



**PW628 & DW625  
MID RANGE LOADER  
OPERATORS MANUAL**



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Patents Pending US 6397967, 438218 & 10/096997 AU 65424/99, 2006101054

UK 2345046. AU Registered Design 138603



We thank you for choosing the KANGA LOADER. This machine is the result of extensive design and development, and is acknowledged as being a superior product in its category. We congratulate you on your discerning choice and wish you many years of productive service.

Read this manual carefully before operating your machine it contains important technical information, safety precautions and operating instructions. Compliance with Safety Precautions and Risk Management standards together with the correct operation and attention to maintenance procedures are necessary to ensure a long, SAFE and trouble free working life for your KANGA LOADER.

Some illustrations in this publication show details or attachments that may be different from your machine. Guards and covers may have been removed for illustrative purposes, however, the machine in its operational state must always be operated with all guards and safety controls in place.

Continuing improvement and advancement of product design may have caused changes to your machine which are not included in this publication. We advise you to read study and understand this manual before undertaking any maintenance, and to keep it with your machine at all times as a ready reference.

### **SAFETY**

The safety section lists basic safety precautions. In addition, this section identifies the text and locations of warning labels used on the machine. Read and understand the basic precautions listed in the safety section before operating or performing lubrication, maintenance and repair on this product.

## PREPARATION FOR USE

### INSPECTION AFTER DELIVERY

When the machine is delivered, it should be inspected for any evidence of damage caused as a result of shipment before it is declared ready for use. The preparation of the mini loader for use should only be undertaken by a responsible person who has read and understood this manual. The requirements are simple and coupled with the use of good common sense, together with general occupational health and safety knowledge and a visual inspection, should not pose any problems. The following checklist provides suggestions for detecting defective or damaged parts.

### CHECK BEFORE USE

<b>1</b>	Inspect the machine chassis for any visible damage.
<b>2</b>	Visually inspect all components to ensure they are attached securely.
<b>3</b>	Inspect all areas for evidence of hydraulic oil, engine oil or fuel leakage.
<b>4</b>	Inspect Arm assembly area for firm attachment and sufficient lubrication. Check hydraulic cylinders for oil leakage and visible damage.
<b>5</b>	Check hydraulic oil lines for correct connection and for signs of leakage.
<b>6</b>	Check wheel and tyre assemblies for loose or missing wheel nuts, any visible damage and proper tyre inflation.
<b>7</b>	Check wheel drive motor assemblies for any visible damage and oil leakage.
<b>8</b>	Inspect all cylinders for rust, nicks, scratches or foreign material on shafts. Check for hydraulic oil leaks at the seal and fitting areas.
<b>9</b>	Inspect the engine compartment for loose or missing components and any evidence of damage or leakage.
<b>10</b>	Check the engine oil level is within operating limits as marked on the Dip Stick.

## SAFETY LABEL IDENTIFICATION

The safety section lists safety precautions **required** to be taken when operating or maintaining a Kanga Loader. Read and follow **all** operating and safety instructions contained in this Manual and illustrated on the decals fitted to the Loader, and ensure that you assess the risk of any task by use of the attached Job Safety & Environmental analysis (JSEA) sheet.

If you are unable to identify hazards or do not understand the process for use of the JSEA chart, stop the job and consult a qualified Occupational Health and Safety consultant.

**DANGER**

**THIS SYMBOL HAS BEEN USED THROUGHOUT THIS MANUAL TO HIGHLIGHT CRITICAL SAFETY INFORMATION TO PREVENT DEATH AND INJURY.**



**THIS SYMBOL HAS BEEN USED THROUGHOUT THIS MANUAL TO HIGHLIGHT IMPORTANT SAFETY INFORMATION. ENSURE YOU READ AND UNDERSTAND THE INFORMATION BEFORE EMBARKING ON ANY RELATED TASK.**



**THESE SYMBOLS ARE PICTOGRAMS AND REFER TO COMPULSORY PERSONAL PROTECTIVE EQUIPMENT (PPE) THAT MUST BE WORN AND/OR ACTIONS THAT MUST BE TAKEN BY THE OPERATOR TO ALLOW SAFE OPERATION OF THE MACHINE TO OCCUR.**


# SAFE OPERATION

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The Kanga Loader is a versatile machine, capable of performing a variety of tasks in a safe and effective manner, when used in accordance with established procedures and supported by Risk Assessment. However, to ensure the safety of operators and others, it is important to ensure that the capacity of the machine is not exceeded and that the Loader is operated appropriately, and only after all tasks associated with the work at hand have been documented and the relevant risk control measures implemented.

To ensure the safe operation and transport of your Kanga Loader, the following basic Safety Rules must be understood and complied with at all times.

## Safe Loading/Unloading and Transportation:

- When loading/unloading the Kanga from a trailer, it is important that the trailer remains attached to the towing vehicle on a firm even surface.
  - Never unload a trailer positioned on a slope.
  - Ensure the angle of ascent/descent is within safe operational limitations.
  - Ensure bystanders are sufficiently clear.
  - All loading/unloading is to be carried out at a slow speed with due care for personal safety and damage to equipment. Practice the manoeuvres first on flat ground if necessary.
  - When lifting the machine, use appropriately rated slings and shackles and attach securely to the lifting point on the top of the machine.
- 
- Always use the tie down points on each side of the machine to secure the Loader when transporting.
  - Always use witches hats, signage and traffic signals to control the unloading/loading zone, particularly when in close proximity to operational roads.

## Before Commencing Work:

- Ensure all safety instructions are clearly understood, that operating manuals have been read and that operators are familiar with the controls of the Kanga Loader.
- Ensure that the daily inspection routine has been successfully conducted. It is particularly important to ensure that all attachment Locking Pins are fully engaged and secure.
- Ensure the driving platform is free from dirt, grease or mud before use.
- Check all controls for proper response. Shut down the machine if a fault is detected, tag the machine out with an “Out of Service” tag, remove the key and contact the local Service Agent.
- Review the working site for hazards through the use of a Job Safety Analysis and/or Risk Assessment and implement the risk control measures to eliminate or minimise their effects, such as:
  - Overhead power lines
  - Underground services
  - Excavations
  - Slopes or adverse cambers
  - Confined spaces
  - Other obstructions
  - Other people or animals accessing the working area or machine

