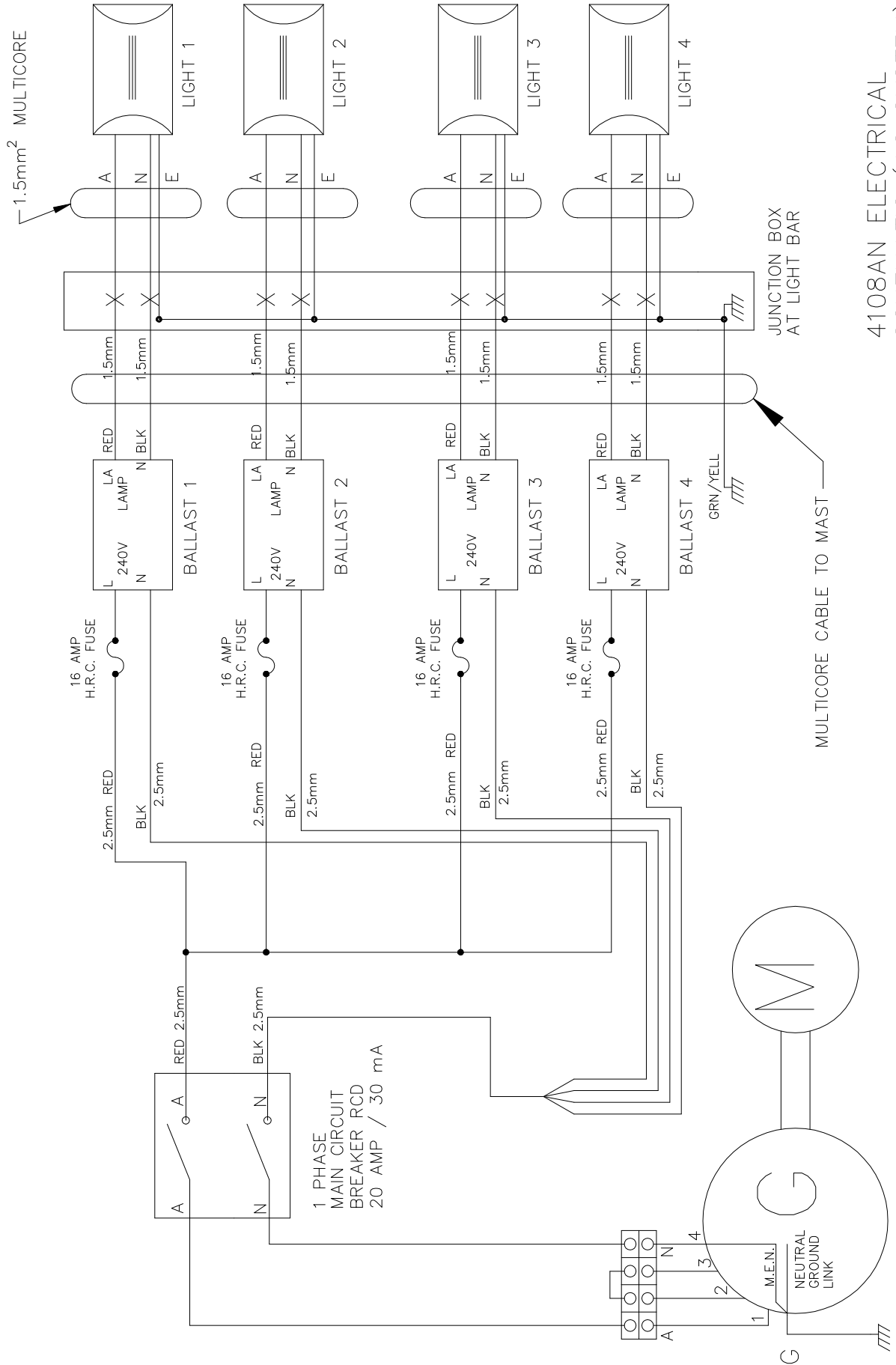
\* 1<sup>st</sup> oil change after 50hrs, subsequent oil changes at every 200hrs.

**HYDRAULIC SCHEMATIC**



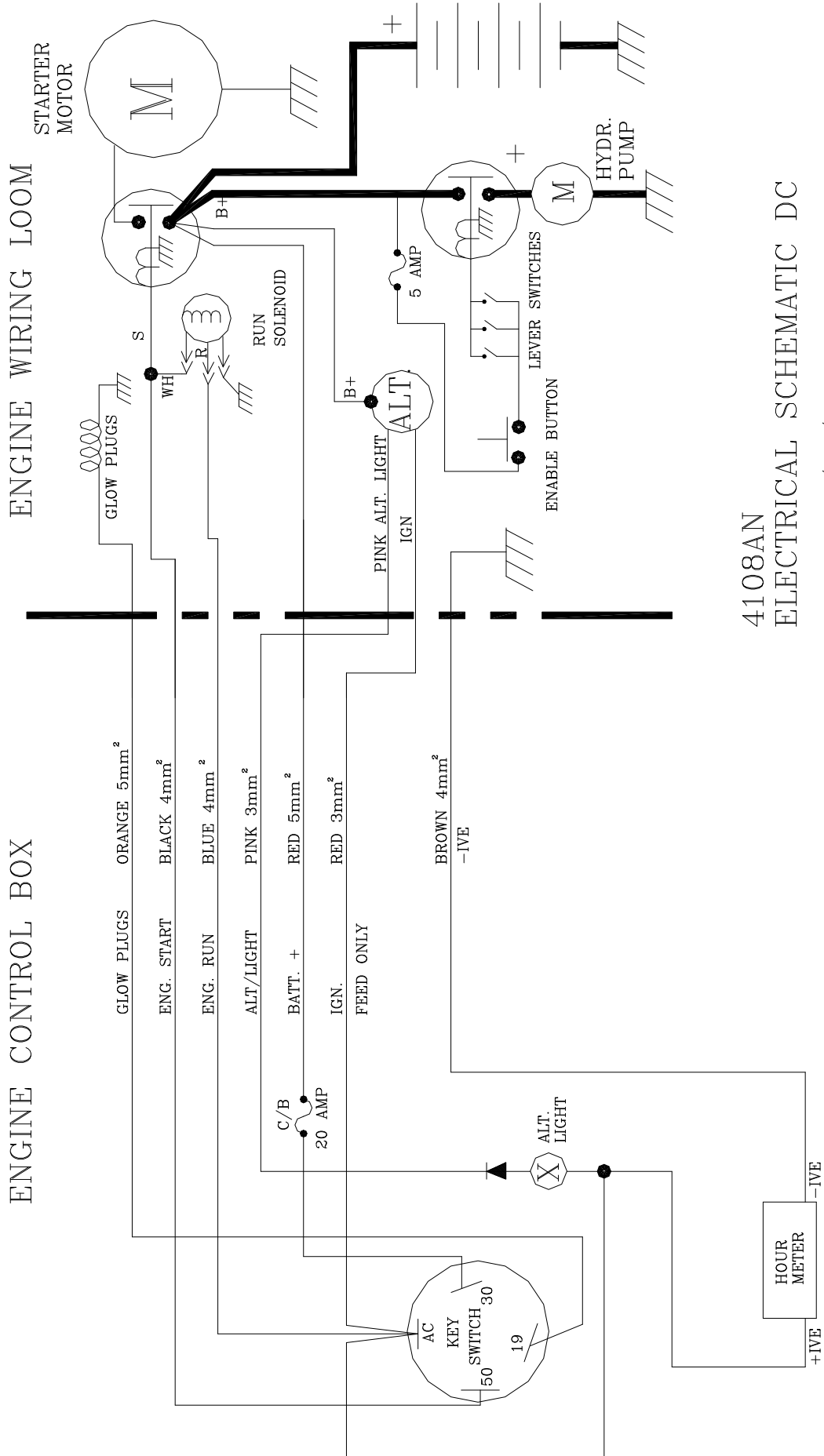
4108AN LIGHT TOWER  
HYDRAULIC SCHEMATIC  
DRAWN 19/01/04

**ELECTRICAL SCHEMATIC**



4108AN ELECTRICAL SCHEMATIC (AC SYSTEM)  
DRAWN 13/02/04

**ENGINE CONTROL BOX/ENGINE WIRING LOOM**



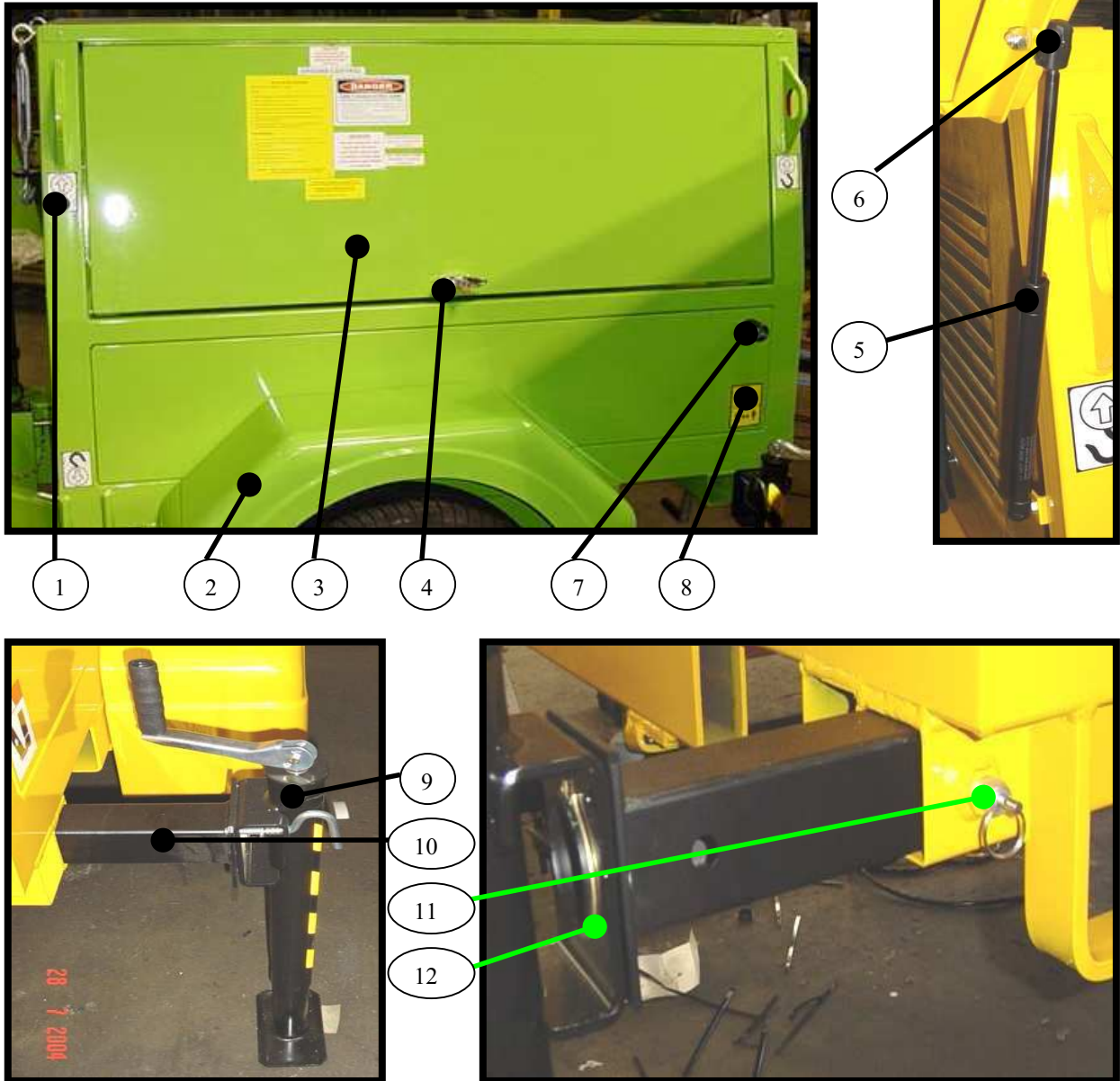
4108AN  
ELECTRICAL SCHEMATIC DC  
DRAWN 19/01/04

