



STICK RAKES

OPERATORS MANUAL

Kanga Farm Equipment is manufactured and/or distributed in Australia by Farm Implements P/L. Farm Implements is an Australian owned and run company and we would like to thank you for buying one of our KANGA FARM EQUIPMENT implements.

Kanga Farm Equipment has designed and manufactured three point linkage implements to handle the harsh Australian Conditions, since 1982. Kanga Farm Equipment Implements are backed with a 12 month comprehensive warranty, against faulty workmanship and/or materials, under normal working conditions and service.

Consumers are advised that your warranty maybe considered void if any damaged to the implement is caused by operator abuse, neglect, or if any unauthorized modifications have been made.

*Farm Implements P/L and its Distributors/Dealers are not responsible for any transportation cost incurred in the repair or replacement of parts in either a successful or non-successful warranty claim and we wish to advise that consumers who wish to lodge a claim **MUST** follow the procedures set out in our Warranty Registration and Installation Form which complies with 'Australian Consumer Law' and Schedule 2 of the Competition and Consumer Act 2010 (Cth).*

The information contained in this manual was current at the time of printing and has been compiled specially to assist you with the Implement that you have purchased.

*It is of the utmost importance that you read this manual, understand the context and **carry out a risk assessment** before operating the implement.*

Please be aware that in an effort to bring you better products we are always implementing continuous improvements that may change the designs and specifications of the Implement. In doing this, Farm Implements P/L together with its Dealers and Distributors are under no obligation to implement these changes, free of charge, on any previously delivered Implement.

TO THE DEALER

Assembly and proper installation of this product is the responsibility of the reseller/dealer. The onus is also in the dealer to complete the Warranty Registration & Installation Form in conjunction with the customer before releasing the implement to them.

Both dealer and customer must sign the registration form, which certifies that all Dealer Checklist items have been completed and then return a copy of the Warranty Registration & Installation Form to Farm Implements P/L. Reminders about Warranty Registration that have not been returned will be sent out to demonstrate that reasonable attempts have been made to ensure dealers complete risk assessment and pre-delivery obligations.

TO THE OWNER

Read this manual before operating your KANGA FARM EQUIPMENT implement. The information presented will prepare you to do a much better and safer job. Keep this manual handy as a reference. Ensure you carry out and keep up to date a Risk Assessment and that all operators read the manual carefully and become acquainted with the adjustments and operating procedures before attempting to operate. Keep a record of the risk assessment and that the operator has read and understands the correct operating procedures as outlined in this manual.

The implement you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require routine cleaning, upkeep and maintenance. Lubricate the implement as specified. Observe all safety information in this manual and safety decals on the implement.

Throughout this manual the term **IMPORTANT** is used to indicate that a failure to observe can cause damage to the equipment. The terms **CAUTION**, **WARNING** and **DANGER** are used in conjunction with the Safety-Alert Symbol (triangle with an exclamation mark) to indicate the degree of risk to your personal safety.



This Safety-Alert Symbol indicates a hazard and means ATTENTION! BE CAREFUL! YOUR SAFETY IS INVOLVED!



DANGER indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.



CAUTION indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

GENERAL INFORMATION

The purpose of this manual is to assist you in operating and maintaining your KANGA implement. Read it carefully. It provides information and instructions that will help you achieve years of dependable performance. These instructions have been compiled from extensive field experience and engineering data. Some information may be general in nature due to the unknown and varying operating conditions. However, through experience and these instructions, you should be able to develop procedures suitable to your particular situation.

The illustrations and data used in this manual were current at the time of printing, but in an effort to bring you better products we are always implementing continuous improvements that may vary your implement slightly in detail. We reserve the right to redesign and change the machine as may be necessary without notice.



Some illustrations in this manual show the Safety Shields removed to provide a better view.

The implement should never be operated with any safety shielding removed.

Throughout manuals, references are made to right and left direction. These are determined by standing behind the equipment facing the direction of forward travel. Blade rotation is as if viewed from the top.



