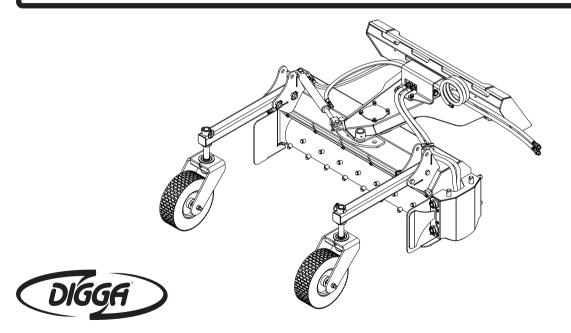
MINI POWER RAKE OPERATOR'S MANUAL



PM-000051

MY.DIGGA.COM



DECAL IS APPLIED TO THE ATTACHMENT

MY.DIGGA.COM



DECAL TO BE APPLIED TO WINDOW OF MACHINE

ACCESS OPERATOR MANUALS RISK ASSESSMENTS AND MORE

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To the Purchaser

Thank you and congratulations on the purchase of your new Digga Mini Power Rake.

This product was carefully designed and manufactured to give you years of dependable service. To keep it running efficiently, please read the instructions in the manual to keep it in top working condition.

Before Operation

Inspect the attachment for shipping damage and if any damage does exist, do not operate until the damaged parts have been replaced or repaired. The primary responsibility for safety with this equipment falls to the operator. Make sure the equipment is operated only by trained individuals that have read and understood this manual. If there is any portion of this manual or function you do not understand, contact your local authorized Digga dealer or the manufacturer to obtain further assistance. Keep this manual available for reference. Provide the manual to any new owners and/or operators.

About This Manual

This manual has been designed to help you do a better and safer job. Read this manual carefully and become familiar with its contents before connecting and operating this unit.

No responsibility will be taken by Digga for any omissions or errors in this manual as all data is correct at time of print, however Digga reserve the right to revise this manual without further notice.

Service

Use only manufacturer replacement parts. Substitute parts may not meet the required standards.



CAUTION

Never allow anyone to operate this attachment without reading the "Safety precautions" and "Operating instructions" sections of this manual. Always choose hard and level ground to park the vehicle on and set the brake, so the unit cannot roll.

Product Identification

MODELS COVERED IN THIS MANUAL		
MINI POWER RAKE		
PR-480001 - MINI POWER RAKE 48" (HYDRAULIC SLEW - DUAL REMOTES) - MULTIFIT	PR-480003 - MINI POWER RAKE 48" (MANUAL SLEW)	
PR-480148 - MINI POWER RAKE 48" (HYDRAULIC SLEW WITH PLUG 'N' GO) - ASV RC30	PR-480004 - MINI POWER RAKE 48" (MANUAL SLEW) - ASV RC30	
PR-480151 - MINI POWER RAKE 48" (HYDRAULIC SLEW - DUAL REMOTES) - TOYOTA 4SDK5	PR-480152 - MINI POWER RAKE 48" (MANUAL SLEW) - TOYOTA 4SDK5	
PR-480006 - MINI POWER RAKE 48" (HYDRAULIC SLEW) - DIRECT CONNECT	PR-480149 - MINI POWER RAKE 48" (MANUAL SLEW) - BOBCAT	
	PR-480150 - MINI POWER RAKE 48" (MANUAL SLEW) - VERMEER	

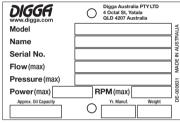
Your Digga Mini Power Rake model provides important information about the product. Compare the model engraved on the serial plate to the list above.

NOTE

Please refer to PM-000055 for the installation of Hydraulic Retrofit Kit for conversion of manual slew to hydraulic slew Mini Power Rake.

Product Identification

Your Digga Mini Power Rake is a user non-serviceable part. When servicing or assembling your product, use only genuine Digga replacement parts. Substitute parts may not meet the standards required for safe and dependable operation. Use of non genuine Digga parts will void warranty and Digga accept no liability what so ever for consequential or special damages. All service must be performed by qualified professionals. Contact your local Digga dealer for details. To facilitate warranty or service, record the model and serial number of your unit in the space provided on this page. This information may be obtained from the identification plate located on the product.



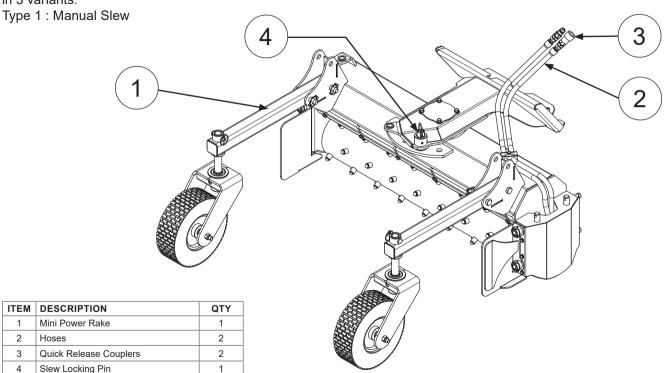
DE-000631 - AUS & NZ

Model:	
Serial Number:	
Purchase Date:	

NOTE

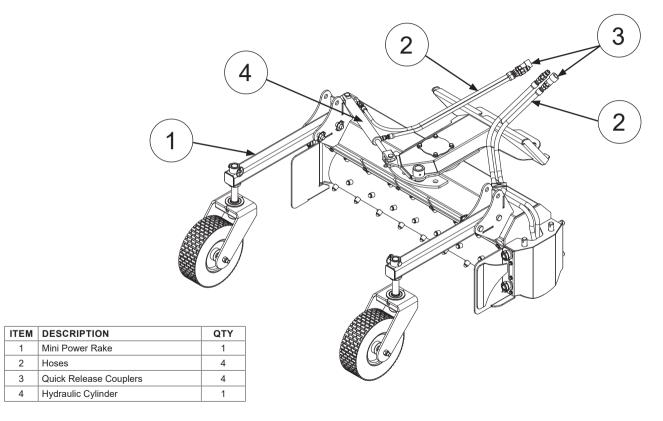
The parts department needs this information to ensure accurate parts can be sent to the authorized service agent.