# ALWAYS

- Completely read and understand the Operator's Manual supplied with the machine.
- Undertake a Job Safety and Environmental Analysis (JSEA) and/or Risk Assessment before any use of both the Kanga Loader and the trailer upon which the Loader and/or attachments are carried. A blank JSEA is provided in Appendix A for use. Photocopy as required.
- Use the Job Safety and Environmental Analysis Checklist to check that the relevant safety procedures are in place before work commences.
- Position the trailer carrying the Kanga in an area free from traffic, establish a traffic control plan/zone, chock the wheels and ensure that people are not placed in a position where they can be struck by vehicles or equipment being loaded or unloaded.
- Demarcate the work area with barricades and/or witches hats before using the Kanga Loader.
- Identify, mark and delineate **all** underground services before any work commences.
- Have both feet planted firmly on the driving platform at all times when operating the Kanga Loader. This is especially important when carrying loads, as body weight provides additional counter-balance to the bucket load.
- Come to a complete stop before changing direction from forward to reverse and vice versa. Failure to do so can affect the stability of the Loader and may also damage the drive of your machine.
- Come to a complete stop before operating other hydraulic controls.
- Reverse down slopes at slow speed when carrying loads.
- Ensure the machine is fully stopped and turned off before alighting or exiting the machine. Never use control levers as hand holds, instead utilize the handholds, using the thumbs and forefingers to operate the control levers.
- Travel at speeds suitable for the conditions and as determined by the task JSEA or Risk Assessment.
- When traveling over undulating surfaces and/or rough terrain, it is essential that the operator ensures that the speed is appropriate to suit conditions and to creep over uneven terrain at minimum speed. The recommended normal operating speed is between 2/3 to 3/4 throttle; at a lower speed the noise levels are reduced to both the operator and bystanders.
- Wear approved, appropriate Personal Protective Equipment (PPE), such as:
  - Hearing protection
  - Safety footwear
  - Eye protection
  - Hard hat
  - Long, close fitting protective clothing
  - A high visibility vest or clothing, etc.
- Keep hands, feet and clothing away from all moving parts, including hydraulic rams.
- Keep body parts within the confines of the machine.
- Keep alert, and avoid being distracted whilst operating the loader.
- Remove the key and chock the wheels whenever the Loader is to be left unattended and/or unsupervised.



# NEVER

- Operate this machine or the trailer without undertaking a Risk Assessment or JSEA.
- Operate this machine without Personal Protective Equipment (PPE).
- Exceed the Safe Working Load (SWL) of 250kg (551lbs) for the Mid range loader.
- Carry passengers on any part of the Loader or attachments.
- Place feet under the driving platform.
- Smoke (or approach the Loader with a naked flame) whilst operating or refuelling.
- Leave the engine running whilst refuelling.
- Tie or secure yourself to any part of the machine or attachment.
- Fool around while operating the Loader or attachments.
- Carry a load with the bucket raised. Carry all loads as close to the ground as practicable.
- Traverse across slopes, especially on uneven ground.
- Jerk the control levers. Always use a steady, even action to achieve proper control.
- Touch exhaust, engine parts, hydraulic pipes and fittings, drive chains, friction parts or guards.
- Park or leave Loader unattended on a slope.
- Remove safety decals.
- Remove safety guarding.
- During operation use mobile telephones or portable radios.



## CAUTION

Always exercise care when operating on slopes. The Kanga Loader has been designed to be able to access restricted areas, due to its minimal width. This, however, reduces its stability when crossing slopes.

The Kanga Loader is designed to operate on slopes to a maximum of 20°, under no circumstance is this to be exceeded. The actual safe slope angle may need to be reduced depending on a number of variables, such as site conditions, attachments, condition and configuration of machine and operator experience.

Crossing slopes should be avoided wherever possible. If it is not possible, slopes should be traversed with loads lowered as far as possible, reduced speed and extreme caution.



## FIVE STEPS TO EFFECTIVE JSEA

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<b>1</b>	<b>DOCUMENT THE ACTIVITY</b> Assemble those involved in the activity and then, using the JSEA worksheet, write down in step by step form, the tasks that make up the activity.
<b>2</b>	<b>IDENTIFY THE HAZARDS</b> Next to each task, identify what part of the task may cause injury to those engaged in the task or others in the vicinity.
<b>3</b>	<b>DOCUMENT THE CONTROL MEASURES</b> For each identified hazard, assess the associated level of risk to those involved, and then list the control measures required to eliminate or minimise those risks.
<b>4</b>	<b>IDENTIFY WHO IS RESPONSIBLE</b> Document the name of the person responsible for implementing the control measure.
<b>5</b>	<b>MONITOR AND REVIEW</b> Ensure that the activity is supervised and that the documented process is being followed. The documentation should be reviewed whenever a documented activity changes or when there is a change of personnel or after an appropriate length of time.

## **NO GO ZONES FOR UNDERGROUND UTILITY SERVICES**

No work is to commence on any worksite until you have checked if it contains underground services. Here is how you can find out.

- The “Dial Before You Dig” service (in Australia, **dial 1100**, provides free and easy access to the records of a large number of organizations, including telecommunications, water, electricity and gas.
- To see a list of organizations registered with the service or to log an enquiry electronically, visit the Dial Before You Dig website at [www.dialbeforeyoudig.com.au](http://www.dialbeforeyoudig.com.au), or telephone 1100 (otherwise consult with your local environment department).

If underground services are present, you must comply with the No Go Zones.

If the worksite contains or is suspected to contain ANY underground services, before any work commences, you must follow the relevant No Go Zone safety procedures:

- No Go Zone safety procedures are available from all gas, water, telecommunications and electricity companies.
- You must follow these safe systems of work at all times. If you cannot comply with these safety procedures, then **NO** work shall be undertaken without written permission being received from the utility company.
- The Kanga Loader and attachments must be kept a minimum distance of 2 meters from all underground services.

**MAINTAIN A MINIMUM OF 2 METERS DISTANCE FROM ANY UNDERGROUND SERVICE.**



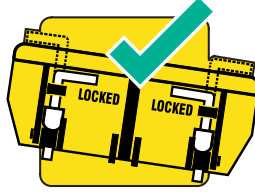
# OPERATOR SAFETY - SUMMARY



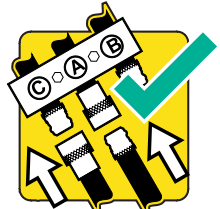
1. READ OPERATORS MANUAL PRIOR TO USE



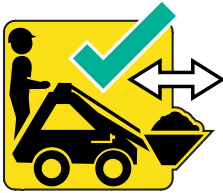
2. DAILY INSPECTION



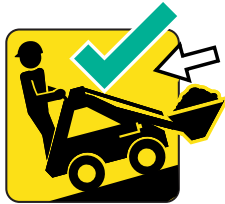
3. ENSURE BOTH (2) ATTACHMENT LOCK PINS ARE FULLY ENGAGED



4. ENSURE HYDRAULIC HOSES ARE CLEAN AND ATTACHED



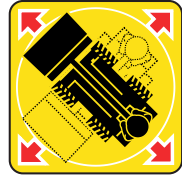
5. TRANSPORT MATERIAL WITH BUCKET DOWN AND LEVEL



6. ALWAYS REVERSE DOWN SLOPES



7. WEAR APPROPRIATE PROTECTION



8. NO PERSONNEL WITHIN A 4M (12 ft.) DIAMETER



9. NO SMOKING WHILE FILLING



10. DO NOT PLACE FEET UNDER STANDING PLATFORM



11. DO NOT TRAVEL WITH ARMS RAISED



12. AVOID TRAVELLING ACROSS SLOPES



13. NO PERSONNEL IN BUCKET OR ATTACHMENTS



14. PAY ATTENTION



15. OPTIMUM OPERATION OF THIS MACHINE IS ACHIEVED AT 2/3 TO 3/4 THROTTLE

**DANGER**

FAILURE TO READ THESE SAFETY RULES PRIOR TO ANY MACHINE OPERATIONS MAY LEAD TO SERIOUS INJURY, PROPERTY DAMAGE OR DEATH.