# SECTION TWO

## ILLUSTRATED PARTS MANUAL

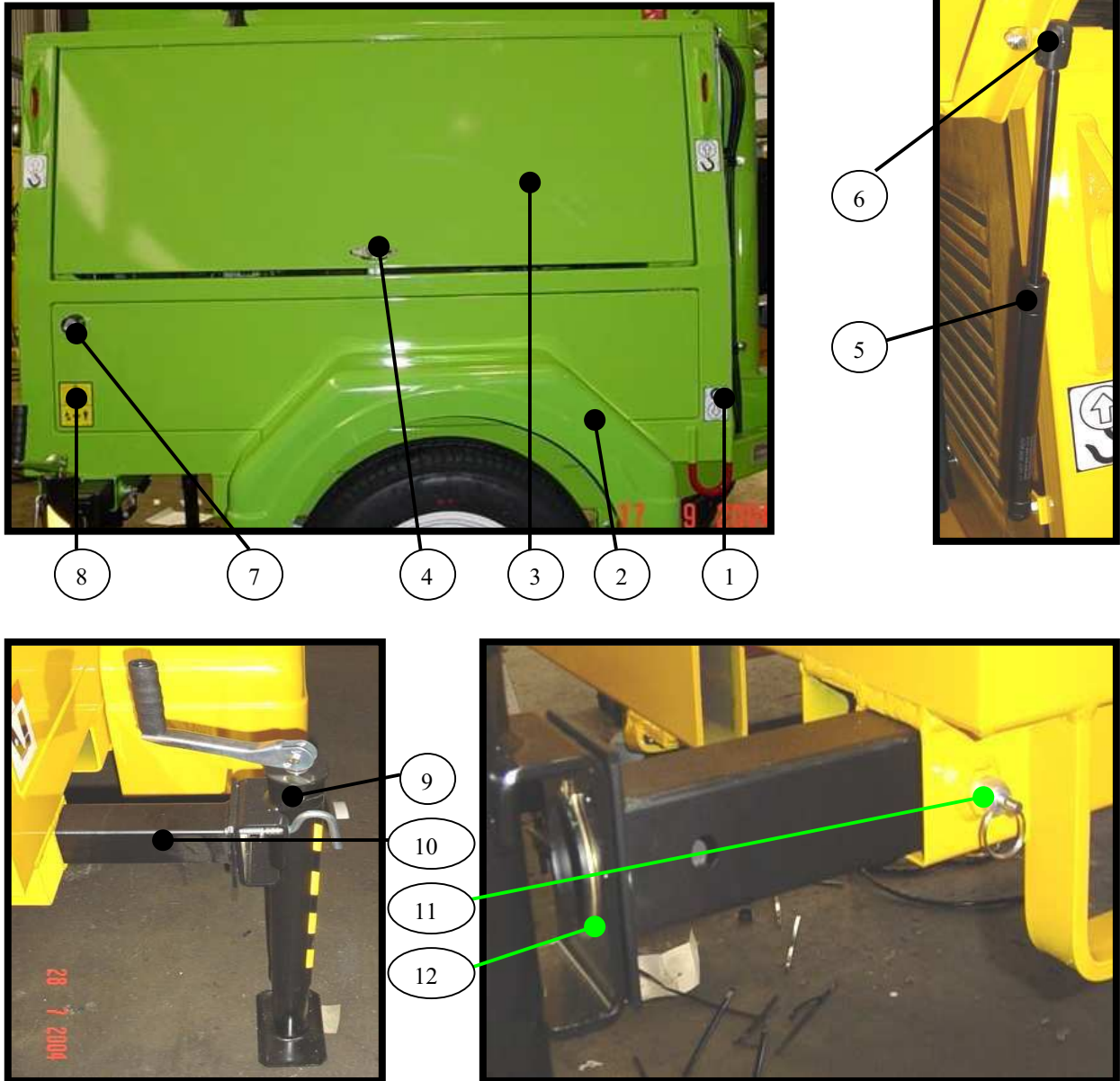
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**MACHINE LEFT SIDE VIEW**



Item	Part Number	Qty	Description of Part
1	1701500	3	Decal Lift / Tie Down Point
2	1730911	1	Mudguard RH Side
3	1730611	1	Door Assembly LH Side
4	1730529	1	'T' Handle Lock Door
	1730790	1	'T' Handle Locking Tab
5	A330435	1	Gas Strut Door
6	A330437	1	Ball Stud for Gas Spring
7	1730750	2	Block Stop Stabiliser Stowage
8	1701785	1	Crushing Hazard
9	A330010	1	Outrigger Side Rear Jack Assembly
10	1730533	1	Outrigger Side Rear Extension Arm
11	3422369	1	Outrigger Extension Arm Lock Pin
12	A330009	1	Jack Mounting Bracket
13	1734110	1	Wheel Rim Only (Not Shown)

**MACHINE RIGHT SIDE VIEW**



Item	Part Number	Qty	Description of Part
1	1701500	3	Decal Lift / Tie Down Point
2	1730911	1	Mudguard RH Side
3	1730611	1	Door Assembly LH Side
4	1730529	1	'T' Handle Lock Door
	1730790	1	'T' Handle Locking Tab
5	A330435	1	Gas Strut Door
6	A330437	1	Ball Stud for Gas Spring
7	1730750	2	Block Stop Stabiliser Stowage
8	1701785	1	Crushing Hazard
9	A330010	1	Outrigger Side Rear Jack Assembly
10	1730533	1	Outrigger Side Rear Extension Arm
11	3422369	1	Outrigger Extension Arm Lock Pin
12	A330009	1	Jack Mounting Bracket
13	1734110	1	Wheel Rim Only (Not Shown)