To avoid any inconvenience before operation, please check that you have received the following items which you have ordered. Items may differ depending on type of machine the Mini Power Rake is to be fitted to. It is produced in 3 variants:

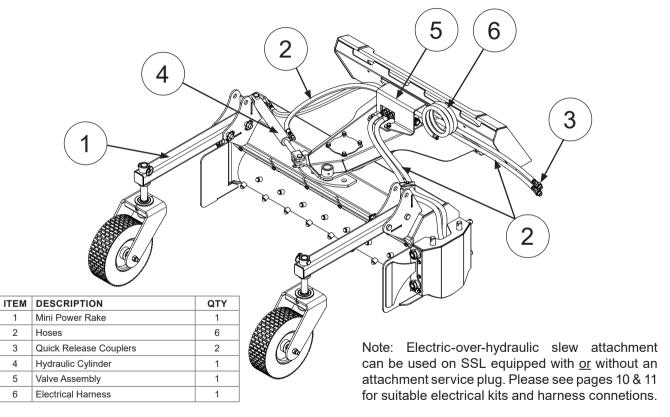


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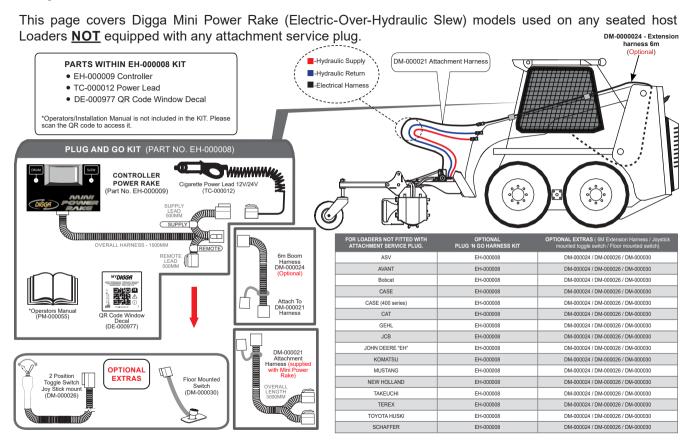
Type 2 : Hydaulic Slew; For machines with dual set of hydraulilc couplers.



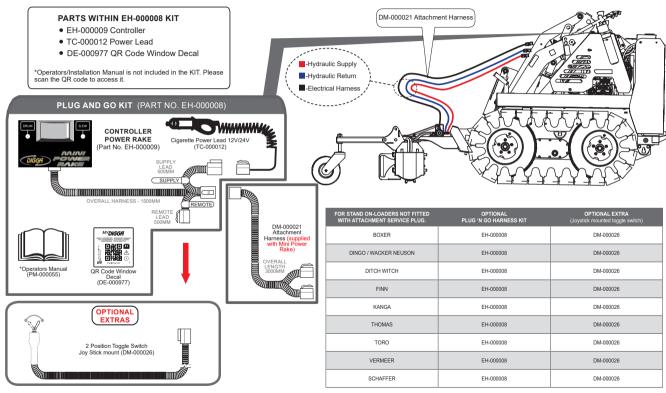
Type 3: Electric-Over-Hydraulic Slew. For machines with a single set of hydraulic couplers.



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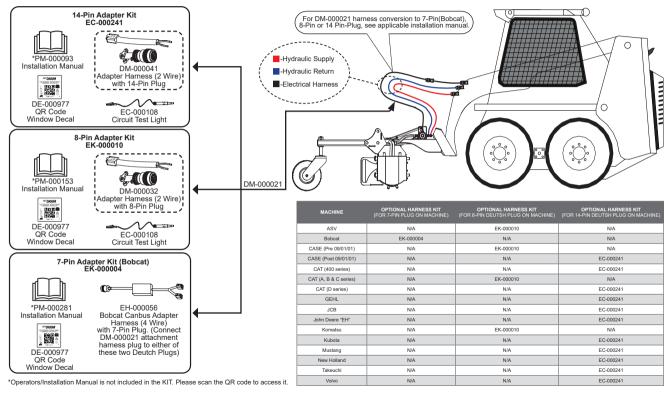


This page covers Digga Mini Power Rake (Electric-Over-Hydraulic Slew) models used on any stand on host Loaders **NOT** equipped with any attachment service plug.



V1.0

This page covers Digga Mini Power Rake (Electric-Over-Hydraulic Slew) models when connected to any host Loader equipped with a 7-Pin (Bobcat); 8-Pin or 14-Pin attachment serivce plug.



You must understand all safety statements shown on your attachment and in this manual. Especially note the information called out by the designations shown below. Follow these safety precautions, when operating or maintaining the attachment.



DANGER

The DANGER designation indicates an imminently hazardous situation that, if not avoided, will result in death.



WARNING

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



CAUTION

The CAUTION designation indicates a potentially hazardous situation that, if not avoided, could result in minor or moderate injury or property damage.

NOTE

You will also see information called out with the NOTE designation. This additional safety or general information is important to the maintenance and operation of your loader.

During day-to-day operation of your attachment, you will encounter a variety of situations beyond those listed in this manual. We encourage you to assess the risk present at any job site and in every work task before beginning work. Apply appropriate risk mitigation strategies to make safety a first priority at all times, and if these are not sufficient, stop the job and immediately seek the help of a qualified safety consultant.

Know where utilities are:

- Observe overhead electrical and other utility lines. Be sure the equipment will clear them.
- Before starting any digging project, lodge an enquiry with BYDA (Before you Dig Australia) or your local
 utilities location service for the identification of buried electrical, telephone, cable wires, gas, water and
 sewer lines are likely to be present. Unintentionally disrupting these hidden hazards while working with
 your loader can result in dangerous situations and property damage.
- Only commence works after having received and studied the underground plans and information thoroughly. Never begin work until the work area has been fully marked for underground utilities.
- For more information about digging best practices access **www.byda.com.au**. Many countries offer a similar service which advises the location of underground services in your area. If available use this service prior to digging, drilling, trenching or any form of excavating and earth-moving.



CAUTION

You must ensure that underground utilities have been officially marked before working in the area. Markings must be valid according to state law or practice.

Exposure to Respirable Crystalline Silica Dust Along with Other Hazardous Dusts:

• It is recommended to use dust suppression, dust collection, and if necessary personal protective equipment during the operation of this or any other machine attachment that may cause high levels of dust.