# LOADER CHECKLIST

MODEL: _____	INSPECTOR'S NAME: _____
SERIAL No.: _____	MACHINE BUILT BY: _____
ENGINE No.: _____	DATE: _____

VISUAL CHECK <span style="float:right;">✓ ✗</span>	OPERATIONAL CHECK <span style="float:right;">✓ ✗</span>
1. Damage.	1. Gauges/switches and connections/dash lights.
2. Loose bolts/nuts.	2. Attachment Plate.
3. Rust.	3. Throttle Lever (not too tight or loose).
4. Leakage oil or water.	4. Levers and linkages working correctly.
5. Wiring / oil cooler connection.	5. Unusual noises or vibrations.
6. Paint work	6. Petrol/ Diesel engine <b>Idle</b> 1350-1450 / 900-1000rpm.
7. Any untidy weld spots or runs.	7. Petrol/ Diesel engine <b>max</b> 3550-3650 / 3800-3850rpm.
8. Check of fittings alignment.	8. Is Loader easy to start?
9. Is Loader clean and tidy?	9. Is Hour Meter working? Test time = hrs.
10. Are pipes and hoses clear of parts on Loaders?	10. Check that lift cylinder stops in correct position.
11. Are Hershel plugs clear of tank & hydraulic lift tubes?	11. Aux stop cable, check cable length is correct & test operation 5 times.
SERVICE <span style="float:right;">✓ ✗</span>	GUIDANCE <span style="float:right;">✓ ✗</span>
1. Tie down lugs fitted on body.	1. Correct stickers applied (UK C/E sticker).
2. Correct Attachment Plate/ operation ok with test jig.	2. Correct Tyre Pressure sticker attached.
3. Lubricate Loader, grease all linkages.	3. Identification Plate -(correct number stamped).
4. All pins and bushes fitted and tight.	4. Safety/Operating Manual/DVD.
5. Belt tension fan/alternator.	5. Engine Manual (Honda Warranty Form).
6. Wheel condition/wheel nuts been tensioned 100 ft-lb.	FLUID COMPARTMENT CHECK <span style="float:right;">✓ ✗</span>
7. Is the track slot forward and tyre direction correct?	1. Battery condition.
8. Is the tyre pressure to specification?	2. Engine oil level.
9. Radiator core, hoses and fittings.	3. Hydraulic oil level.
10. Air element and hose clearance and connections tight.	4. Fuel level.
11. Sediment in fuel filter/tank (drain fuel tank).	5. Inspect fuel tanks for leaks.
12. Is engine EPA compliant?	6. Hydraulic filter housing directions and elements tight.
13. Is PTO direction correct?	7. Radiator water level (Diesel).
14. Has valve tag been removed?	OTHER <span style="float:right;">✓ ✗</span>
15. Are QRCS correctly aligned and covers fitted?	1. Is the "Passed By" sticker attached and signed?
16. Spare key fitted correctly to machine.	2. Check machine to be shipped against order.
17. Ensure battery is secure and boot is on alternator.	3. Is the Loader ready for despatch?
18. Is the Splash Plate fitted?	4. Ensure diesel Loader has oil funnel.
19. Check oil cooler connection to fan.	5. Have back protection bars been ordered and fitted?.
20. Ensure control knobs are not split and are secured.	6. Lights/Beacon operational (Where Fitted).
21. Is the Control Knob on Trencher Valve clear of guard?	7. Horn/ Reverse beeper operational (Where Fitted).
	8. Rear Legs Operational (Where Fitted).

"Received the above Loader, attachments and documentation as stated above in good condition. The correct operation of the Loader has been explained to our satisfaction. We understand that this Loader should be operated by a properly trained operator. We are aware that the use of this Loader in any manner or place for which it is not designed will render it unsafe."

DISTRIBUTOR'S NAME: \_\_\_\_\_ INSPECTOR'S SIGNATURE: \_\_\_\_\_

## DAILY OPERATOR MAINTENANCE

### INSPECTION AND CHECKS

Before each day's operation of the KANGA Loader, the **operator MUST** perform the inspection and checks as outlined below.

The purpose of the operator's inspection is to keep the equipment in a safe working condition and to detect any signs of malfunctioning during normal operations between scheduled maintenance checks.

While it may not be the operator's responsibility to perform mechanical maintenance, they should be thoroughly familiar with the unit, as this involves their own safety.

Many costly maintenance jobs can be prevented through observance of the following operator maintenance inspections and checks by KANGA Loader operators.

For expert advice and quality service, consult an expert repairer, we recommend an authorised kanga repairer.

The owner should retain evidence that proper maintenance has been performed as prescribed.

A claim against a warranty will not qualify if it results from lack of maintenance and not from defective material or authorised workmanship.



**CAUTION: DO NOT operate a Kanga Loader that is known to be damaged or malfunctioning. Remove the key from the ignition and Tag Out the machine using an Out of Service tag and contact your Service Agent.**

Defective components and/or equipment malfunctions can jeopardise the safety of the operator and other personnel and can cause extensive damage to the unit. Remember, a poorly maintained unit could become a great operational hazard.