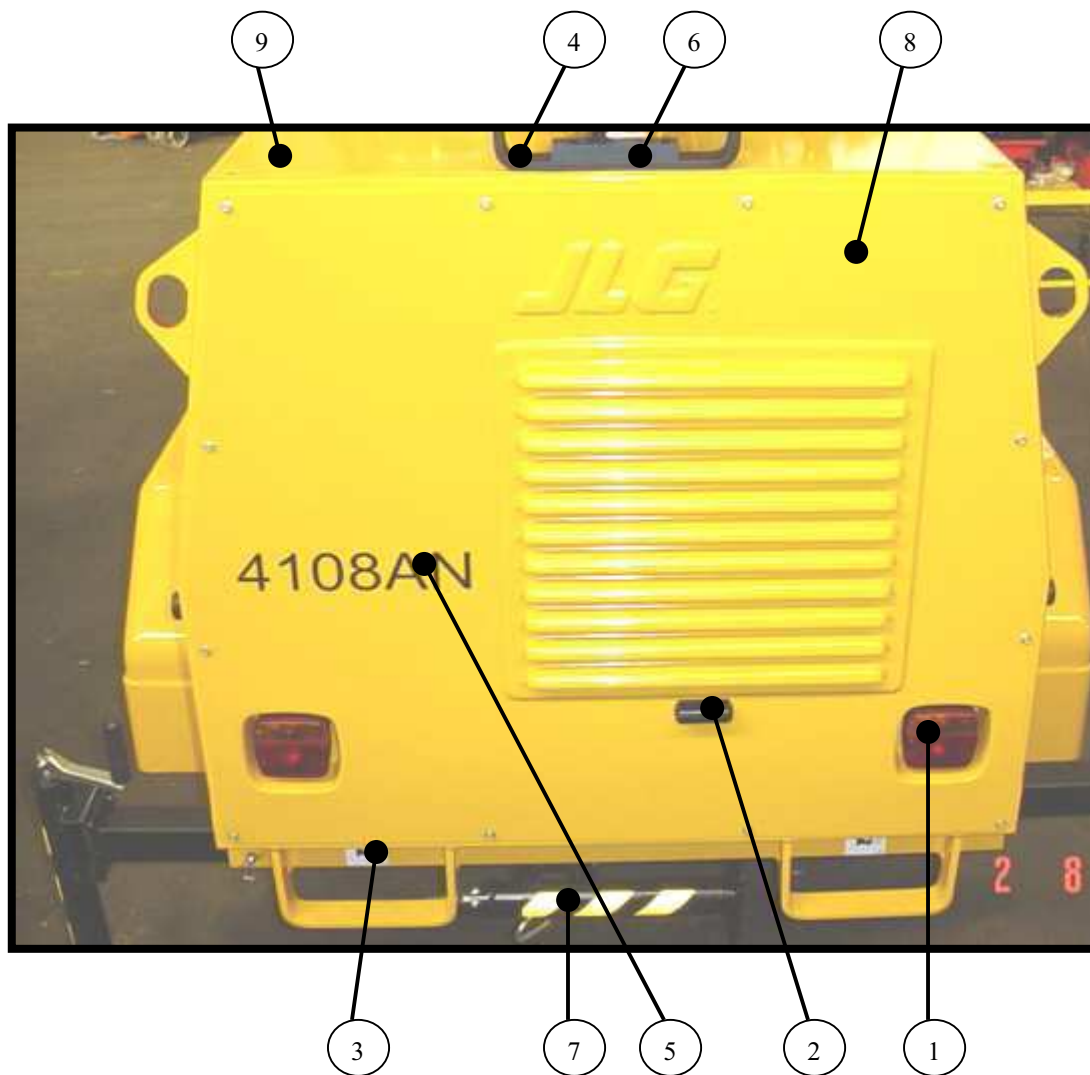
**MACHINE FRONT VIEW**



Item	Part Number	Qty	Description of Part
1	A620550	1	Mast Rotate Locking Knob
2	1730599	1	Decal – Maximum Voltage Within Enclosure
3	1730781	1	Transport Leg Locking Pin
4	1730580	1	Transport Leg Weldment
5	1737103	1	Decal Vin Plate Identification
6	1730747	1	Decal Mast Rotation Lock
7	1730797	1	Mast Rotate Handle Grip
8	1730759	2	Eye Bolt
9	1730760	2	Turn Buckle
10	1730773	2	Rubber Bumper Turnbuckle
11	1730723	1	Decal ‘Designed and Manufactured by JLG’ (Not shown)
12	1730607	1	Front Panel
13	1733106	1	Level Bubble Gauge.
14	3422744	1	Mast Positioning Lock Pin
15	1734120	1	Muffler Pipe



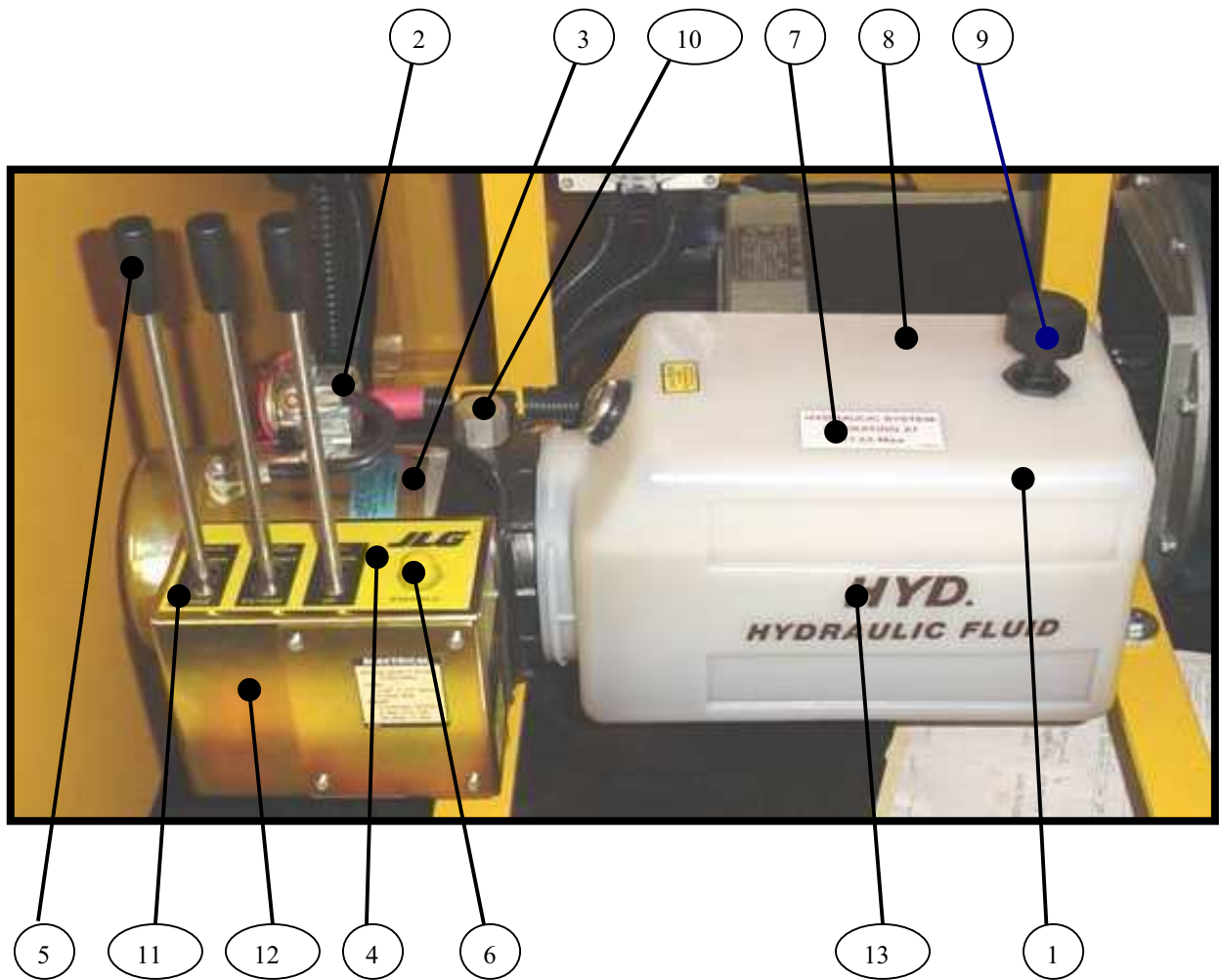
**MACHINE REAR VIEW**



Item	Part Number	Qty	Description of Part
1	1733618	2	Tail Light Assembly
	1733979	1	Lamp Bulb 12V Low
	1733980	1	Lamp Bulb 12V 21/5W
2	1730593	1	Number Plate Light Narva
3	1703073	2	Decal Forklift Point
4	1730534	1	Mast Support Cradle
5	1730617	1	Decal 4108AN
6	3340446	1	Pad Wear
7	1730777	1	Rear Outrigger Jack
8	1730608	1	Rear Panel
9	1730908	1	Roof Panel

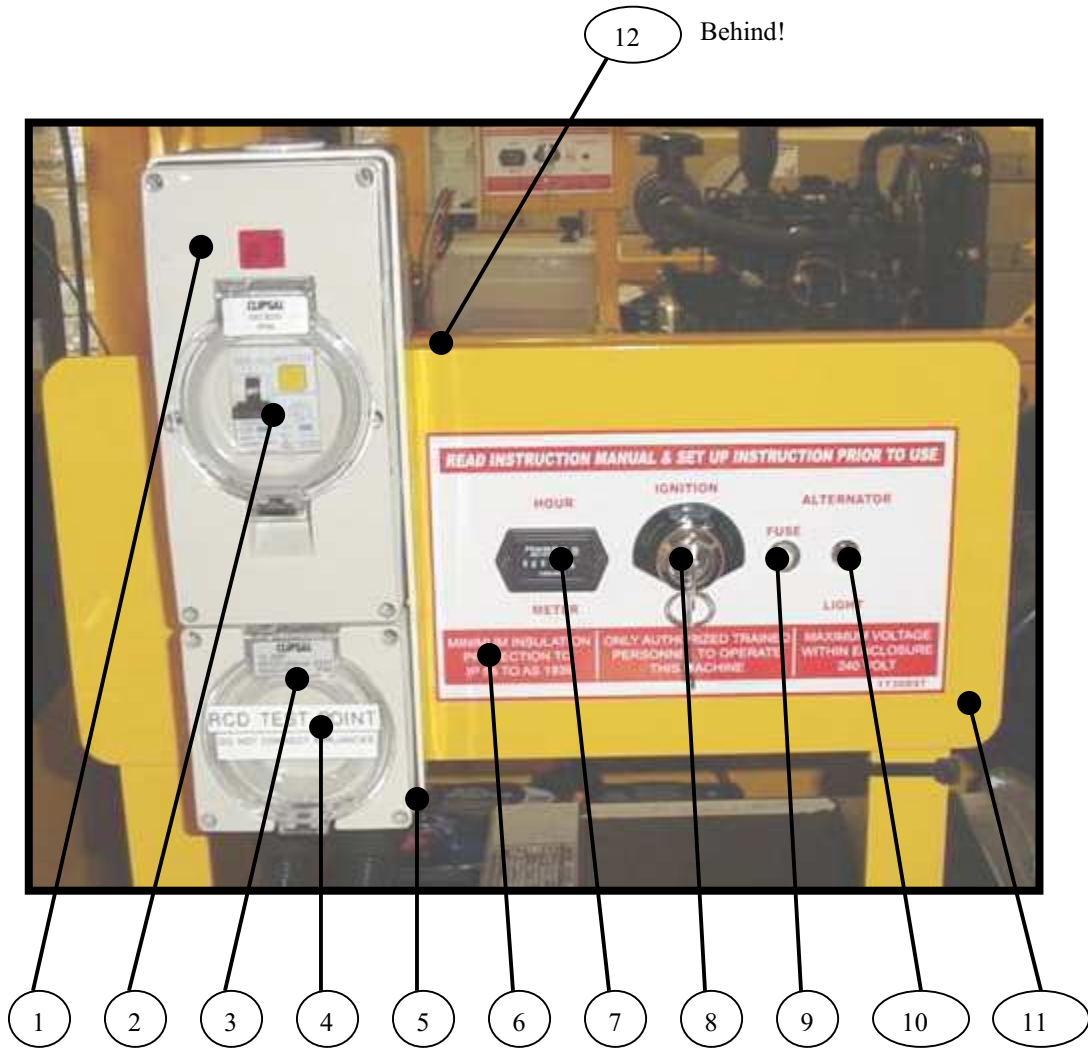
Note: For exterior panels, please stipulate colour upon placement of order.