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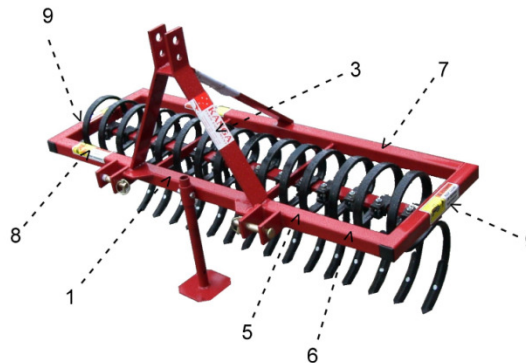
SPECIFICATIONS

	1.8m		2.4m		3.0m
3 – Point Linkage	Category 1	Category 1	Category 1
Frame Material	RHS	.....	RHS	.....	RHS
Frame Material Dimensions	50 x 50 x 4	.....	50 x 50 x 4	.....	65 x 65 x 4
Tine Dimensions	32 x 10mm	.....	32 x 10mm	.....	32 x 10mm
Tine Height (less Point)	390mm	.....	390mm	.....	390mm
Tine Point Dimensions	190 x 37 x 6	.....	190 x 37 x 6	.....	190 x 37 x 6
Overall Width	1800mm	.....	2500mm	.....	3100mm
Approximate Weight	60 kg	.....	75kg	.....	110kg
Tractor Horsepower (hp)	15 – 30	.....	30 – 45	.....	40-90

SAFETY RULES & ACCIDENT PREVENTION



ATTENTION! BE CAREFUL! YOUR SAFETY IS INVOLVED!



1 – Serial Number Plate



2 – Kanga Logo



4 – Safety Decal K0001



5 – Safety Decal K0002



6 – Safety Decal K0003



7 – Safety Decal K0004



SAFETY RULES & ACCIDENT PREVENTION



ATTENTION! BE CAREFUL! YOUR SAFETY IS INVOLVED!



Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said, *“The best safety devise is an informed careful operator.”* We ask you to be that kind of operator.

- **Customers MUST carry their own Risk Assessment and/or “HazCheck” on every implement on their property.**
- **Safety instructions are important! Read all attachments and unit manuals; follow all safety rules and safety decal information. Failure to follow instructions can result in serious injury or death.**
- **If you do not understand any part of this manual and need assistance the Department of Agriculture, Occupational Health & Safety Offices, any Agricultural School or college and your local dealer should be able to direct you on where you can receive appropriate training. No operator however experienced in farm machinery operation they maybe, should attempt to use any piece of machinery that they have not been competently trained to use.**
- **Keep hands and body away from pressurized lines. Use paper or cardboard, not hands or other body parts to check for leaks. Wear safety goggles. Hydraulic fluid (oil) under pressure can easily penetrate the skin and will cause serious injury or death.**
- **Make sure that all operating and service personnel know that if hydraulic fluid (oil) penetrates the skin, it must be surgically removed as soon as possible by a doctor familiar with this form of injury or gangrene, serious injury or death will result. CONTACT A PHYSICAN IMMEDIATELY IF FLUID ENTERS SKIN OR EYES. DO NOT DELAY.**
- **Know your controls and how to stop quickly in an emergency.**
- **Operators must be instructed in and be capable of the safe operation of the equipment and all controls. Do not allow anyone to operate this equipment without proper instruction.**
- **Do not allow children or untrained persons to operate equipment.**
- **Check that all hardware is tight and properly installed.**
- **Always wear relatively tight fitted clothing to avoid entanglement in moving parts. Wear heavy-duty, rough-soled boots and protective equipment for eyes, hair, hands, hearing and head.**
- **Ensure implement is properly attached, adjusted and in a good condition so that it can be operate safely.**
- **Tractors MUST be fitted with Roll Over Protection Structure (ROBS) or ROBS Cap. It is also advisable that your tractor be fitted with a seatbelt, where fitted it must be worn at all times. Falling from your tractor can result in death from being run over or crushed. If your tractor is fitted with a folding ROBS, keep it in the “locked up” position at all times.**
- **Inspect chains, shackles, deflectors and any wear parts for damage. Replace if damaged.**
- **Remove any debris that has accumulated on the implement, tractor or engine to avoid fire hazard.**
- **Ensure all safety decals are installed. Replace if damaged.**
- **A minimum 20% of tractor and equipment weight must be on the tractor’s front wheels with implement in the transport position. Without this weight, tractor could tip over causing personal injury or death. The weight maybe attained with a loader, front wheel weights, and ballast in the tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the ROPS max ballasted mass certificate. Weight the tractor and implement. Do not estimate.**
- **Watch for hidden hazards on the terrain during operation and avoid any hazards or object that could cause injury or damage.**
- **Inspect operating area, remove where possible any stones, branches or foreign objects that may cause injury or damage. It is very important to always watch for foreign objects in the area you are operating and avoid any that could cause injury or damage.**