## DAILY CHECKS

Element		Yes	No	Comment
<b>LOADER</b>				
<b>Wheels</b>	Good condition/ adequate tread.			
	Adequate pressure.			
	Wheel nuts secure.			
<b>Guarding</b>	Good condition.			
	Secure.			
<b>Hydraulics</b>	Good condition of hoses (check for leaks).			
	Good condition of casings (check for leaks).			
	Good condition of rams (check for leaks).			
	Adequate hydraulic oil level.			
<b>Controls</b>	Correct operation.			
	Responsiveness.			
<b>Structure</b>	Adequate weld condition.			
	Free of cracks/damage.			
	Linkage Pins greased.			
<b>Bolts and Fasteners</b>	Check pivot pins for wear/damage.			
	Tight.			
	None missing or damaged.			
<b>Battery</b>	Terminals tight.			
	Free of corrosion.			
	Good condition (check indicator).			
<b>Safety Decals</b>	Legible.			
	All in place.			
<b>Engine</b>	Adequate crankcase oil level.			
	Check Air cleaner / Filter.			
<b>Fuel</b>	No Leakage.			
	Adquate Fuel Level.			
	Drain water tap if fitted (Optional Extra).			
<b>Water (Diesel Loader)</b>	Radiator Hoses/water level.			
<b>Operating Manual</b>	Present with machine.			
<b>ATTACHMENT</b>				
<b>Guarding</b>	Good condition.			
	Secure.			
<b>Hydraulics</b>	Good condition of hoses (Check for leaks).			
	Good condition of casings (Check for leaks).			
	Good condition of rams (Check for leaks).			
<b>Controls</b>	Correct operation.			
	Responsiveness.			
<b>Structure</b>	Adequate weld condition.			
	Free of cracks/damage.			
<b>Bolts and Fasteners</b>	Tight.			
	None Missing.			
	Attachment locking pins in place.			
<b>Decals</b>	Legible.			
	All in place.			
<b>Operating Supplement</b>	Present with machine/attachment.			

# LOADER ARM MAINTENANCE

## INSPECTION AND CHECKS

### Always...

- Secure the Arm using the supplied Locking Pins when carrying out maintenance activities, particularly when working with the Arm in the raised position.
- Keep a fire extinguisher on hand during maintenance operations.
- Ensure the working area is kept clean and free of oil, grease and debris.
- Designate the effective maintenance work area using witches hats.



### Never...

- Rely solely on the machine hydraulics to keep the Arm elevated whilst carrying out maintenance. Locking Pins should always be used to physically hold the boom in the raised position.
- Raise or lower the boom with the Locking Pins in place.



**BOOM MAINTENANCE**



LOCKING PINS ARE KEPT TO THE LEFT SIDE OF THE CONTROLS.



LOCKING PINS IN POSITION

**Arm Safety Pin Replacement # 0K10750**  
**Rubber Safety Pin Grommet # L122240**

## SERVICE TASKS

The following service work should only be carried out by a qualified Service Technician at intervals indicated on the Service Chart.

The operating hours are displayed by the Hour Meter on the Instrument Panel. The display will flash for 2 hours when a service is due. The flashing will cease after a two hour operating period has passed. Also displayed on the Instrument Panel on all Loaders are a Fuel Gauge, a Charge Warning Light and an Oil Warning Light. A Water Temperature Warning Light and Glow Plug Light are also included on the Instrument Panel for the Diesel Loaders only.

### PETROL INSTRUMENT PANEL



### DIESEL INSTRUMENT PANEL



Honda Replacement Key #  
**KS-000080** key

Kubota Replacement Key #  
**L115965-4** set

Hour Clock # **DL-000817**  
Spare Bulb # **EC-100088**



# SERVICE TASKS - ENGINE

## ENGINE OIL

Change the engine oil after the first 20 hours of operation and thereafter, after every 100 hours. Generally engine oil type SAE 10W-30 is recommended. See Engine Manual for details.

Ambient Temperature	Oil Type
Above 25°C (77°F)	SAE 30 or SAE10W-30/SAE10W-40
0°C to 25°C (32°F to 77°F)	SAE 20 or SAE10W-30/SAE10W-40
Below 0°C (32°F)	SAE 10 or SAE10W-30/SAE10W-40

## ENGINE OIL FILTER (PETROL ENGINE) - Part Number # KS-000053

Replace the oil filter after every 100 hours of operation. See Engine Manual for details.

## ENGINE OIL FILTER (DIESEL ENGINE) - Part Number # L120500

Replace the oil filter after every 100 hours of operation. See Engine Manual for details.

## AIR FILTER (PETROL/DIESEL)

### HONDA AIR FILTRATION - Part Number # KS-000034 (Element Only)

The pre cleaner foam should be washed out and re oiled when machine is working in dusty conditions every 8 hours of operation. Replace the air filter element after every 100 hours of operation, or sooner if operating in a dusty environment.



HONDA



DONALDSON

### DONALDSON AIR FILTRATION – Part Number # L120682 (Element Only)

The pre cleaner bowl should be emptied out and when machine is working in dusty conditions every 8 hours of operation. Replace the air filter element after every 100 hours of operation, or sooner if operating in a dusty environment.

### RADIATOR (DIESEL ENGINE) - Replacement Radiator Cap # KS-000081

The radiator fluid bottle should be checked every day and topped up where necessary and the system contains a pre mix of water and coolant to a 50/50 ratio, Water capacity is 3.1 litres. The radiator cap should be periodically checked for proper performance and replaced as required.

### FAN BELT (DIESEL ENGINE) - Part Number # L115958

The Fan Belt should be checked regularly for signs of wear and changed in accordance with the Manufacturers recommendation (see engine manual).

### **FUEL FILTER FOR E 10 ETHANOL FUELS – Part Number # DL-001253**

The Racor fuel filter if maintained daily and correctly will minimize the ingress of water and hard partials entering into the carburettor and causing corrosion and the engine to run rough. The 10 micron filter must be drained daily or at prior intervals if it becomes saturated with water so the operator must keep an eye on the filter saturation level, when water is visible in the see through bowl or engine performance is noticeably reduced service is required.

The aqua block filter can be cleaned and re used several times and replaced every 100 hours as per service chart however if it becomes dirty and completely blocked with hard partials it should be replaced sooner.

### **SERVICE INSTRUCTIONS**

1. Make sure the engine is turned off and cool to touch.
2. Use a small catch container under the filter housing spin the see through bowl off the mounting head by turning in a counter clockwise motion.
3. Remove the aqua block filter and clean in a bath of Methylated spirits and thoroughly dry (do not use compressed air or you could damage the filter) re install or replace element if required with part number **DL-001253**.
4. Lubricate the filter bowl o-ring with motor oil and tighten by hand only don't use tools
5. Start engine and check for leaks correct any if necessary with the engine switched off.

**NOTE:** For Ethanol fuels that are stored for longer than 2 weeks and up to a Month a Fuel stabilizer additive is available P/N CONS-000732 and recommended to reduce phase separation of the Ethanol fuels.

### **FUEL FILTER FOR DIESEL FUELS – Part Number # L120400A**

Replace the fuel filter after every 100 hours of operation, or sooner if operating in a dusty environment.

### **IDLE SPEED**

Check engine idle speed after every 200 hours of operation, and adjust if out of specification. See Engine Manual for details.