Remove Paint Before Welding or Heating:

- Hazardous fumes/dust can be generated when paint is heated by welding, soldering, or using a torch.
- Do all work outside or in a well ventilated area and dispose of paint and solvent properly.
- Remove paint before welding or heating. When sanding or grinding paint, avoid breathing the dust. Wear
 an approved respirator. If you use solvent or paint stripper, remove stripper with soap and water before
 welding. Remove solvent or paint stripper containers and other flammable material from the area. Allow
 fumes to disperse at least 15 minutes before welding or heating.

End of Life Disposal:

• At the completion of the useful life of the attachment drain all fluids and dismantle it, by separating the different materials (rubber, steel, plastic, etc.). Follow all federal, state and local regulations for recycling and disposal of the fluid and components.

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Operating the Mini Power Rake:

- The primary responsibility for safety with this equipment falls to the operator. Make sure that the equipment is operated only by trained individuals, who have read and understood this manual.
- An operator must not use drugs or alcohol, which can change his or her alertness or coordination. An
 operator taking prescription or over-the-counter drugs should seek medical advice on whether or not he or
 she can safely operate the equipment.
- Don't hurry the learning process or take the unit for granted.
- It is the skill, care, common sense, and good judgment of the operator that will determine how efficiently and safely the job is performed.
- Visually inspect your equipment, ensure correct assembly and installation is done and never operate the equipment that is not in proper working order.
- Know the capabilities of your equipment and practice its operation to become familiar with the controls, emergency shut down procedures, and the way it handles on your machine.
- Follow all safety decals and keep them clean. Replace them, if they become worn, damaged or illegible.
- · Do not paint over, remove or deface any safety signs or warning decals on your equipment.
- Operate only from the operator's station and operate only in daylight or with sufficient artificial light.
- Always carry loads close to the ground and do not exit the machine with the loader arms raised.
- Keep all stepping surfaces, pedals, and controls free from dirt, grease and oil. Keep equipment clean to help avoid injury from slipping or a fall when getting on or off equipment.
- Do not exceed rated operating capacity (ROC) of the host machine, as machine may become unstable resulting in loss of control. Overloading or exceeding the manufacturers specifications will also void all warranty.
- Always lower the loader arms or the machine boom to the ground, shut off the engine and remove the key before getting off the unit.
- Remove the Mini Power Rake from the parent machine before transporting to and from the job site.

- Never use the attachment on a machine that is not equipped with a cab rollover protective structure (ROPS) and/or falling object protective structure (FOPS), and operator restraints (seat belts or equivalent devices).
- Establish and maintain a minimum 15 meters (50 feet) exclusion zone around the working area. No person other than the operator should enter the work zone, while the parent machine's engine is running.
- Do not allow site workers to climb on the attachment at any time, including while stationary, in operation or being moved.
- Avoid steep hillside operation which could cause the machine to overturn. Consult your machine operator's and safety manual for maximum allowable incline.
- Reduce speed when driving over rough terrain, on a slope or turning to avoid overturning the machine.
- Travel only with the Digga Mini Power Rake in a safe transport position to prevent the uncontrolled movement.
- · Drive slowly over rough ground and on slopes.
- Do not drive close to ditches and excavations, etc., as cave in could result.
- Flow and pressure gauges, fittings, and hoses must have a continuous operating pressure rating of at least 25% higher than the highest pressure of the system.
- Turn off engine before performing maintenance. All maintenance can be performed with the machine arms lowered. If lift arms must be left raised for any reason, use a positive lift arm lock to secure the arms in place. Serious damage or personal injury could result from lift arms accidentally lowering.
- All operations must be stopped in the event of local thunderstorm or lightning activity. During operation, weather conditions shall be monitored, operations shall cease during electrical storms or when electrical storms are imminent. Ground personnel and bystanders.
- Be alert to others in the work area. Be sure others know when and where you will be working.
- Loose fitting clothing, long hair, jewellery and equipment which might become entangled in moving equipment are prohibited while working near the Mini Power Rake.
- Operators, helpers, and other personnel working near the attachment must wear steel-toe safety shoes,

safety glasses, and hard hats as a minimum. Hearing protection, respirators, and personal protective clothing will be specified in the site-specific Health and Safety Plan.

- The Mini Power Rake shall be cleaned only when the mechanism is in neutral and stopped.
- The Mini Power Rake shall be used only for its designed intent and shall not be loaded beyond its rated capacity. Overloading or exceeding the manufacturers specifications will void all warranty.
- Do not smoke when refueling the prime mover. Allow room in the fuel tank for expansion. Wipe up any spilled fuel. Secure cap tightly when done.
- The Mini Power Rake must be stopped before making adjustments to the attachment.



CAUTION

Wait for the mechanism completely stop before making any adjustments or cleaning.



DANGER

During Mini Power Rake operation, maintain a minimum "no-work zone" buffer of 10 feet (3 meters) from any overhead electrical service and 6 feet (2 meters) from any underground service. All bystanders should be kept at a minimum of 50 feet (15 meters) away from the working area of the Mini Power Rake.

Storing your Mini Power Rake:

- Seal hydraulic couplers from contaminants. Use dust covers on the quick couplers, or connect the couplers together.
- Clean the unit thoroughly by removing all mud, dirt, grease, etc..
- Inspect for visible signs of wear, breakage, or damage. If required, order any damaged parts and perform the necessary repairs to avoid delays upon removal from storage.
- Check that hydraulic motor and hoses are full of clean oil and apply grease to all grease nipple points.
- Coat liberally with grease all connecting pins to prevent rust and reduce wear.
- Tighten loose nuts, cap screws, and hydraulic connections.
- · Replace safety decals that are damaged or in an unreadable condition.
- Store unit in a dry and protected place, as leaving the unit outside will materially shorten its life.

Maintaining the Mini Power Rake:

- All maintenance should be performed with the engine turned off, parking brakes applied, machine arms lowered, and hydraulic pressure relieved.
- Lock out and tag out the equipment before repairs or maintenance is performed.
- Only properly trained and qualified individuals are permitted to perform repairs and maintenance.
- If lift arms must be left raised for any reason, use a positive lift arm lock to secure the arms in place. Serious damage or personal injury could result from lift arms accidentally lowering.
- Never adjust a relief valve for pressure higher than recommended by the host machine's manufacturer.
- Never adjust a relief valve for pressure higher than shown on the Mini Power Rakes serial tag.

Transporting the Mini Power Rake:

- When transporting your attachment, follow all local government regulations that may apply along with any equipment safety precautions provided in this manual.
- It is the responsibility of the operator that safe systems of work are employed while handling this attachment.
- Use extra care when loading or unloading the attachment on to a trailer or truck and disconnect hydraulic couplers during the transportation. No responsibility for loss or damage to persons or property in any regard can be attributed to Digga.