- When working in populated areas always place signs in the area to alert people or vehicles that may pass. Operation must be stopped when anyone comes within 50 meters.
- Keep all people and animals away from the implement during start up, operating and when stopping.
- Do not operate the implement or tractor while under the influence of drugs or alcohol.
- Operate only in daylight or good artificial light.
- Keep hands, feet, hair, and clothing away from moving parts while engine is running.
- Do not carry persons or objects on the Implement or tractor during work or while in transit.
- For transportation on public roads the operator must ensure that the tractor and implement complies with current State and Federal laws and must strictly adhere to all road traffic regulations in force in his/her particular state.
- Always operate equipment from the seat of the tractor with the seat belt securely fastened especially when operating controls or starting engine. Place transmission in neutral, engage break and ensure all other controls are disengaged before starting tractor engine.
- Look down and to the rear and make sure area is clear and safe before operating in reverse.
- Do not operate on steep slopes. If in doubt set rear axles wider for moderate slopes.
- Do not stop, start or change directions suddenly on slopes', working up and down is preferred.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Stop implement, then tractor, immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operations. Always block implement when inspecting.
- Before commencing any adjustment, maintenance, or cleaning. Always switch off the tractor engine, remove key and wait until all moving parts have come to a complete stop, then ensure the machine is on the ground or on a robust secure support.
- Before dismounting tractor or performing any service or maintenance lower the 3-point linkage and any other raised components (i.e. loader bucket) to the ground. Operate valve levers to release any hydraulic pressure, stop engine, set parking brake, remove key and unfasten seat belt.
- Never place any part of the body underneath the implement or between moveable parts even when engine has been turned off. Hydraulic systems can “creep” (i.e. slowly lower). They may fail or movement of the control levers can cause the implement to drop or rotate unexpectedly causing severe injury or death. Follow Operator’s Manual instructions for working on your implement or have servicing carried out by a qualified dealer.
- During routine checks and/or repairs ensure that no one can switch on the tractor or Implement accidentally. Keep the key to the tractor in your pocket.
- For your own safety and that of others and to avoid forfeiting your warranty, use only original spare parts.
- Do not modify/alter or permit anyone else to modify/alter the implement or any of its components.
- Ensure implement is properly attached, adjusted and in good operating condition.
- Frequently check cutting edge blade. It should be free of nicks and cracks and securely fastened.
- Do not handle cutting edge blades with bare hands. Careless or improper handling may result in serious injury.
- Always use genuine Kanga cutting edges. Your dealer can supply you with genuine replacement parts.
- Firmly tighten all nuts, bolts, screws and shackles before operating. If worn or damaged then replace immediately.
- Block implements securely for storage.
- Keep children and bystanders away from storage area.
- Kanga Farm Equipment accepts no responsibility or liability for any losses, injuries or damages that may result from failing to observe these safety rules and the safety decals on the implement.

OPERATION

Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator.

In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

It has been said, *“The best safety device is an informed careful operator.”* We ask you to be that kind of operator.

The operator is responsible for the safe operation of this implement. The Operator must be properly trained. Operators should be familiar with the implement and tractor and all safety practices before starting operation. Read the safety rules and safety decal information on pages 4, 5 & 6.

This equipment is designed for applications like the scrapping of small branches, twigs and pruning's. The tines are a ground engaging tine but the frame has not been designed for primary cultivation of virgin soil. A careful, experienced operator MAY at a very slow speed, be able to use this implement for the aeration of pre-worked ground (i.e. horse arena, etc.) that they are sure has no hidden obstacles, but in doing so the risk passes fully to the operator because if the tine catches an obstacle, it will result in damage to the frame.

- Always ensure the rake is fully raised when transporting or travelling between work sites.
- Before you begin raking you should visually survey the site you are to be working on ensuring it is free of foreign objects. At this time you should also mark all irrigation heads, utility outlets and any other objects that cannot be moved that could cause damage or injury if not avoided.
- Always select a safe operating speed for your environment and operating in a safe and careful manner.
- When raking the tip of the tine should be adjusted so that it is barely touching the ground. The rake should never be any deeper than 25mm and at this depth the tractor speed should be no more than 2kph.
- Achieving the desired finish may take several passes and/or varied operating techniques. Contact your dealer if you are experiencing trouble. Type of soil as well as the condition of the ground can have an effect on the desired finish. In some circumstances the ground conditions can heavily influence the desired finish to a point where it is not achievable. Kanga cannot accept responsibility for things it cannot control (i.e. ground conditions).
- With a little practice, you should begin to constantly achieve the desired results.