### **SPARK PLUGS (PETROL ENGINE) – Part Number # KS-000027**

Replace after every 100 hours.

### **GLOW PLUGS (DIESEL ENGINE) – Part Number # L115950-3**

See Engine Manual for details.

### **VALVE CLEARANCES (PETROL ENGINE)**

Check and adjust engine valve clearances after every 200 hours of operation. See Engine Manual for details.

### **VALVE CLEARANCES (DIESEL ENGINE)**

Check and adjust engine valve clearances after every 800 hours of operation. See Engine Manual for details.

# SERVICE TASKS - HYDRAULICS

## HYDRAULICS

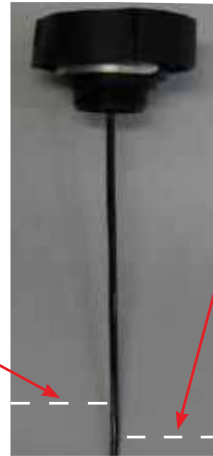
Perform the following work after every 100 operating hours:

Check hydraulic fluid level (with arms down and oil cold) top up with Hydraulic Oil **ISO 68**

**NOTE:** A significant drop in fluid levels will indicate leakage. The appropriate cold fluid level is indicated on the site gauge.



Location of  
Filler Breather



Hot Fill level

Cold Fill Level

Inspect all hydraulic hoses, tubes, fittings, valves and rams for leaks and damage. Tighten loose fittings and replace damaged components. Check all three pressure settings every 200 hours (see procedure on following page) and adjust if necessary.)

## HYDRAULIC FILTERS

**Return line filter** Replace the cartridge after every 200 operating hours.

### PRESSURE FILTER

Replaced in line filter cartridge after every 500 operating hours.

**Return Filter Element Part No: HA-000726**

(Illustration shows housing)

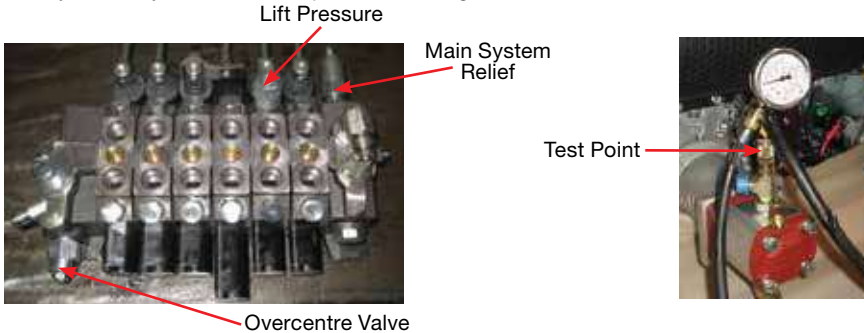
**Pressure Filter Element Part No: L116420**

(Illustration shows housing)



## HYDRAULIC PRESSURE SETTINGS

The hydraulic system has three pressure settings which have to be set as follows:



Before any testing is carried out run the engine and hydraulic system to warm the hydraulic oil. The oil cooler fan will engage at between 60 and 65°C (145°F).

All pressure settings are performed with the oil cooler fan on and engine running at full speed (3,600 rpm).

### OVER CENTRE VALVE

Connect an accurate pressure gauge with a range **0-300 bar (0-4,300 PSI)** to the **Test Point**.  
**The pressure should be set at: 31-34 bar (450-500 PSI) for the 11.3cc Pump**

**NOTE:** If adjustment is required slacken off the lock nut and using a 5mm hex key wind in the screw in to increase the pressure or out to reduce the pressure. Retighten the lock nut when adjustments are complete.

### MAIN SYSTEM RELIEF PRESSURE

Connect an accurate pressure gauge with a range **0-300 bar (0-4,300 PSI)** to the **Test Point**.

Check the pressure while pulling the **tilt control lever** at the end of the ram's stroke.

**The pressure should be set at: 207 bar (3,000 PSI) for the Petrol models and 220 bar (3,200 PSI) for Diesel Models.**

**NOTE:** If adjustment is necessary slacken off the lock nut on the main pressure relief valve and wind in the screw to increase the pressure or back off the screw to reduce the pressure. Retighten the lock nut when adjustments are complete.

### LIFT PRESSURE

Connect an accurate pressure gauge with a range **0-300 bar (0-4,300 PSI)** to the Test Point. Check the pressure while pulling the arm control lever at the end of the ram's stroke (boom fully raised).

**The pressure should be set at: 165 bar (2,400 PSI) for Mid Range Loaders.**

**NOTE:** If adjustment is necessary unscrew the cap lock nut on the lift pressure relief cartridge and wind in the screw using an allen key to increase the pressure or back off the screw to reduce the pressure. Refit and tighten the lock nut when adjustments are complete.

### HYDRAULIC FLUID

Replace the hydraulic oil after every 1,000 operating hours.  
(Hydraulic Oil ISO 68)

### HYDRAULIC OIL DRAIN PLUG

Situated between the wheel motors on the left hand side of Loader



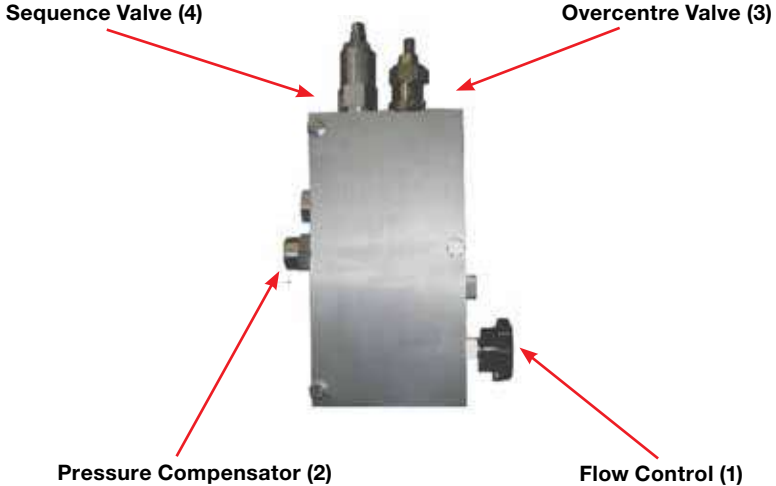
# TRENCHING VALVE

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## DESCRIPTION

The trenching valve is specially designed to convert the Kanga Loader together with the trencher attachment into a high performance trenching machine. The valve provides load sensing to ensure the trencher travel speed stays balanced to the trencher cutting speed regardless of the ground conditions.

The trencher valve assembly comprises a group of cartridges forming a complex circuit. Servicing and repair to the trencher valve is usually restricted to cartridge element replacement.