**MAST HYDRAULIC CONTROLS AND PUMP**



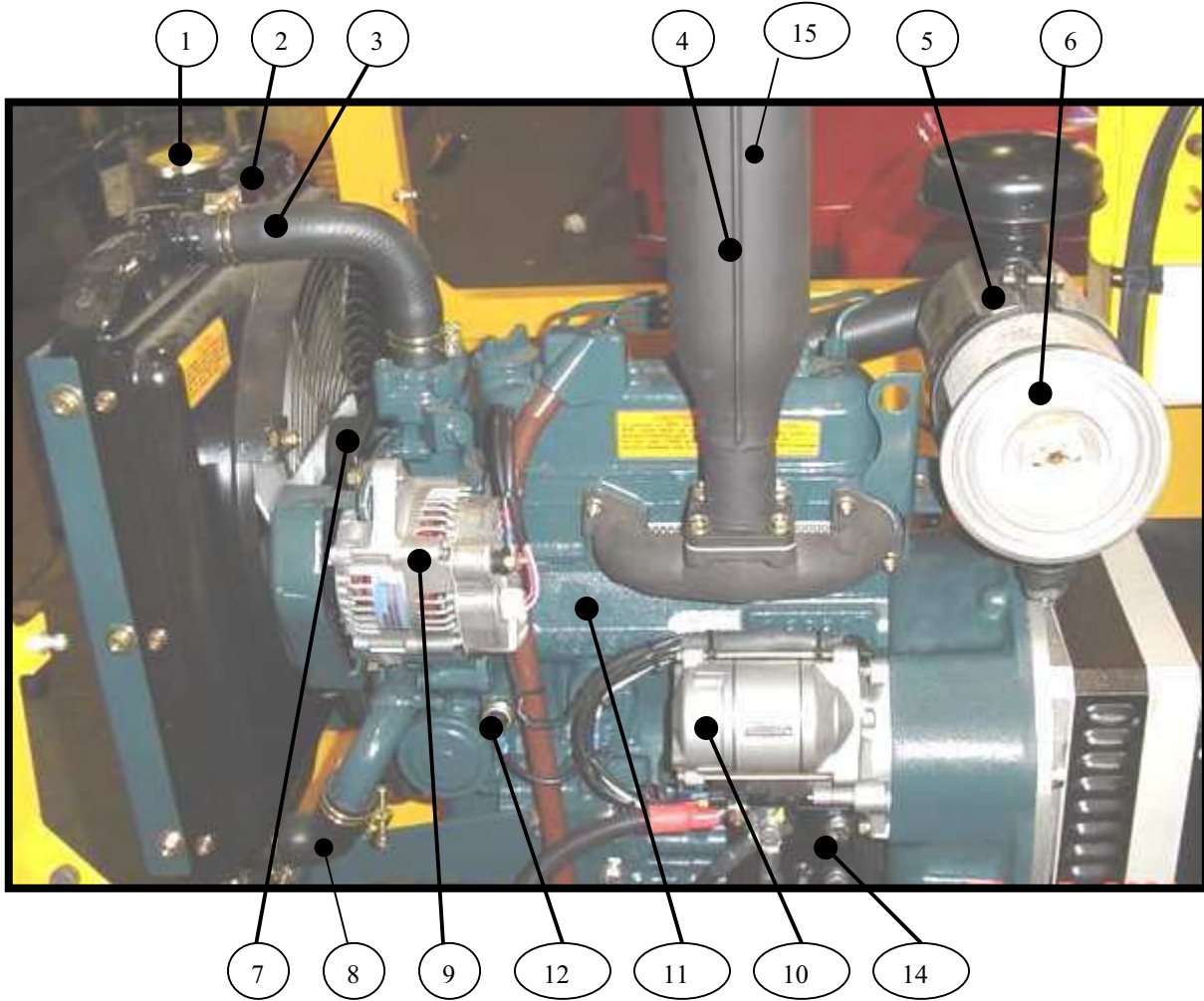
Item	Part Number	Qty	Description of Part
1	1730543	1	Power Pack Assembly Complete Fenner
2	1730549	1	Solenoid Motor Run 12V
3	1730583	1	Electric Motor
4	1730726	1	Decal – Lift, Tele, Tilt – for Hydraulic Controls
5	1730548	3	Control Lever with Knob
6	4360387	1	Switch Pushbutton. Hydraulic Enable.
7	1730547	1	Decal – Hydraulic System Operating at 17.23MPa
8	1730854	1	Oil Reservoir
9	1730855	1	Filler/Breather Cap
10	1730856	1	Relief Valve Kit/ Includes relief valve, Load Check and Plug
11	1730857	3	Complete Actuator Assembly (includes handle actuator block, boot, spring mechanism, switch and spool)
	1730858	3	Boot kit (includes boot, boot gland and boot spring)
	1730859	3	Handle Actuator Switch Kit (includes switch, mounting plate and screws)
12	1730860	1	Metal Valve Cover
13	1700419	1	Decal Hydraulic Fluid

**ELECTRICAL CONTROL PANEL, ENGINE & LIGHTS**



Item	Part Number	Qty	Description of Part
1	1750106	1	Cover Assembly Electrical With Neon
2	1730958	1	RCD Double Pole
3	1734793	1	Switched Socket Outlet
4	1730925	1	Decal, RCD Test Point Only
5	1750104	1	Box Mounting Enclosure 3 Gang
6	1730897	1	Decal Ground Control, 4108AN
7	2420165	1	Gauge Hourmeter
8	1730540 1732656	1	Switch, Keyed Ignition (Option) Lucas Ignition Switch
9	4360161	1	Circuit Breaker 20 Amp
10	1730926	1	Lamp Assembly Alternator
11	1730899	1	Mounting Panel, Electrical Controls 4108AN
12	3740049	1	Relay 30Amp ( Located on back of panel )
	1730700	1	Timer (Option)(Not Shown)
	1734128	1	Timer Bracket (Not Shown)
	1734146	1	Kit Timer (With Light Shutoff Relay)(Not Shown)