Tie-Down Points:

- Tie-down points are identified by tie-down decals where required. Securing to trailer at other points is unsafe and can damage the attachment.
- Do not attach tie down accessories around the cylinders or in any way that may damage hoses or hydraulic components.
- Attach tie-down accessories to unit as recommended.
- Attachment should be well secured, when being moved or in transit and furthermore prior to moving, storing, loading/unloading,or parking.
- Verify that all tie down accessories (chains, slings, ropes, shackles, etc.) are capable of maintaining attachment stability during transporting and are attached in such a way to prevent unintended engagement or shifting of the unit. Failure to do so could result in serious personal injury or death.

Safety - Working with the Attachment

Complete a Risk Assessment

Your Digga Mini Power Rake is a versatile machinery attachment, capable of performing its tasks in a safe and effective manner. To ensure the safety of operators and others, it is important to document the work at hand for hazard and risk. Before beginning work, complete a risk assessment. The following steps provide a framework for this activity:

1	DOCUMENT THE ACTIVITY Assemble those involved in the activity. Write down the tasks required for the activity in step-by-step form.
2	IDENTIFY THE HAZARDS Next to each task, identify what part of the task may cause injury to those engaged in the task or others in the vicinity. Rate the consequences and likelihood of the hazard using the risk assessment matrix.
3	DOCUMENT THE CONTROL MEASURES Using the results from the risk assessment matrix, determine which hazards require attention. List all mitigation measures that are required to eliminate or minimize those hazards.
4	IDENTIFY THE RESPONSIBLE PERSON Document the name of the person responsible for implementation of the mitigation measure.
5	MONITOR AND REVIEW Ensure that the activity is supervised and that the documented process is being followed.

NOTE

Remember, Personal Protection Equipment (PPE) provides a level of protection during work, but PPE is the last level of hazard control and prevention. Always refer to the hierarchy of hazard control, when planning a safety process.

Safety - Working with the Attachment

Take Extreme Care When Dealing with Hydraulics - Whilst Assembling, Operating, Maintaining or Performing any work on or near this product.

- Hydraulic fluid under pressure can penetrate the skin and may develop gangrene or other permanent disabilities. Hydraulic leaks under pressure may not be visible!
- If any fluid penetrates the skin, get immediate medical attention!
- Wear safety glasses, protective clothing, and use a sound piece of cardboard or wood when searching for hydraulic leaks. **Do not use your hands!**
- Before connecting or disconnecting hydraulic hoses, read your machine or power unit's operator manual for detailed instructions on connecting and disconnecting hydraulic attachments.
- Ensure that all parts meet the specifications for this product when installing or replacing hydraulic hoses or fittings.
- After connecting hydraulic lines:
 - □ Slowly and carefully raise the loader's arm(s) and cycle the rollback/dump cylinders to check hose clearances and to check for any interference.
 - Operate the hydraulics on this product to ascertain forward and reverse.
 - □ Ensure that the Power Rake drum is rotating in the desired direction.
 - Ensure that the hoses cannot interfere with or actuate the quick-attach mechanism.
 - □ Ensure that hoses will not be pinched, or get tangled, in any equipment.
- Do not lock the auxiliary hydraulics in the "ON" position.
- Refer to host machine operator's manual and this manual for procedures and service intervals, then inspect and maintain the entire hydraulic system to ensure that the fluid remains clean, that all devices function properly, and that there are no fluid leaks.

Safety - Working with the Attachment

NOTE

For any additional safety information please see "Risk Management Booklet". To obtain a copy of this document please contact Digga Head Office.

When Mounting this Product to Your Machine

- Refer to the operator's manual of your host machine for any special or detailed mounting instructions regarding quick-attach mechanism.
- This product should fit onto the quick-attach frame or hitch (machine mount). If this product does not fit properly, contact your Digga dealer before operating.
- Where enabler 'Dead Man' controls are installed it is illegal to disengage, tamper with, or remove them.



WARNING

Never place any part of your body into the mounting plate, frame, hitch or loader holes. A slight movement of the power unit and this product could cause serious injury.

When Adjusting Servicing or Repairing this Product

- Do not make any modifications to your Digga Mini Power Rake.
- When making repairs use only competent service agents and use only genuine Digga parts. For fasteners, hydraulic hoses, or hydraulic fittings, use only properly rated parts.
- Replacement parts must also have safety signs attached.

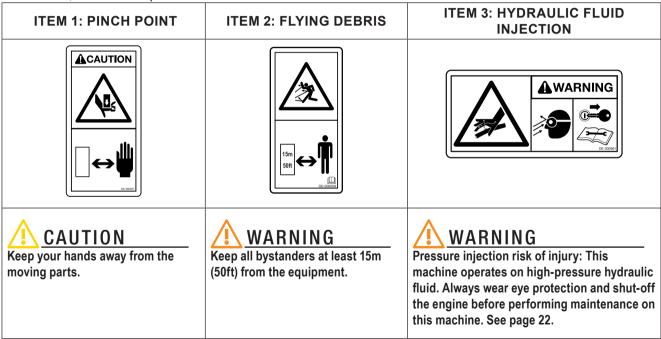


CAUTION

Wait for all moving parts to stop completely before making any adjustments or cleaning.

Safety - Decal Labels

This section provides a glossary of safety labels found on your Digga Mini Power Rake. These labels are important! Become familiar with both their meaning and location prior to operating the attachment. Ensure that each label is clean, visible, and legible at all times. To clean the decal, use a soft cloth, water, and soap. Avoid the use of solvents, gasoline, or other harsh chemicals, as these may damage the decal. If a label has been damaged or removed, it must be replaced.



Safety - Decal Labels

ITEM 4: GREASE POINT BELOW	ITEM 5: LOCK PINS (FOR MANUAL SLEW ONLY)	ITEM 5: PRESSURE TESTED (FOR HYDRAULIC SLEW ONLY)
DE-000659	DE-000965	PRESSURE TESTED
NOTE The label indicates the position of the grease nipples. Refer to "Greasing" on page 44.	NOTE The label indicates where to place the lock pins.	NOTE The label indicates that the hydraulic cylinders are pressure tested.