## CIRCUIT DESCRIPTION

When starting the trenching chain (Aux. Lever down) oil is flowing to VLV A port of the trencher valve. Priority oil flows through the flow control valve (1) and pressure compensator (2) to VLV B port and back to the main control valve for use by the drive motors. Trenching travel speed is adjusted by the flow control valve (1) with speed being constant regardless of trenching and travel loads. Once the priority flow requirements are satisfied excess flow is permitted to flow through the pressure compensator (2) to the A port and to the trencher motor.

**NOTE:** If the flow control valve (1) is fully closed all flow is directed to the trencher motor and no oil can flow to the drive motors; no regulating occurs.

Return oil from the trencher motor flows through the C port and the over centre valve (3) to the Tank (T) port.

In the event of excessively hard trenching with the drive motor driving against the trenching chain the drive circuit pressure will rise above the setting of the sequence valve (4) and it oil will get diverted to the tank. In this condition a constant load is held against the trenching chain by the drive motors. When reversing the trencher chain (Aux. Lever up) eg. to clear the chain from rocks or wood, oil flow is directed to port VLV B. System pressure will rise to the setting of the sequence valve (4) and then flow will get diverted to port C and therefore reversing the trencher motor.

**NOTE:** If the flow control valve (1) is fully closed all flow is directed to the trencher motor and no oil can flow to the drive motors; no regulating occurs.

Return oil from the trencher motor flows through the C port and the over centre valve (3) to the Tank (T) port.

## PRESSURE SETTINGS

Before adjusting anything on the trencher valve check all main pressure settings as outlined in chapter "Service Tasks - Hydraulics" from the Operators Manual.

With the same setup as outlined there: hydraulic oil warmed up, pressure gauge (0-300 bar / 0-3400 PSI) plugged into test point, engine running at full speed (3600 rpm) do the following:

### Over Centre Valve (3) Setting

Flow Control Valve (1) fully closed (turned clockwise).

Aux. Lever (3) on main control valve **down** (trencher chain running forward).

**The pressure should be set at: 69 – 76 bar (1000-1100 PSI) on all models.**

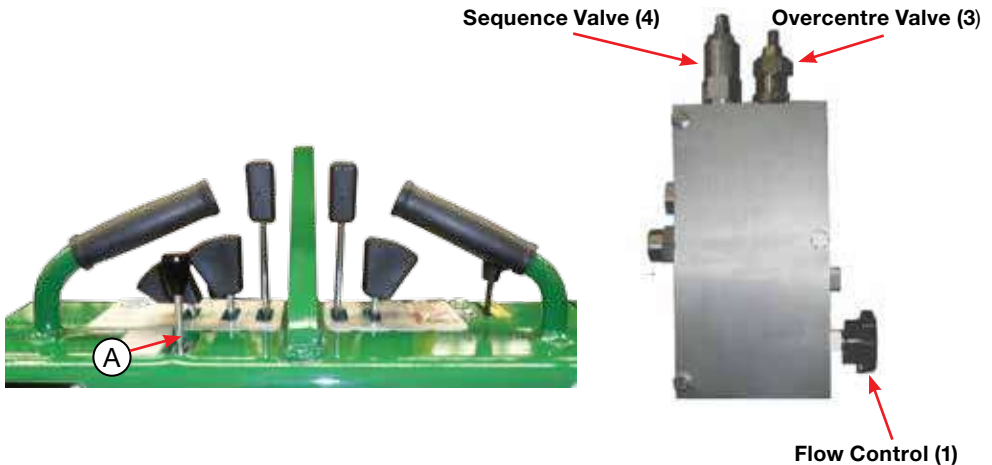
### Sequence Valve (4) Setting

Flow Control Valve (1) fully closed (turned clockwise).

Aux. Lever (3) on main control valve up (trencher chain running backwards).

**The pressure should be set at: 186 bar (2700 PSI) on Mid Range Petrol Models**

**203 bar (2950 PSI) on Mid Range Diesel Models**



### Checking Trenching Valve Function

- With trencher above ground and chain running forward (**Aux Lever (A) down**) pull both drive levers backwards (to reverse Loader) and then start opening **Flow Control valve (1)** slowly.
- The loader should start moving backwards.
- The more the valve is opened the faster the loader should move.

## SERVICE TASKS - VISUAL

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### VISUAL CHECK

Check all over machine for loose bolts, cracks and dents after every 100 operating hours. Tighten loose bolts, and replace if worn or damaged.

## SERVICE TASKS - RADIATOR (DIESEL)

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### RADIATOR

Radiator Hoses and connections should be checked on a regular basis for cracks and wear and the radiator checked for leaks, the radiator fluid should be changed every two years with a coolant to water ratio of 50/50, check the fan belt for wear and replace as required.

## SERVICE TASKS - BATTERY

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### BATTERY- Part Number # L114392

The battery provided with the Loader is maintenance free. An indicator at the top of the battery displays its condition according to a displayed colour. Ensure that the terminals are tight and that covers and battery leads are not damaged.

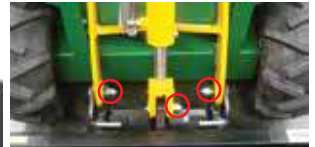
## SERVICE TASKS - GREASE NIPPLE

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### GREASE

Grease\* and inspect for wear, all eleven (11) **linkage pins** after every 100 operating hours. (Grease type Castrol APX T or equivalent).

\* The frequency for regreasing depends on the workload and the severity of the working conditions. Regreasing during the day of operation may be necessary (see Daily Checks).

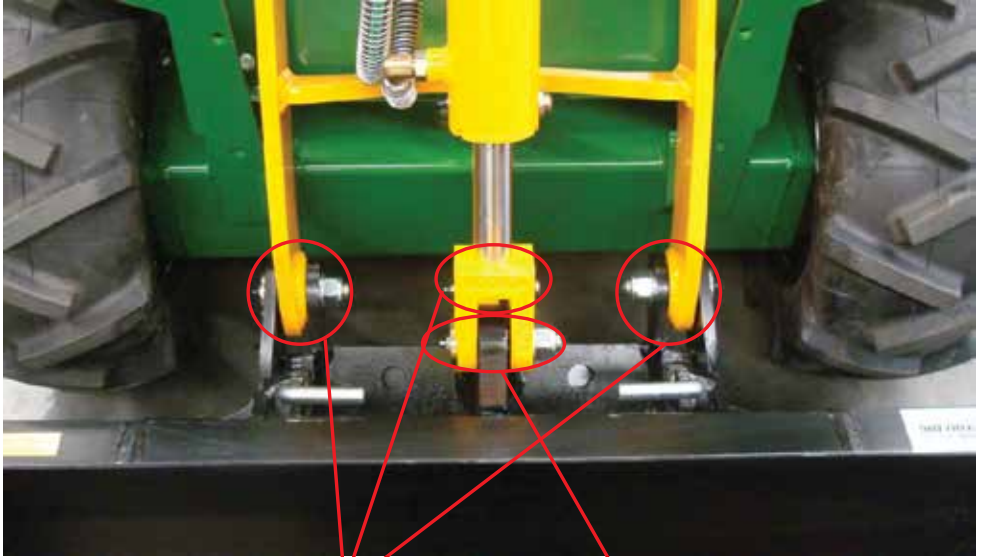


Grease Nipples ○

## SERVICE TASKS - PIVOT PINS

### BOTTOM PIVOT PINS

Before every use, visually inspect all pivot pins for any signs of wear and damage or possible failure. Thoroughly inspect all pivot pins and bushes for wear and damage at an interval of 200 operating hours.