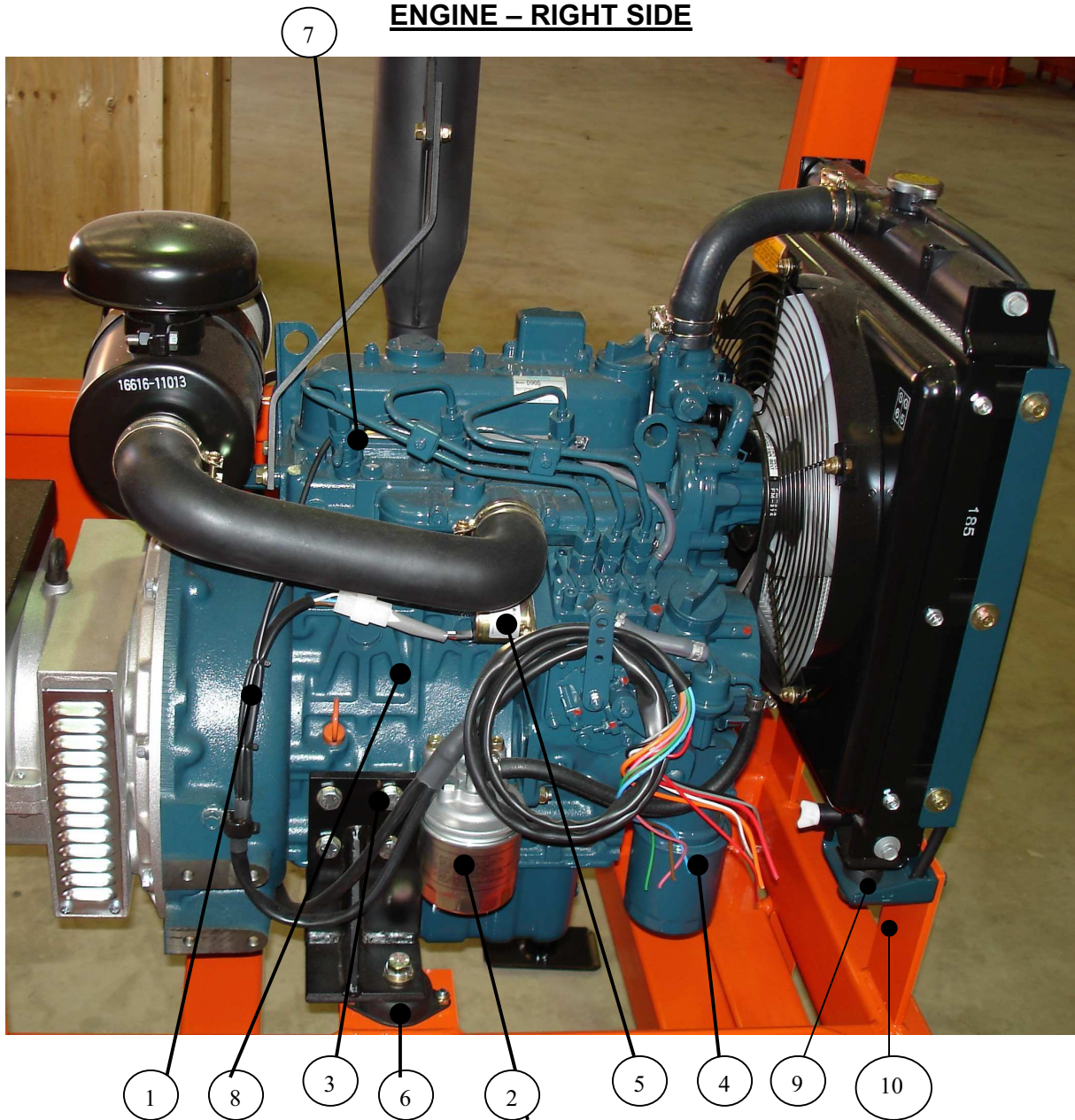
**ENGINE - LEFT SIDE**



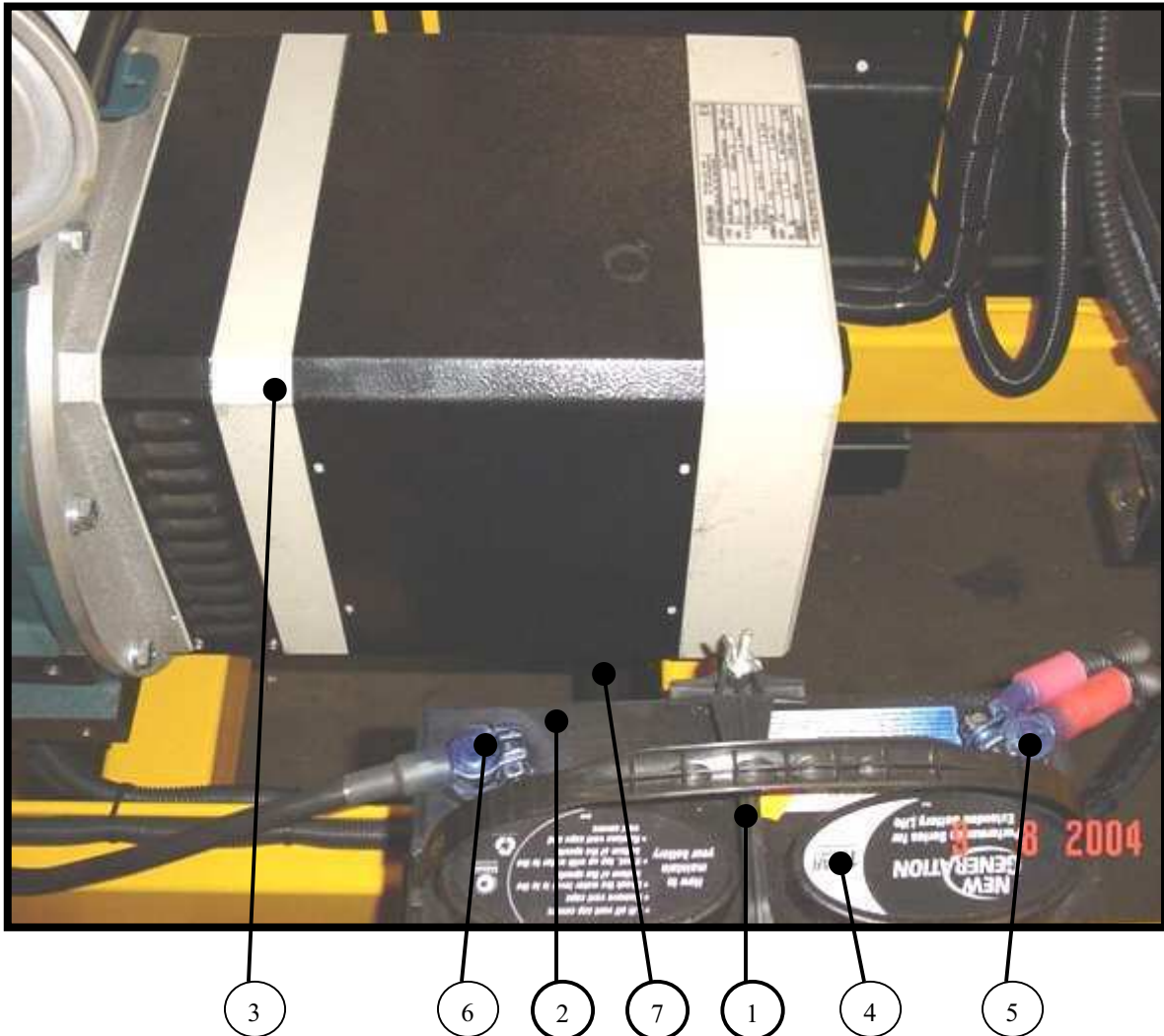
<b>Item</b>	<b>Part Number</b>	<b>Qty</b>	<b>Description of Part</b>
1	1730562	1	Radiator Cap Overflow. Carparts N1000
2	1730953	1	Radiator D905
3	1730954	1	Radiator Hose Top D905
4	1730965	1	Muffler D905
5	1730964	1	Air Cleaner Assembly D905
6	1730963	1	Air Filter Element D905
7	1730962	1	Fan Belt D905
8	1730962	1	Radiator Hose Lower D905
9	1730956	1	Alternator. Denso D905
10	1730871	1	Starter Motor D905
11	1730905	1	Engine Kubota D905
12	1730874	1	Oil Pressure Sender D905
13	1734120	1	Muffler Pipe (Not Shown)
14	1730932	1	Mount Engine RH D905
15	1730965	1	Muffler



**ENGINE – RIGHT SIDE**

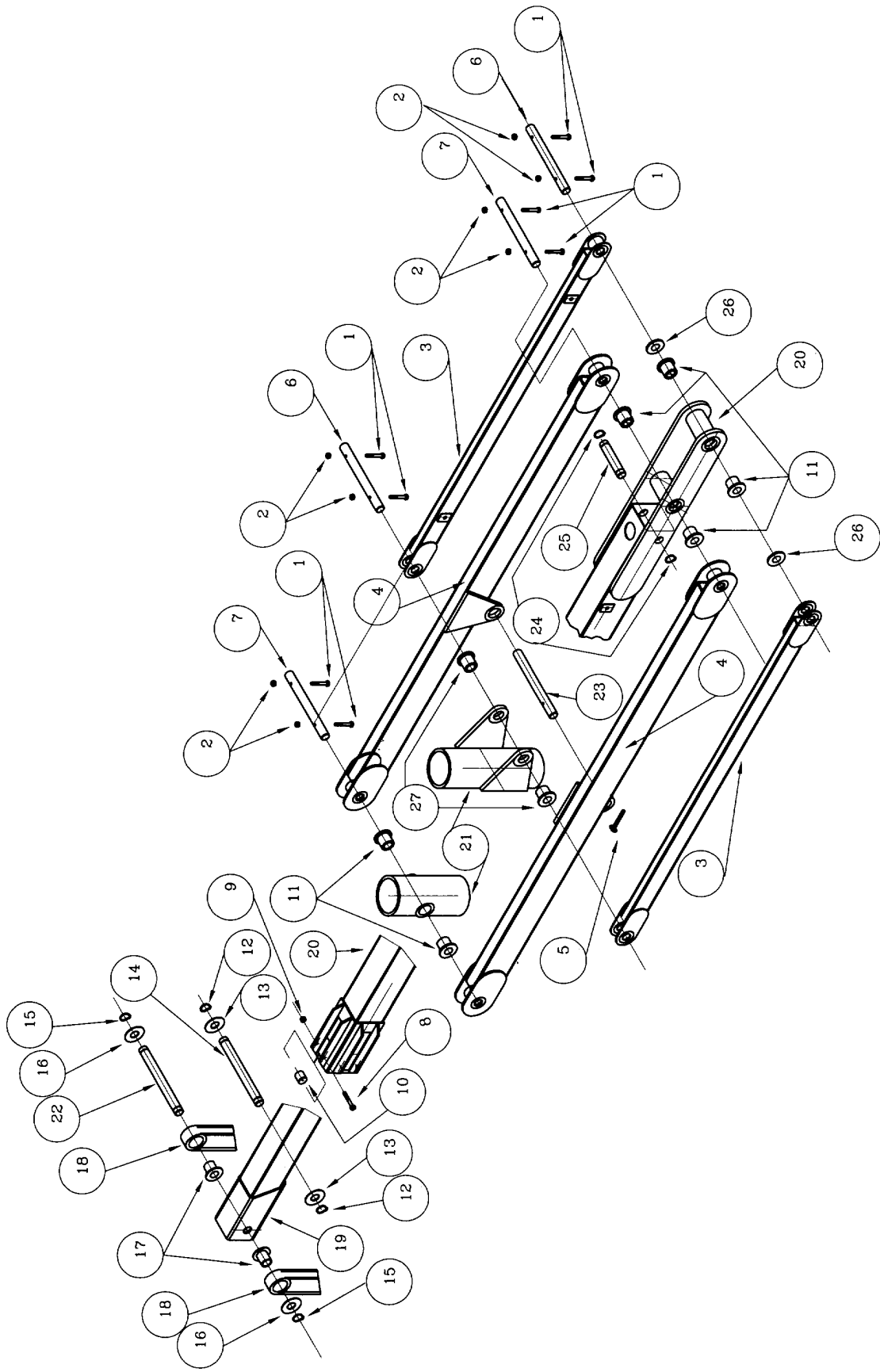


Item	Part Number	Qty	Description of Part
1	1730931	1	Engine Loom
2	1730930	1	Filter Fuel D905
3	1730933	1	Engine Mount LH D905
4	2120929	1	Filter Oil D905
5	1730966	1	Solenoid Engine Run D905
6	1730595	3	Rubber Mount Front For Item 3
7	1730935	3	Glow Plugs D905
8	1730905	1	Engine Kubota D905
9	1734130	2	Bracket Radiator Mount
10	1734118	2	Bracket Radiator

**ALTERNATOR ASSEMBLY**

Item	Part Number	Qty	Description of Part
1	1730727	1	Battery Clamp
2	0400003	1	Battery 12 Volt N70ZZ
3	1730904 1734133	1	Alternator. MECC-ALTE. Model C2-180/4 (up to 4108AN166) Alternator. Sincro (4108AN166 to Present)
4	1731207	1	Battery Tray Standard (not shown)
	1730861	1	Battery Box Enclosure (option) (not shown)
5	1738283	1	Terminal Battery Lug Positive
6	1738284	1	Terminal Battery Lug Negative
7	1730233	1	Mount Alternator
8	1730595	1	Mount Engine Rubber (Not Shown)
9	1730361	1	Capacitor (Not Shown)