WARNING

- **Do not allow children or untrained persons to operate this implement**
- **Keep all people and animals away from the implement during start up, operating and when stopping.**
- **Keep all persons away from the operator control area when performing adjustments or maintenance.**
- **Never place any part of the body underneath the implement or between moveable parts even when engine has been turned off. Hydraulic systems can “creep” (i.e. slowly lower). They can fail or movement of the control levers can cause the implement to drop unexpectedly causing severe injury or death. Follow Operator's Manual instructions for working on your implement or have serviced by a qualified dealer.**
- **Keep all persons away from operators control area while performing adjustments, service or maintenance.**
- **Service work does not require going underneath this implement. Read Operators Manual for service instructions or have work carried out by a qualified dealer.**

DANGER

- **When operating along roads, pathways or highly populated areas always place signs in the area to alert people or vehicles that may be passing. Operation must be stopped when anyone comes within 50 meters.**
- **Stop implement, then tractor, immediately upon striking an obstruction. Turn off engine, remove key, inspect and repair any damage before resuming operations.**
- **A minimum 20% of tractor and equipment weight must be on the tractor's front wheels with implement in transport position. Without this weight, tractor could tip over causing personal injury or death. The weight may be attained with a loader, front wheel weights, and ballast in the tires or front tractor weights. When attaining the minimum 20% weight on the front wheels, you must not exceed the ROPS max ballasted mass certificate. Weight the tractor and implement. Do not estimate.**

ATTACHING TO THE IMPLEMENT

Remove tractor draw bar to eliminate interference with the implement. Attach the implement with the hitch pins supplied to the lower link arms of the tractor and secure with lynch pins. Attach tractor top link to implement top clevis with top hitch pin and secure with lynch pin.

⚠ WARNING

- When connecting the tractor to the implement never stand in between the tractor and the implement and always find somewhere level or flat.
- The Stick Rake you have purchased should not be mounted on tractors greater than that specified in the “Specifications: section of this manual.
- Always adjust the tractor lower linkage arms anti-sway devices to prevent implement from swing from side to side during transport and operation. Failure to do so may result in serious injury or damage. Damage like bent and twisted implement towers are **NOT** covered by warranty.
- Before dismounting tractor or performing any service or maintenance lower the 3-point linkage and any other raised components (i.e. loader bucket) to the ground. Operate valve levers to release any hydraulic pressure, stop engine, set parking brake, remove key and unfasten seat belt (if fitted).
- During routine checks and/or repairs and changing implement settings, ensure that no one can switch on the tractor or Implement accidentally. Keep the key to the tractor in your pocket.

There are no adjustments on the Fixed Stick Rake. It should be delivered to the purchaser assembled. After 5 hours of use the customer is advice to check all hardware (nuts, bolts, etc) and ensure they are securely fastened.

⚠ IMPORTANT

- Vibration tends to loosen bolts during operation. All hardware should be checked regularly. It is good practice to check implement before each operation to ensure all hardware is secure.

⚠ WARNING

- Do not operate on steep slopes
- Do not stop, start or change directions suddenly on slopes.
- Use extreme care and reduce ground speed on slopes and rough terrain.
- Watch for hidden hazards on the terrain during operation.
- Pass diagonally through sharp dips and avoid sharp drops.

Removing Implement from Tractor

Lower implement all the way to the ground. Turn of tractor ignition and remove key. Firmly apply park break, remove seatbelt (if fitted) and dismount the tractor. Block implement securely for storage with robust secure support, remove lower linkage pins. Slowly move tractor away from implement checking that implement will not fall from blocking.

Daily Pre-Operation Checklist

(Operators Responsibility)

- Operators MUST carry out a Risk Assessment and/or “HazCheck” for the implement and ensure it is correct for the conditions the implement will be operating.
- Review and follow safety rules outlined in this manual
- Check that implement is properly and securely attached to the tractor
- Check all hardware (i.e. bolts, nuts, shackles, chains, etc.) are properly installed, secured and in good working condition.
- Check the wear point (tip). Reserve and/or replace if required.
- Ensure tractor transmission is in neutral before starting engine.
- Inspect area that you will be operating in and remove any object that may cause injury or damage.