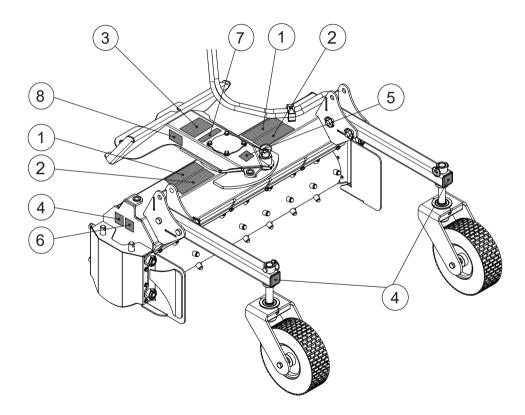
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Safety - Decal Labels

ITEM 6: MY.DIGGA.COM ITEM 7: BEFORE YOU DIG **BEFORE NOTE CAUTION** Scan the QR-code to access: Before you dig. my.digga.com Hidden services must be located. Scan the QR Find manuals, safety information, Code. Please contact your local government guides and more. service providers before you start working.

Safety - Decal Locations

Mini Power Rake with MANUAL SLEW PIVOT:



Safety - Decal Locations (manual slew)

Item 1



Item 2



Item 3



Item 4



Item 6

Item 5





Item 7



Item 8

DIGGA www.digga.com	Digga Australia PTY LTD 4 Octal St, Yatala QLD 4207 Australia	
Model		ALK
Name		MADE IN AUSTRALIA
Serial No.		N.
Flow(max)		MADE
Pressure (max)		- 52
Power(max)	RPM (max)	DE-00063
Approx. Oil Capacity	Yr. Manut. Weight	Di

DE-000631 - AUS & NZ

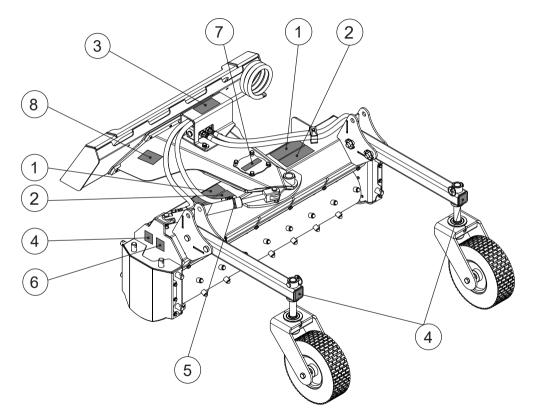
DKIT 1171			
ITEM	ORDER CODE	DESCRIPTION	QTY
1	DE-000957	PINCH POINT HAZARD	2
2	DE-000658	FLUING DEBIRS KEEP DISTANCE	2
3	DE-000961	HYDRAULIC PRESSURE	1
4	DE-000659	GREASE POINT BELOW	3
5	DE-000965	LOCK PINS	1
6	DE-000850	MY.DIGGA.COM	1
7	DE-000046	BEFORE YOU DIG (AUS ONLY)	1
*8	DE-000631	SERIAL TAG : AUS & NZ	1

NOTE

*Serial tag is not included in the DKIT.

Safety - Decal Locations

Mini Power Rake with HYDRAULIC SLEW PIVOT:



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Safety - Decal Locations (hydraulic slew)

Item 1



Item 2



Item 3



Item 4



Item 5

PRESSURE TESTED

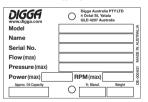
Item 6



Item 7



Item 8



DE-000631 - AUS & NZ

	DKIT 1171		
ITEM	ORDER CODE	DESCRIPTION	QTY
1	DE-000957	PINCH POINT HAZARD	2
2	DE-000658	FLUING DEBIRS KEEP DISTANCE	2
3	DE-000961	HYDRAULIC PRESSURE	1
4	DE-000659	GREASE POINT BELOW	3
5	DE-000055	PRESSURE TESTED	1
6	DE-000850	MY.DIGGA.COM	1
7	DE-000046	BEFORE YOU DIG (AUS ONLY)	1
*8	DE-000631	SERIAL TAG : AUS & NZ	1

NOTE

*Serial tag is not included in the DKIT.

Before Use

The key feature of your Digga Mini Power Rake is low maintenance. When servicing your product remember to use only genuine Digga replacement parts. Use of non-genuine Digga parts will void warranty and Digga will accept no liability what so ever for consequential damages as a result thereof.



DANGER

Safety first!! Read and understand the safety instructions before beginning any maintenance.

Before First Use

Inspect the Mini Power Rake for shipping damage. If damage does exist, do not operate until the damaged parts have been replaced or repaired.

Before Each Use

- Make sure that all nuts and bolts are in place and properly tightened.
- Make sure that all other fasteners are in place and are performing their specified function.
- Make sure that all hydraulic fittings are tightened and that there are no leaks in any fittings or hoses.
- Make sure that all safety signs are in place, are clean, and are legible (refer to "Safety Decal Labels" on pages 24 26).
- Check for wear and tear on pins, pivots, wheel bearings, drum teeth, etc.., and replace any damaged parts and excessively worn parts.
- Use only manufacturer recommended replacement parts. Other parts may be substandard in fit and quality.
- Always wear safety goggles or glasses when inspecting equipment.
- Make sure all shielding is in place.

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Before Use

EVERY WEEK

Lubricate all pivot points.

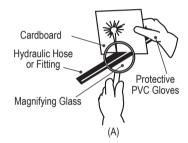
EVERY 40 HOURS OF USE

· Grease all fittings



WARNING

Escaping fluid under pressure as low as 100 PSI can have sufficient force to penetrate the skin up to 4" (100mm) away causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks (A). Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak and use heavy duty PVC protective gloves. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.





WARNING

Always wear the correct PPE, when operating or performing maintenance on this attachment. If a hydraulic fluid injection injury occurs, seek emergency medical attention immediately. Explain to medical staff that the injury is the result of pressurized fluid injection. Remember that even if the point of entry appears as a minor pin hole, this potentially could be a major injury, especially if not treated in time.

Commissioning Procedure

The Digga Mini Power Rake attaches to the tool bar/quick-attach mechanism of your host Machine. Due to this arrangement, thorough knowledge of the machinery controls is necessary for machine operation. Read and understand your host machine operator's manual for information regarding machine operation before attempting to use the Mini Power Rake.