**MAST ASSEMBLY**

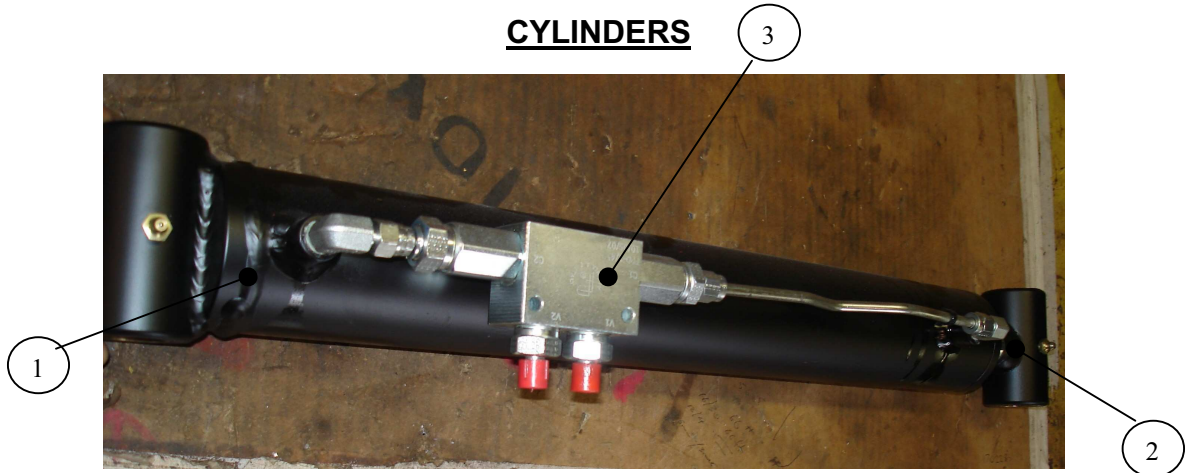


**MAST ASSEMBLY**

<b>Item</b>	<b>Part Number</b>	<b>Qty</b>	<b>Description of Part</b>
1	N/A	8	Bolt ¼” x 2” lng
2	N/A	8	Nut ¼” Nyloc
3	1730515	1	Outer Arm, 1 piece
4	1730514	2	Inner arm
5	3841143	1	Clevis Yoke Keeper Pin
6	1730505	2	Pin SS 255 mm lng.
7	1730612	2	Pin SS 280 mm lng
8	N/A	1	Bolt 5/16” x 2¾” lng
9	N/A	1	Nut 5/16”: Nyloc
10	1730710	4	Roller
11	1730511	6	Bush Bales P/N BE5988
12	7011716	2	Circlip
13	N/A	2	Washer
14	1730613	2	Pin 150 mm lng
15	7011716	2	Circlip
16	1730522	2	Spacer (Steel) Bales P/N BE5982
17	1730615	2	Bush (Brass) Bales P/N BE5991
18	1730525	1	Light Bar
19	1730516	1	Inner Mast
20	1730517	1	Outer Mast
21	1730518	1	Inner Mast Support
22	1730508	1	Pin SS 205 mm lng
23	1730614	1	Pin SS 185 mm lng
24	7011716	2	Circlip
25	1730510	1	Pin SS 134 mm lng
26	1730523	2	Spacer (Brass)
27	1730513	2	Bush (Brass)
The following items are part of the mast assembly, but are not illustrated.			
	3340446	1	Wear Pad, main boom
	1180302	1	Cable Cattrak
	1730610	4	Cattrack Anchor Bracket
	1730589	1	Tube Steel Cable Carrier
	1730590	1	Lift Cylinder
	1730591	1	Telescope Cylinder
	1730592	1	Tilt Cylinder
	1730634	2	Dual Pilot Check Valve Lift/Tilt Cylinder
	4640438	1	Holding Valve Telescope Cylinder
	4740418	2	Thrust Washer Mast Base
	N/A	1	1” Nut Whitworth Nyloc
	0940049	1	Rubber Bump Stop Mast
	A620550	1	Locking Knob Mast Rotate
	3422369	1	Mast Locking Pin
	1730814	1	Steel Cap Inner Mast 100 x 100
	1735514	14	STAUFF 2 x 12mm Plastic Clamp (option)
	1737913	5	STAUFF Steel Clamp Plate (option)
	1737914	5	STAUFF Clamp Base Plate (option)
	1702009	3	Decal ‘JLG’ 3½”
	A713055	1	Rubber Bumper, Mast Park



**CYLINDERS**



**Lift Cylinder**

Item	Part Number	Qty	Description of Part
	1730590	1	Complete Lift Cylinder
1	1730839	1	Barrel – Lift Cylinder
2	1730840	1	Rod – Lift Cylinder
3	1730634	1	Double Pilot Check Valve
	1730841	1	Seal Kit – Lift/Tilt Cylinder (Not Shown)

**Tilt Cylinder**

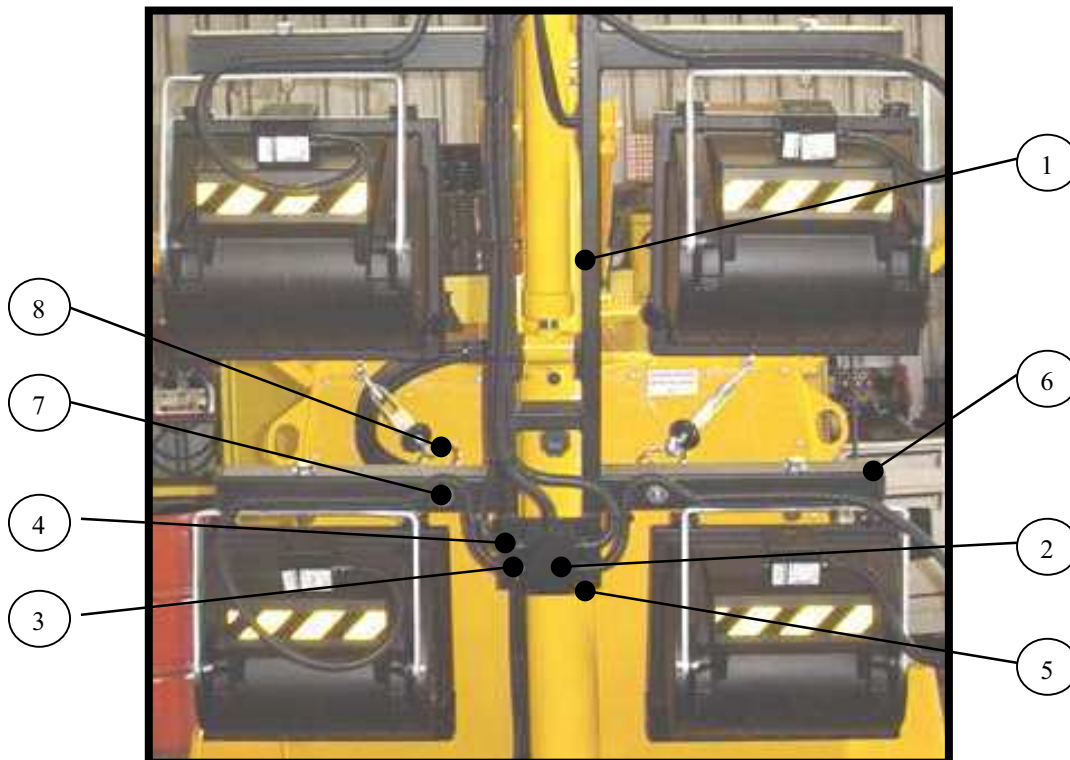
Item	Part Number	Qty	Description of Part
	1730592	1	Complete Tilt Cylinder
1	1730845	1	Barrel – Tilt Cylinder
2	1730846	1	Rod – Tilt Cylinder
3	1730634	1	Double Pilot Check Valve
	1730841	1	Seal Kit – Lift/Tilt Cylinder (Not Shown)



**Tele Cylinder**

	Part Number	Qty	Description of Part
	1730591	1	Complete Tilt Cylinder
1	1730842	1	Barrel – Tele Cylinder
2	1730843	1	Rod – Tele Cylinder
3	4640438	1	Check Valve
	1730844	1	Seal Kit – Tele Cylinder (Not Shown)

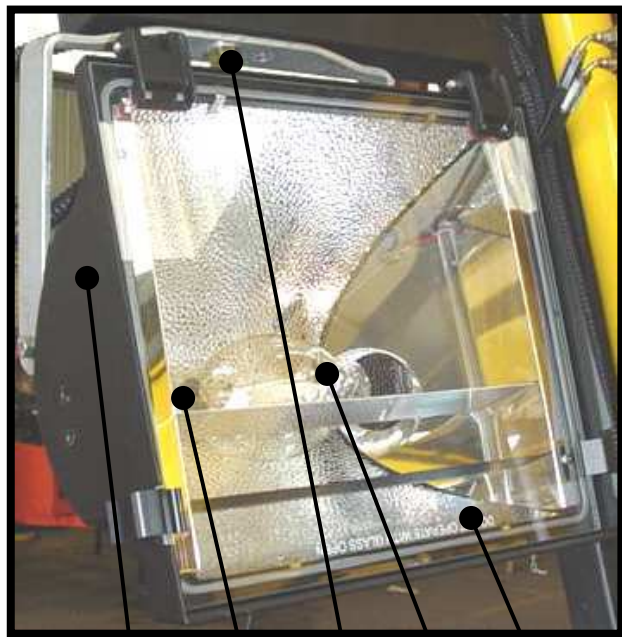
**LIGHT BAR ASSEMBLY**



Item	Part Number	Qty	Description of Part
1	1730525	1	Weldment Light Bar Assembly with tie bars
2	1730834	1	Junction Box with Lid
3	1730746	5	Adaptasteel Terminator Straight XTM20 OD20
4	1730732	1	Terminal Line Bar Rexel BPML5 Earth Link
5	1730813	2	Plastic Cap 65 x 35
6	1730812	4	Plastic Cap 65 x 65
7	1730759	4	Eye Bolt
8	1730758	2	Ring 75mm