MAINTENANCE AND BLOCKING METHOD

⚠ WARNING

- Before dismantling tractor or performing any service or maintenance disengages power to implement, lower the 3-point linkage and any other raised components (i.e. loader bucket) to the ground. Operate valve levers to release any hydraulic pressure, stop engine, set parking brake, remove key and unfasten seat belt.
- Never place any part of the body underneath the implement or between moveable parts even when engine has been turned off. Hydraulic systems can “creep” (i.e. slowly lower). They can fail or movement of the control levers can cause the implement to drop or rotate unexpectedly causing severe injury or death. Follow Operator’s Manual instructions for working on your implement or have servicing carried out by a qualified dealer.
- During routine checks and/or repairs, ensure that no one can switch on the tractor or Implement accidentally. Keep the key to the tractor in your pocket.
- Service work does not require going underneath this implement. Read Operators Manual for service instructions or have servicing carried out by a qualified dealer.
- Always wear relatively tight fitted clothing to avoid entanglement in moving parts. Wear heavy-duty, rough-soled boots and protective equipment for eyes, hair, hands, hearing and head.

Lubrication – Use good multi-purpose grease on the Turn Table of the Adjustable Model

Blocking Method

To minimize the potential hazards of working underneath the implement, these procedures must be followed. Jack stands with a load rating of 500kg or more are the only approved blocking devices for this implement. Do not position jack stands under wheels, axles or wheel supports as components can rotate and cause implement to fall. When blocking, you must consider the overall stability of the implement. Just placing jack stands under the unit will not ensure your safety. The working surface must be level and solid to support the weight of the jack stands. Ensure jack stands are stable both top and bottom, and implement is approximately level. With full implement weight lowered onto jack stands, test blocking stability before working underneath implement. Implement should be properly and securely attached to the tractor (see operating section), the brake firmly set, key removed and both front and rear tractor wheels securely blocked.

ASSEMBLY INSTRUCTIONS

⚠ WARNING

- Before dismantling tractor or performing any service or maintenance lower the 3-point linkage and any other raised components (i.e. loader bucket) to the ground. Operate valve levers to release any hydraulic pressure, stop engine, set parking brake, remove key and unfasten seat belt (if fitted).
- Never place any part of the body underneath the implement or between moveable parts even when engine has been turned off. Hydraulic systems can “creep” (i.e. slowly lower). They can fail or movement of the control levers can cause the implement to drop or rotate unexpectedly causing severe injury or death. Follow Operator’s Manual instructions for working on your implement or have servicing carried out by a qualified dealer.
- During routine checks and/or repairs, ensure that no one can switch on the tractor or Implement accidentally. Keep the key to the tractor in your pocket.
- Service work does not require going underneath this implement. Read Operators Manual for instructions
- Always wear relatively tight fitted clothing to avoid entanglement in moving parts. Wear heavy-duty, rough-soled boots and protective equipment for eyes, hair, hands, hearing and head.

Assembly of this implement is the responsibility of the KANGA FARM EQUIPMENT dealer. It should be delivered to the new owner completely assembled, lubricated and adjusted for normal conditions.

The Fixed Stick Rake does not need assembly.

To assemble the Adjustable Stick Rake, remove “wing nut” from rake section’ threaded shaft. Place shaft through the hole in the middle of the headstock turntable. Screw nut back on to threaded shaft and firmly tighten.

Complete dealer checklist when assembly is complete.

Agricultural Machinery Product OHS Compliance Form

We, Farm Implements P/L (formally Gavhall Pty Ltd t/as Kanga Farm Equipment)
 Of, 16 Cahill Street
 Dandenong, Victoria, Australia, 3175
 Telephone: 03-9706-5166
 Fax: 03-9706-5050

Confirm that the following machine(s)

Kanga Fixed Stick Rake

have had a hazard identification, risk assessment and risk control procedure carried out on a representative model of the aforementioned product(s) in accordance with the Occupational Health and Safety requirements of all states and territories of Australia and where found necessary the appropriate risk control measures have been incorporated in the product specifications.

The Operators Manual contains the necessary Health and Safety information and safety warnings decals are applied to the product where necessary.

Product Description: Stick Rakes

Model Number(s): Fixed Model – Product Code(s)
 KSR180 (previously 60100)
 KSR240 (previously 60200)
 KSR300 (previously 60300)



Name: Bruce J Alcott
 Position Managing Director

Date: 10 / 10 / 2006
 (Updated: 01/07/2015)

Details of the unit assessed for the purpose of compliance

Model #	Size	Serial #	Date of Inspection	Location
60100	1.8m	431006	6 / 10 / 2006	16 Cahill St, Dandenong