When a Mini Power Rake is purchased from Digga or a Digga Dealer/Distributor, the frame/attachment is matched for suitability and compatibility to the flow, pressures and load ratings of the original machine it was purchased for. For fitment of the Mini Power Rake to other machines you must first contact your DIGGA dealer and receive written confirmation to ensure you do not incorrectly fit the attachment to a machine with higher pressure, or lower rated load capacities than what the product was designed for.

Warranty will be void if the Mini Power Rake is fitted to an alternative machine without first receiving written confirmation from your Digga dealer. Exceeding the recommended maximum flow, pressure, or rated load capacity of the Mini Power Rake as stated on the serial tag will void all warranty.

Check the work site and identify the extent of the work to be carried out and note any possible hazards or constraints. Overhead cables, underground utilities, services, etc. Check with relevant service providers on the location of these before commencement of any work (see "Know where utilities are" on page 14). Review the job at hand and determine the Mini Power Rake is appropriate for the intended conditions. For example: Do not use it as a lifting device.

Loader Specifications

DESCRIPTION	SPECIFICATIONS
Weight of Loader without Mini Power Rake	1500 Kg Maximum
Tipping load of Loader	725 Kg Maximum
Lifting Capacity of Loader	350 Kg Minimum
Hydraulic Pressure Output	3000 psi / 206 Bar Maximum
Rear or Front Ballast	As required to maintain full loader stabilization (Note: See your operator(s) manual for your loader and quick-attachment for ballasting needs.

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Commissioning Procedure

Operating Parameters - HP (kW) Power Ratings

The hydraulic motor of your Mini Power Rake has a maximum power rating. Maximum pressure and flow cannot be achieved at the same time. Ensure you know and understand the maximum flow, pressure and power ratings of your Mini Power Rake and parent machine. Never exceed the maximum ratings listed on the serial tag attached to the side of the Mini Power Rake frame (see page 27 & 29).

Installation instructions

- 1. Remove the shipping banding from around the Mini Power Rake and frame.
- 2. Remove any attachments from the front of the machine.
- 3. Ensure you have read the serial tag on the Mini Power Rake to obtain the maximum flow, pressure and load ratings. Ensure your machine's flow, pressure and load settings align with the requirements of the Mini Power Rake.

NOTE

Never exceed the maximum flow and pressure ratings as the warranty will be void.

4. Following all standard safety practices and the instructions for installing an attachment in your machine operator's manual, install the Mini Power Rake onto your machine.

NOTE

It is important to make sure the locking mechanism on your quick attach is engaged, therefore locking the attachment onto the machine.

- 5. Lower the unit to the ground and remove the key from the parent machine.
- 6. Relieve any pressure from the auxiliary hydraulic system. After ensuring that there is no foreign matter on the hydraulic couplers, connect the power and return couplers to the auxiliary hydraulic system of your machine.
- 7. Route the hoses in such a fashion as to avoid pinching or chafing.

Operating Instructions

8. For electro-hydraulic slew attachments, ensure that the electric harness is cable tied to the hydraulic supply and return hoses to aviod pinching or chafing.

Hydraulic Connection Instructions

- 1. Disconnect the hydraulic hose quick release couplers from one another and attach the quick release couplers or disconnects to your power unit as per the instructions on your power unit's operator's manual.
- 2. Carefully raise the loader arm and cycle the tilt cylinders to check clearance and to check for any interference.
- 3. If the Mini Power Rake is fitted with hydraulic slew, cycle the hydraulic cylinders on this product several times from fully retracted to fully extended until all air has been completely removed from the cylinders. For operating the Mini Power Rake, the drum should be spinning in clockwise direction (viewed on the LHS of the attachement).

NOTE

When shipped, the hydraulic cylinders on this product contained air or an air-fluid mixture. Failure to remove all the air from the hydraulic cylinders can cause uneven jerky cylinder movement when hydraulic controls are being operated and unwanted cylinder movement when those controls are not being operated. Slew the attachment left and right through several cycles to dispel all entrapped air.



WARNING

Do not lock the auxiliary hydraulics of your power unit into the ON position. Failure to obey this warning could result in death or serious injury.

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Operating Instructions

SETUP PROCEDURE

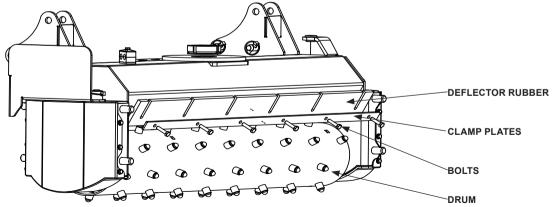
Drum:

The drum and mini power rake (front to back) should be positioned level with the ground. To adjust, raise or lower the jockey wheels and/or use the loader tilt cylinder.

For increased drum penetration, tip the power rake backwards lifting the jockey wheels. During operation, depth can be further controlled by adjusting the rake angle, tilting the unit back raises the jockey wheels, allowing greater drum penetration into the ground.

Deflectors:

Under average conditions, the normal gap between the drum and deflector should be about 32mm, This gap can be adjusted by loosening the 2 carriage bolts that hold the deflector and adjusting it up or down in the square corner slot. A wider opening will allow more dirt and rock to pass through. **DO NOT** let the drum hit the deflector. The gap should be consistent across the deflector and this can be verified by either measuring or matching height marks on the two tabs that protrude up through a slot in the deflector support area.



For loaders fitted with Dual Remote Hydraulic quick release couplers:-

- 1. Connect the hoses from the mini power rake motor to the hydraulic couplers on the skid steer loader.
- 2. Connect the hoses from the hydraulic slew cylinder to the auxiliary quick couplers on the loader arm.

For loaders fitted with Single Remote Hydraulic quick release couplers:-

- 1. Connect the hoses from the mini power rake motor to the main hydraulic couplers on the skid steer loader.
- 2. Connect the wiring harness (marked DM-000021) on the mini power rake using the following options:
 - On loaders equipped with an attachment service plug (7-Pin, 8-Pin or 14-Pin), use the equivalent adapter harness (EH-000056, DM-000032 or DM-000041) provided for the respective service plugs (see page 12).
 - On loaders not equipped with an attachment service plug use the optional Plug 'n Go kit (EH-000008) and optional 6m extension harness (DM-000024). There are two other optional aids to make slewing easier to operate being a remote toggle switch (DM-000026) or a foot operated remote switch (DM-000030),see page 10 & 11.