Part No. 0K10800

Part No. 0K10903

0K10700	PIN A (44MM) KIT	x 2
0K10800	PIN B (51MM) KIT	x 3
0K10810	PIN D (55MM) KIT	x 2
0K10900	PIN C (60MM) KIT	x 2
0K10903	PIN G (65MM) KIT	x2 Piston End
L111210	BUSH IRB 1610	x 2
L111410	TOP BUSH IRB 1616	x 5



## SERVICE TASKS - TYRES & PRESSURE

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### **MID RANGE**

**TYRE 23 X 850 X 12 LUG**

**Part Number-L114105**

**TYRE 23 TURF KENDA 23 X 10-5 X 12**

**Part Number-L114106**

**TUBELESS VAL 10-12 RIM**

**Part Number-DL-000995**

**7 X 12 RIM COMPLETE**

**Part Number-0K14206**

**NUTS WHEEL 7/16 UNF**

**Part Number-FA-000530**

**STUD WHL 7-16 KNOCK-IN**

**Part Number-DL-000458**

Visually check tyres on a daily basis and check tyre pressure every 50 operating hours, and check for wear and damage to tyres and tracks.

**Tyre pressures:**

KANGA LOADER TYRE PRESSURES GROSS				
Tyre	Size	Recommended Pressure		Gross weight Kgs (Water Filled)
		KPA	PSI	
Lug 23"	23 X 8.5 X 12	260	38	40
Turf 23"	23 X 8.5 X 12	150	22	40

# SPECIFICATIONS - MID RANGE LOADER

PERFORMANCE	PW628		DW625	
Max. Lift Capacity	250 kg	551 lbs	250 kg	551 lbs
Travel Speed	7 km/h	4.3 mph	7.5 km/h	4.7
Operating Weight (Machine Only with water filled tyres)	875 kg	1929 lbs	972 kg	2138 lbs
Fuel Capacity	45 L	11.8 gal	45 L	11.8 gal
<b>ENGINE</b>				
Manufacturer	Honda GX690		Kubota D902	
Power	16.5 KW	22.1 hp*	17.5 KW	23.5 hp
<b>DRIVE SYSTEM</b>				
Drive Control	Soft Touch Hand Levers		Soft Touch Hand Levers	
Throttle Control	Hand Levers		Hand Lever	
Wheels	Direct Drive Hydraulics Motors		Direct Drive Hydraulic Motors	
<b>HYDRAULICS</b>				
Gear Pump Displacement	11.3 cc/rev	0.69 cu.in/rev	12.5 cc/rev	0.76 cu.in/rev
Pump Output	41 L/min	10.75 US gal/min	45 L/min	11.9 US gal/min
System Pressure	207 bar	3000psi	220 bar	3200 psi
Hyd. Reservoir Capacity	70 L	17.4 US gal	70 L	17.4 US gal
<b>BUCKETS</b>				
Standard Bucket Capacity	0.1 m <sup>3</sup>	3.5 cu.ft	0.1m <sup>3</sup>	3.5 cu.ft
4 in 1 Bucket Capacity	0.1 m <sup>3</sup>	3.5 cu.ft	0.1m <sup>3</sup>	3.5 cu.ft
<b>DIMENSIONS</b>				
<b>A</b> Max Operating Height	2500mm	98.4"	2500mm	98.4"
<b>B</b> Height to Hinge Pin	1855mm	73"	1855mm	73"
<b>C</b> Overall Height	1340mm	52.8"	1340mm	52.8"
<b>D</b> Overall Length With Bucket	2200mm	86.6"	2200mm	86.6"
<b>E</b> Overall Wheel Width	1030mm	40.6"	1030mm	40.6"
<b>F</b> Bucket Reach at 40°	410mm	16.1"	410mm	16.1"
Bucket Max Reach (Level)	1020mm	40.1"	1020mm	40.1"
<b>G</b> Dump Height Std. Bucket	1130mm	44.5"	1130mm	44.5"
Dump Height 4 in 1 Bucket	1855mm	73.0"	1855mm	73.0"
<b>H</b> Bucket Width	1050mm	41.3"	1050mm	41.3"
<b>I</b> Bucket Max Roll Back	40°		40°	
<b>J</b> Bucket Max Dump Angle	60°		60°	
<b>K</b> Ground Penetration	430mm	16.9"	430mm	16.9"
<b>L</b> Overall Length Less Bucket	1660mm	65.4"	1660mm	65.4"
<b>M</b> Ground Clearance	185mm	7.3"	185mm	7.3"
<b>N</b> Angle of Departure	40°		40°	
Approach Angle	90°		90°	

\* Net power the Power rating of the engine indicated in this document is the net power of the production engine only and is measured in accordance with SAE J 1349 at 3600 Rpm, Mass production engines may vary from this value, Actual power output for the engine installed in the final machine May vary depending on numerous factors, including operation speed of the engine in application, environmental conditions and other variables.

# TROUBLE SHOOTING

This section contains trouble-shooting information to be used for locating and correcting problems which may develop with your KANGA Loader. Troubleshooting and maintenance information relating to the engine are contained in the Engine Manual.

## ARMS

TROUBLE	PROBABLE CAUSE	REMEDY
<b>Arm will not rise.</b>	Load capacity exceeded.	Reduce load. Load should not exceed the specified SWL displayed on the machine.
	Hydraulic system oil level low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked hydraulic line.	Remove line and remove any obstructions or replace line as necessary.
	Malfunctioning hydraulic pump.	Replace Hydraulic Pump as necessary.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Contact Service Agent.
	Lift Control Valve relief set too low, allowing oil to return to reservoir.	Adjust relief valve to proper setting. Contact service Agent.
	Excessive oil leak past lift cylinder piston seal.	Repair or replace cylinder as necessary.
<b>Arm will not lower.</b>	Hydraulic oil system low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked hydraulic line.	Remove line and remove any obstructions or replace line as necessary.
	Malfunctioning pump.	Replace Hydraulic Pump as necessary.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Contact Service Agent.
	Control rod or lever broken or disconnected.	Repair or replace control rod or lever.
<b>Arm Lowers with control lever in neutral.</b>	Worn Control Valve spool.	Repair or replace valve as required.
	Lift ram piston seal leaking.	Replace seals.
<b>Arm will not rise, or rises slowly.</b>	Lift Control Valve relief set too low allowing oil to return to reservoir.	Adjust relief valve to proper setting. Contact Service Agent.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Contact Service Agent.
	Excessive oil leak past lift cylinder piston seal.	Repair or replace cylinder as necessary.