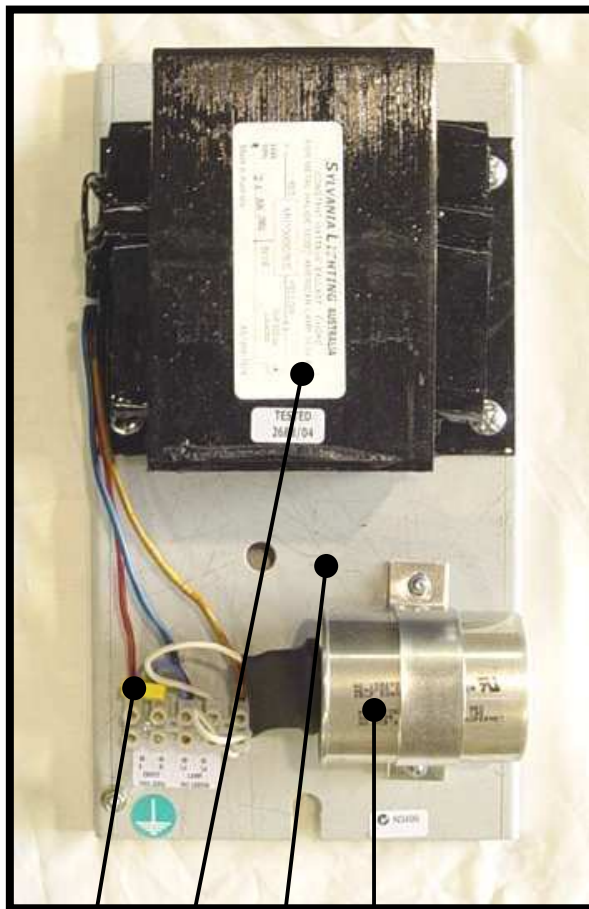
**FLOODLIGHT ASSEMBLY**

**LAMP**



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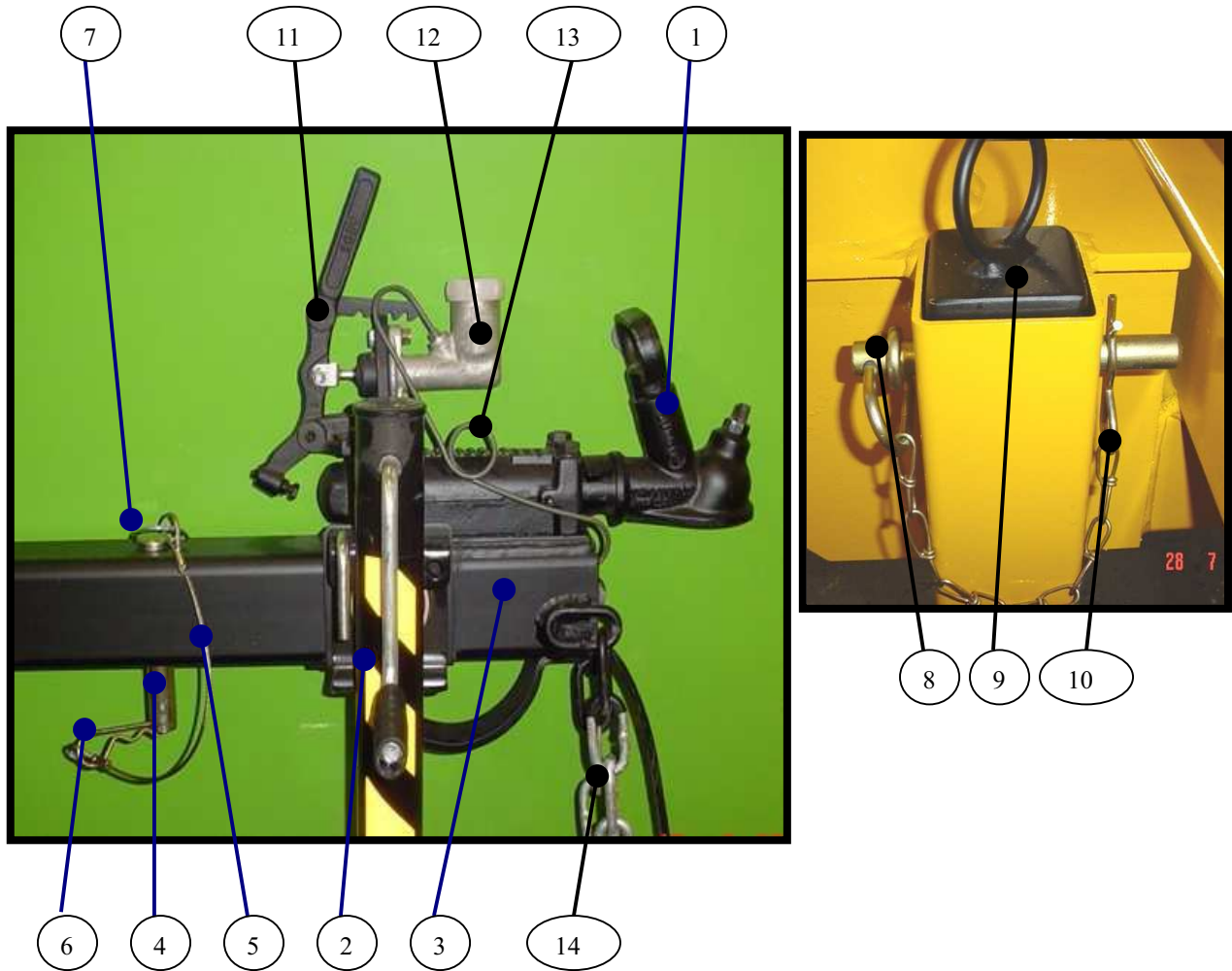
**BALLAST**



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Item	Part Number	Qty	Description of Part
1	1730993	4	Sylvania Briteline 2000 Metal Halide Lamp Assy
2	1730995	4	Metal Halide 1000 Watt Lamp M1000/U/BT37
3	1730588	4	Ballast Transformer MH1000CW/C 240V 50HZ
4	1730937	4	Capacitor, 28uF 525V
5	1730994	4	Ballast Assy Complete (Control Gear)
6	1730938	4	Capacitor, 275V 0.1k
7	1730936	4	Bolt, Lamp Bracket Mount 3/4" x 4" UNC
8	1730921	4	Glass Lens for Lamp Assembly
9	1730239	4	Lamp Holder
10	1730960	4	O'Ring For Bulb (Not Shown)
	1730837	4	Light Guard Mesh (Option, Not Shown)

**DRAWBAR & TRANSPORT LEG VIEW**



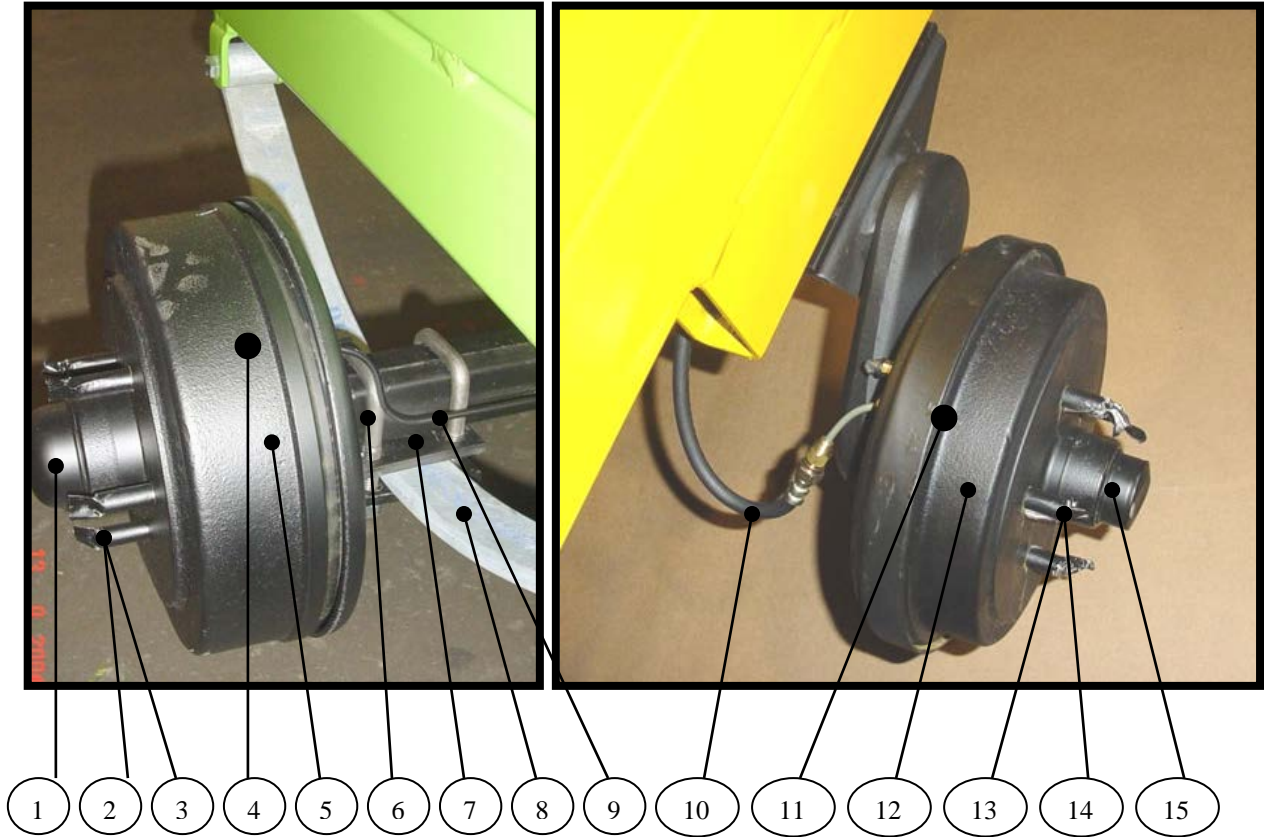
Item	Part Number	Qty	Description of Part
1	1735456	1	Tow Coupling – Over-ride Tow Ball Type
2	A650235	1	Front Outrigger Jack
3	1730600	1	Weldment Front Drawbar Extension
4	3421452	1	Drawbar Lockpin
5	1735986	1	Cable, Draw Bar Lock Pin Retainer
6	1739158	1	Pin Retainer ‘R’ Clip
7	3760215	1	D Ring for Drawbar Lock Pin
8	1730781	1	Transport Leg Locking Pin
9	1730580	1	Transport Leg Weldment
10	1739158	1	‘R’ Pin
11	1730578	1	Handle Park Brake
12	1737060	1	Master Cylinder Brake
13	1730766	1	Kit Brake Line
14	1730753	2	Chain Safety Tow Hitch