NOTE

- Lubricate all grease fittings before connecting the product to your power unit's hydraulic system. Refer to the maintenance page and follow the instructions.
- When shipped, the hydraulic cylinders on this product contained air or an air-fluid mixture. Also, there are orifices
 beneath the ports on the hydraulic cylinder barrels that will restrict the exit of that air. Failure to remove all the air from
 the hydraulic cylinders can cause uneven, jerky cylinders movement when hydraulic controls are being operated and
 unwanted cylinder movement when those controls are not being operated.



WARNING

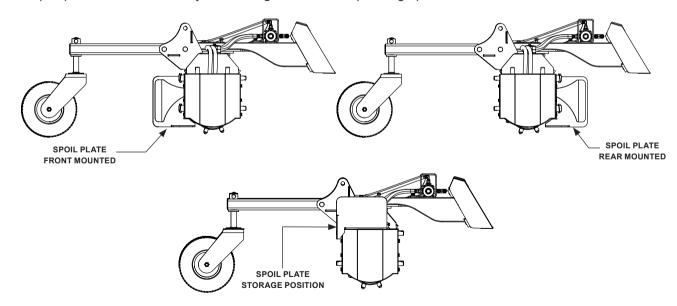
Do not lock the auxiliary hydraulics of your power unit into the on position. Failure to obey this warning could result in serious injury or death.

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Spoil Plates:

The spoil plates contain the material in front of the drum while clean material passes between the drum and deflector. With the spoil plates mounted in the working position and the Mini Power Rake parallel with the power unit's tires/tyres, material can be moved along, filling in low spots. Spoil plates can be mounted to the front or back of the attachment, depending on raking direction. When moving the spoil plates from front to back, move the left one to the right side and the right one to the left side. Pin both the top and bottom bushing to secure the spoil plates.

The spoil plates can be stored by connecting them to the top storage pins on the main frame.



ANGLE

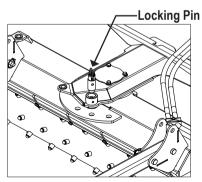
Set the Mini Power Rake straight for conditioning and collecting debris. Angle the attachment for windrowing debris or fill. Angling is also used to change grade.

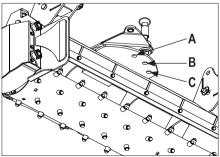
Manual angle operation:

Manual angle operation is achieved with a pin located in the middle of the slew frame.

To change the angle of the Mini Power Rake:

- 1. Raise the Mini Power Rake off the ground (keeping the attachment as level as possible).
- 2. Ensure the drum is not rotating and the machine is shut off when changing the angle of the attachment manually.
- 3. Lift the locking pin by using the ring/handle of the pin until the pin is no longer engaged.
- 4. Swing the head of the Mini Power Rake to the left or right until you reach the desired angle aligning the locking pin holes (location A, B or C).
- 5. Reinstall the locking pin and retaining pin.





MANUAL ANGLE POSITIONS		
POSITION (A)	ANGLE 25° RIGHT SIDE DISCHARGE	
POSITION (B)	STRAIGHT DISCHARGE	
POSITION (C)	ANGLE 25° LEFT SIDE DISCHARGE	

Hydraulic angle operation

If the Mini Power Rake has hydraulic angling, this can be operated as follows:

For Dual Remote Slew:

The slewing function of the attachment can be activated by using the auxiliary lever on the host machine.

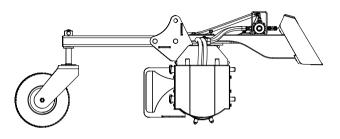
For Single Remote Slew:

By utilizing the host machine service plug and the optional adapters (7 pin, 8 pin or 14 pin connectors depending on host machine). This allows the attachment angling function to be controlled by a remote toggle switch or foot operated switch.

If the host machine does not have an electrical service package and you have purchased the optional "Plug n Go" kit which can run off the machine's 12V accessory plug, you can slew the attachement left to right by using the rocker switch on the controller. Alternatively an optional 2-position toggle switch is available to fasten to the joystick of the host machine or a foot operated switch placed on the floor of the host machine.

NOTE

On the Mini Power Rake, angling/slewing function and drum rotation cannot be operated simultaneously, the attachment can either slew or the drum can rotate, but not both at the same time.



ROLLER ROTATION	TRAVEL DIRECTION
3	

SETUP PROCEDURE



WARNING

Failure to obey the following procedures could result in death or serious injury. Never lift this product above the operator's eye level or to a height where visibility is obstructed.

Standard operation:

- 1. Never raise the Mini Power Rake more than a few inches off the ground when travelling from job site to job site.
- 2. For the drum to operate efficiently, it must rotate in the opposite direction to the power unit wheels (see illustration above). Drum direction is controlled by power unit hydraulic controls.
- 3. Normal operating ground speed is between 5-8 kph. In heavy rock, reduce speed to 2-5 kph.

- 4. For hydraulic drive, normal operating rotations per minute of the roller is approximately 170. If operating in heavy rock reduce speed as needed.
- 5. Operating depth will determine how much dirt is carried ahead of the roller. Ideal depth will vary from skimming the surface to approximately 75mm deep.
- 6. When making the first windrow, the level of dirt may be halfway up the deflector. After moving the windrow 2 or 3 times, the level of dirt may be to the top of the deflector. Try to prevent material from flowing over the top of the deflector. Volume and density of material will dictate how many times a windrow can be moved.
- 7. The following are common operating applications:

APPLICATION	DRUM POSITION	ENDPLATE POSITION	HYDRAULIC FLOAT POSITION
Pulverising Topsoil	Angled or Straight	Stored	Rigid
Debris Removal	Angled or Straight	Windrow or Collect	Float
Finish Grading	Straight	Collect	Float
Spreading Fill and Topsoil	Angled	Windrow	Rigid
Changing grade	Angled	Windrow	Float
Thatching existing grass area	Straight	Stored	Rigid

- 8. When adjusting the gap between the drum and deflector; a wider opening will allow more dirt and rock to pass through. For finer raking, reduce the gap.
- 9. Tyres: check the air pressure of your tyres before each use. Maintain recommended tyre pressure to maintain a consistent even grade. (Max tyre pressure is shown on the tyre wall).