	Control rod or lever broken or disconnected.	Repair or replace control rod or lever.
	Hydraulic lines incorrectly connected at Control Valve.	Correctly connect line at Control Valve.
<b>Arm rises and lowers erratically.</b>	Lift Control Valve relief set too low, allowing oil to return to reservoir.	Adjust relief valve to proper setting.
	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked line.	Remove line and remove any obstructions or replace line as necessary.
	Malfunctioning pump.	Repair or replace hydraulic pump as necessary.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Repair or replace valve as required.
	Excessive oil leak past lift cylinder piston seal.	Repair or replace cylinder as necessary.
	Arm pivot pin seized or otherwise damaged.	Replace pivot pin and bushing as necessary. Grease thoroughly.

## HYDRAULIC PUMP

TROUBLE	PROBABLE CAUSE	REMEDY
<b>Flow from hydraulic pump erratic or non existent.</b>	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked line.	Remove line and remove any obstructions or replace line as necessary.
	Worn or chipped pump gears.	Replace pump gears as necessary.
	Worn or broken drive shaft or coupling.	Inspect drive shaft or coupling. Repair or replace as necessary.
<b>Hydraulic pump noisy.</b>	Air in hydraulic system.	Check suction side or hydraulic system for defects and repair as necessary. Ensure no leaks exist in the suction line.
	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Worn or broken drive shaft or coupling.	Inspect drive shaft or coupling. Repair or replace as necessary.
	Worn or chipped pump gears.	Replace pump gears as necessary.

## DRIVE SYSTEM

TROUBLE	PROBABLE CAUSE	REMEDY
<b>Machine will not drive forwards or backwards.</b>	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Repair or replace valve as required.
	Damaged or blocked line.	Remove line and remove any obstructions or replace line as necessary.
	Control rod or lever broken or disconnected.	Repair or replace control rod or lever.
	Hydraulic lines incorrectly connected at Control Valve.	Correctly connect line at Control Valve.
	Malfunctioning pump.	Repair or replace pump.
<b>Machine drive speed is erratic.</b>	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked line.	Remove line and remove any obstructions or replace line as necessary.
	Binding drive motor(s).	Repair or replace motor(s) as necessary.
	Relief valve setting.	Adjust relief valve.

## AUXILIARY HYDRAULIC

TROUBLE	PROBABLE CAUSE	REMEDY
<b>Attachment is slow or will not function.</b>	Hydraulic system oil low.	Check oil and replenish as necessary. Oil level should not change. Leaks may be present.
	Damaged or blocked line.	Remove line and remove any obstructions or replace line as necessary.
	Malfunctioning pump.	Replace Hydraulic Pump as necessary.
	Worn Control Valve spool.	Check pressure delivery from Control Valve. Repair or replace valve as required.
	Attachment plate pivot pin seized or otherwise damaged.	Replace pivot pin and bushing as necessary. Grease thoroughly.
	Excessive oil leak past cylinder piston seal or motor rotating group.	Repair or replace cylinder motor as necessary.
	Control rod or lever broken or disconnected.	Repair or replace control rod or lever.

## ENGINE

TROUBLE	PROBABLE CAUSE	REMEDY
<b>Engine will not crank over.</b>	Low battery output.	Recharge or replace battery.
	Loose, disconnected or broken battery cables.	Inspect cable(s) and tighten all connections. Repair or replace cables as necessary.
	Faulty Starter.	Repair or replace starter.
	Faulty circuit wiring.	Check wiring continuity.
	Engine flooded (petrol).	Remove spark plug and crank.
<b>Engine cranks but not fires.</b>	No fuel in tank.	Refill fuel tank.
	Spark plug fouled (petrol engines).	Check spark plug gap and clean or replace spark plug.
	Dirty fuel filter.	Clean filter.
	Carburettor flood (petrol engines).	Clear carburettor.
	Fuel valve closed.	Open valve.
<b>Engine runs but stalls.</b>	Spark plug fouled (petrol engines).	Check spark plug gap & clean or replace.
	Fuel valve closed.	Open valve.
	Low battery output.	Recharge or replace battery.
	Power take-off engaged	Shift power take-off lever into neutral.

# HOW TO CONTACT US

## SERVICE CENTRES - SPARE PARTS, SERVICE & SUPPORT

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### QLD SERVICE

Phone: Aus: (07) 3441 9222  
Int: +61 7 3441 9200

Fax: Aus: (07) 5546 7922  
Int: +61 7 5546 7922

Address: 4 Octal Street  
Yatala, QLD 4207

### VIC SERVICE

Phone: Aus: (03) 8793 6600  
Int: +61 3 8793 6600

Fax: Aus: (03) 9791 6911  
Int: +61 3 9791 6911

Address: 85 Cheltenham Road,  
Dandenong, VIC 3175

### NSW SERVICE

Phone: Aus: (02) 9854 1444  
Int: +61 2 9854 1444

Fax: Aus: (02) 9832 7700  
Int: +61 2 9832 7700

Address: 1/35 Sterling Road,  
Minchinbury, NSW 2770

### SOUTHERN NSW AND ACT

Phone: Aus: (02) 6297 9099  
Int: +61 2 6297 9099

Fax: Aus: (02) 6297 9199  
Int: +61 2 6297 9199

Address: 2/49 Yass Road  
Queanbeyan, NSW 2620

## SALES

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Phone: 1300 4 KANGA (1300 4 52642)

## SPARES

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Email: [parts@kangaloader.com](mailto:parts@kangaloader.com)

## SERVICE BOOKINGS

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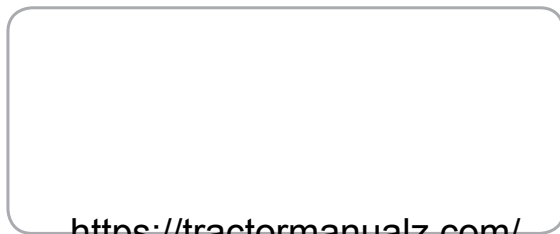
Email: [service@kangaloader.com](mailto:service@kangaloader.com)

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### DEALER STAMP



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