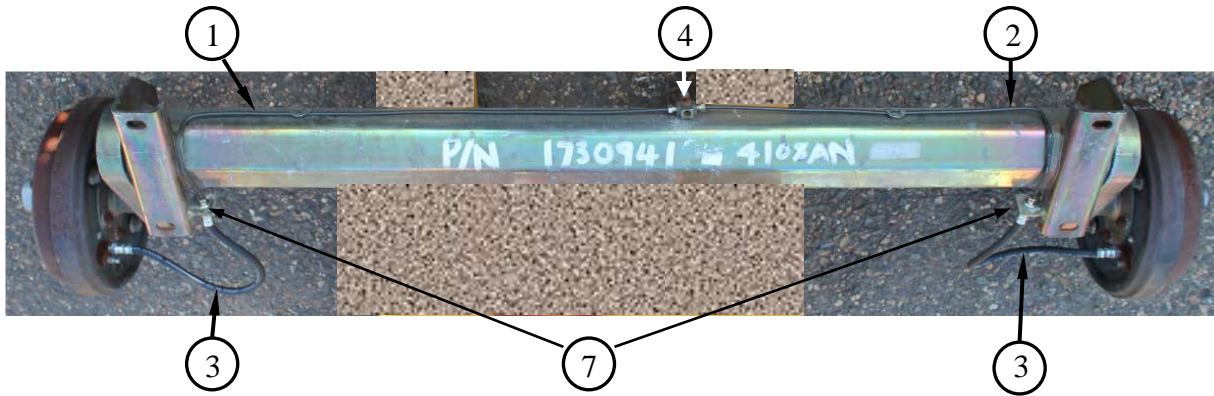
**AXLE ASSEMBLY**

Prior to S/N 4108AN047

S/N 4108AN047 to Present



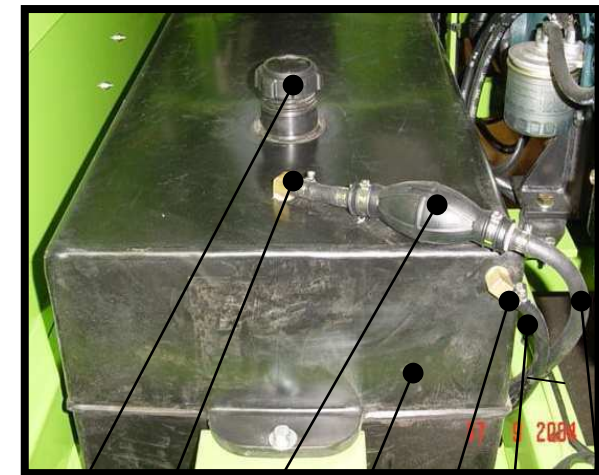
Item	Part Number	Qty	Description of Part
1	1730942	1	Cap, Hub
2	1730943	5	Stud, Wheel
3	1730944	5	Nut, Wheel
4	1730906	1	Assembly, Axle, Leaf Spring Type
5	1730945	1	Drum Brake, Wheel
6	1730226	2	Bolt "U" Shackle
7	1730225	2	Plate Shackle
8	1730227	1	Spring Leaf
	1730992	1	Kit Spring Leaf (Includes shackles and plates)
9	1730959	1	Kit Brake Lines, Leaf Spring Axle
10	1733147	1	Kit Brake Lines, Independent Axle (supersedes 1730228)
11	1730941	1	Assembly, Axle, Independent Type
12	1730229	1	Drum Brake, Wheel
13	1730230	5	Stud Wheel
14	1730231	5	Nut Wheel
15	1730232	1	Cap Hub
	1730235	1	Brake Shoes (Set)
	1730236	2	Wheel Bearing Kit
	1730237	1	Wheel Cylinder LH Side
	1730238	1	Wheel Cylinder RH Side
	1730240	1	Backing Plate (LH And RH Pair)



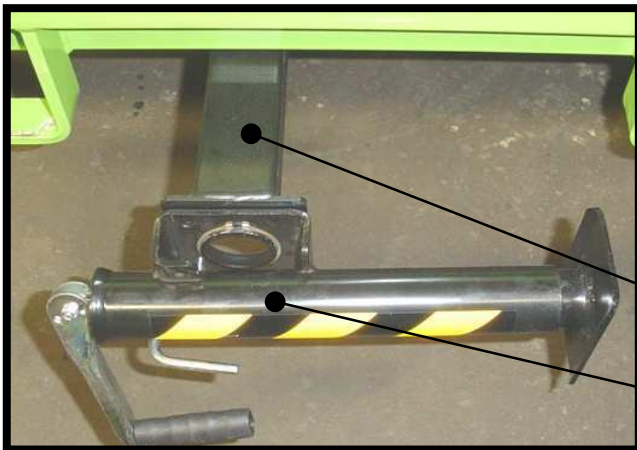
Brake-Line Kit [AL-KO Axle (1730941)]

Item	Part Number	Qty	Description of Part
-	1733147	-	Kit, 4108AN Brake-Line Components (supersedes 1730228)
1	1001146742	1	Tube, 4108AN Brake Line LH
2	1001146743	1	Tube, 4108AN Brake Line RH
3	1001244947	2	Hose-Assy, 4108AN Brake Drum
4	1733811	1	T-connector (4108AN & 6308AN)
5	1733812	1	Hose-Assy, Drawbar (not shown)
6	1733808	1	Tube, Drawbar Brake Line (not shown)
7	1733817	3	Clip, AL-KO Brake Line C-Type (one not shown)

**OTHER CHASSIS COMPONENTS**



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Item	Part Number	Qty	Description of Part
1	7016314	1	Cap Fuel
2	1730940	1	Fitting 90 Degree 3/8 Hosetail
3	1730815	1	Fuel Line Primer Bulb
4	1730996	1	Fuel Tank, Plastic
5	1730939	1	Fitting 90Degree ¼ Hosetail
6	1737577	1.3m	Fuel Hose ¼" 1.3mtrs
7	1737578	1.1m	Fuel Hose 3/8" 1.1mtrs
8	1730749	1	Rear Stabiliser Leg
9	1730777	1	Rear Stabiliser Jack
10	1701500	1	Decal Tie Down / Lift
11	1700037	1	Decal Ground Control
12	1730535	1	Decal Unlatch Turnbuckles
13	1730733	1	Decal Set Up and Towing
14	1730300	1	Decal Electric Hazard
15	1730598	1	Decal Do Not Operate
16	1730734	1	Decal Australian Standards
17	1730596	1	Decal Authorised Personnel
18	1730597	1	Decal Read Instruction Manual

# SECTION THREE

## RECOMMENDED SPARES QUICK REFERENCE

ITEM DESCRIPTION	PART NO
Solenoid Pump Motor	1730549
Pushbutton switch pump	4360387
Main RCD Double Pole	1730958
Switch Circuit breaker 20A	4360161
Lamp Alternator Warning	1730926
Keyswitch Engine W/Key	1730540
Fanbelt	1730962
Hose Radiator Top	1730954
Hose Radiator Lower	1730962
Air Filter Element	1730963
Fuel Filter	1730930
Oil Filter	2120929
Lamp Metal Halide 1000W	1730995
Radiator Cap	1730562
Tail Light Assembly	1733618
“R” Clip Retainer, Drawbar	1739158
Drawbar Jack	A650235
Outrigger Jack, Sides	A330010
Outrigger Jack, Rear	A330008



## New Product Warranty

**1. WARRANTY.** JLG Industries (Australia), ("Manufacturer") warrants each new Lighting Tower product made by it to be free from defects in material or workmanship for TWELVE months from the date of initial sale of such product. Manufacturer agrees only to repair or replace at its own expense, F.O.B. the place or places of manufacture, any part or parts of the product found to be defective in material or workmanship, provided Manufacturer is notified of such defect or defects within the applicable warranty period and given a reasonable time to correct the defect. In no case shall any warranty extend to defects in materials, components, or services furnished by third parties. Defects caused by chemical action or the presence of abrasive materials and defects arising through the improper use or application of this Light Tower shall not be considered defects within the scope of the above mentioned warranty. If any repairs or alterations are made or any parts are replaced during the periods covered by any warranty above mentioned by other than an authorised Manufacturer's Distributor or authorised Service Agent in accordance with authorised Manufacturer's service manuals or with other than parts, accessories, or attachments authorised by Manufacturer for use in its products, customer shall pay for such repairs or parts without recourse against Manufacturer, and Manufacturer shall be relieved of responsibility for fulfilment of the above mentioned warranty with respect to parts or components for all repairs, alterations, or replacements so made. Manufacturer's obligations under this warranty shall at all times be subject to its then current warranty policies and procedures. The above mentioned warranty shall not apply to replacement or service parts made by and sold by the Manufacturer, with any obligation of the Manufacturer to such parts governed solely by Manufacturer's then current warranty policies and procedures.

**2. DISCLAIMER AS TO CONSEQUENTIAL OR SPECIAL DAMAGES.** Under no circumstances shall the Manufacturer be liable for any consequential or special damages which any person, firm, corporation, or other entity may suffer or claim to suffer or incur or claim to incur as a result of any defect in the product or in any correction or alteration thereof made or furnished by Manufacturer or others. "Consequential" or "special damages" as used herein includes but is not limited to costs of transportation, lost sales, lost orders, lost profits, lost income, loss of hire, increased overhead, labour and material costs, and costs of manufacturing variances and operational inefficiencies.

**3. MAXIMUM LIABILITY.** The maximum liability of Manufacturer under the exclusive warranty set forth herein shall be the amount paid to Manufacturer with respect to the product to which such warranty applies.

**4. EXCLUSIVE AND ENTIRE WARRANTY.** This warranty constitutes Manufacturer's entire warranty as to the product and it is agreed that the remedies of customer and those claiming under customer as stated in this warranty are exclusive. Manufacturer does not assume (and has not authorised any other person to assume on its behalf) any other warranty or liability in connection with any product covered by this warranty. MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES OF ANY KIND WHATSOEVER AS TO THE PRODUCT FURNISHED HEREUNDER, INCLUDING BUT NOT LIMITED TO EXPRESS OR IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD, DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

**5. NOTICE OF OCCURRENCE.** This warranty shall be void if, upon the occurrence of any incident involving any product made by Manufacturer and resulting in any personal injury or property damage, customer shall fail to notify Manufacturer within 48 hours of such occurrence or permit Manufacturer and its representatives to have immediate access to such product and to all records of or within the control of customer relating to the product and occurrence.

**6. LIMITATION OF LIABILITY.** The limitation of liability provisions herein shall apply to any and all claims or suits brought against Manufacturer including any claim based upon negligence, breach of contract, breach of warranty, strict liability, or any other legal theories upon which liability may be asserted against Manufacturer.

Manufacturer may at any time amend the foregoing form of warranty without prior notice.