Removal and Storage

- 1. Set the attachment on the ground and follow the standard shut-down procedure in your loader operator's manual.
- 2. With the loader OFF, disengage the attachment lock pins, release hydraulic pressure from the auxiliary hydraulic system and disconnect the hydraulic quick disconnects.
- 3. If the Mini Power Rake is fitted with hydraulic slew which requires an electrical connection to the host machine, disconnect this at the auxiliary connection on the host machine arm or disconnect the optional in-cab "Plug & Go" on the boom extension harness at the Deutsh Plug located next to the hydraulic hose connectors.
- 4. Start the machine's engine and make sure that the lift arm is lowered and in contact with the loader frame.
- 5. Roll the attachment mechanism forward and slowly back up until the attachment is free from the machine.
- 6. Store the attachment in a dry and protected place. Leaving the attachment outside will materially shorten its life.

When attachments are not on parent machine

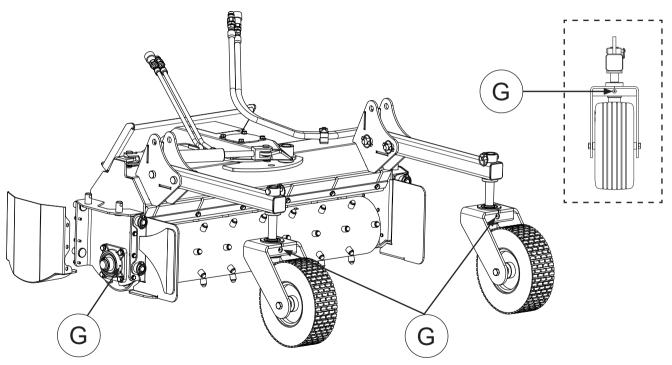
It is a requirement of the Australian Work place Health and Safety act 2011, that safe systems of work are employed when handling any attachment. Complete compliance with Work place Health and Safety issues is compulsory and all due care and attention must be observed at all times in any method of moving, transporting or storing any such device when not attached to a parent machine. We recommend attachments are well secured when being moved or in transit and furthermore prior to moving, storing, loading/unloading, or parking it is suggested that the attachment is strapped/secured to a pallet or enclosed in a suitable container to minimize any movement or loss of the load during such activity. NO responsibility for loss or damage to persons or property in any regard can be attributed to Digga.

Transporting the attachment

Follow all federal, state and local regulations when transporting the unit on public roads.

Greasing

Lubricate all greasing points (G) with multi-purpose grease before use and every 40 hours, or more frequently as needed based on work conditions.



Removing Wire, Twine, Weeds, ETC. that are wrapped around the drum

- 1. Park your loader on a level surface with this product properly attached.
- 2. Place your loader's transmission in park and engage the parking brake.
- 3. Lower the product onto the prepared blocking that will support the motor guards of this product so that the teeth are not in contact with the ground.



WARNING

Do not use blocking made of concrete blocks, logs, buckets, barrels or any other material that could suddenly collapse or shift positions. Do not use wood or steel blocking that is wrapped, twisted or tapered. Failure to obey this warning could result in death or serious injury.

- 4. Shut off your loader's engine and remove the key, wait for all moving parts to come to a stop, and relieve all the pressure in the hydraulic lines.
- 5. Disconnect the hydraulic lines from your loader and connect the two ends to each other. This should permit the drum to rotate.
- 6. Pull the entangled material from the drum while allowing it to rotate.

Alternate method for Skid Steer Loaders

If your loader is equipped with safety stops for the lift arms of the loader that can be activated from the operator's position or if the safety stops must be activated from outside the operator's position and a second person is present, then the method above may be replaced with these steps:

- 1. Park your loader on a level surface with this product properly attached.
- 2. Place your loader's transmission in "Park" and engage the parking brake.
- 3. Disconnect the hydraulic lines from your loader and connect the two ends to each other. This should permit the roller to rotate freely.
- 4. Fully raise the lift arms and fully extend the tilt cylinders to the fully dumped position.
- 5. Shut off your loader's engine, remove the starter key, wait for all moving parts to come to a stop, and relieve all hydraulic line pressure.
- 6. Pull the entangled material from the drum while allowing it to rotate.



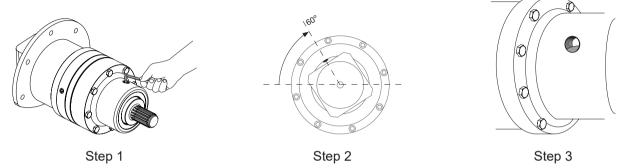
WARNING

The second person removing the entanglement from the roller drum must <u>NOT</u> perform any work from under the raised arms of the loader. Work must be performed from front of the supported attachment.

Replacing Deflector strips

- 1. Perform the same steps 1 to 5 mentioned above.
- 2. Remove worn strip by removing bolts and nuts that secure the strip.
- 3. Replace the strip, making sure the steel clamp plate is re-installed.

Oil Change Procedure



- 1. Lay the gear box flat on the ground with the oil fill bung facing up. Using an 8mm Allan key remove the bung. To drain oil, turn the drive until the hole is facing down. Allow to drain until all oil has been completely removed.
- 2. Rotate the unit until the oil fill hole is sitting between 60° 70° from horizontal.
- Once the filler hole is at approx 60°, the oil should be sitting at the base of the filler hole thread.
 Use only Castrol Alpha SP320 Gear Oil (Mineral Oil) in your gear box. Gearbox Oil Capacity 0.55 L (550ml).
- 4. If the oil level is too low to reach the thread it should be topped up. Rotate the Unit so the filler hole is sitting at the top and add oil. Repeat steps 2 4 until you have achieved the correct level. Note that the oil takes time to work it's way through the gearbox. Allow time for it to settle once it has reached the bung hole. Then check the level again until all seepage has occurred.

NOTE:

If your unit is leaking oil after you have performed the daily checks consult your local authorised service agent.

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Gearbox Oil schedule for Mini Power Rake:

Initial (Bed-in) oil change:

The first oil change must be carried out within the first 30 hours of operation. Thereafter, every 300 hours.

FIRST OIL CHANGE	Within the first 30 hours of use
2ND OIL CHANGE PLUS SUBSEQUENT OIL CHANGES	After 300 hours of use thereafter
GEARBOX OIL	CASTROL ALPHA SP320 (MINERAL OIL)
PART NUMBER	LUB-000003
OIL QUANTITY	0.55 litres

NOTE:

The gearbox oil capacity is engraved onto the serial tag located on the side of the Mini Power Rake.

Technical Specifications

DESCRIPTION	MINI POWER RAKE		
MODEL	MANUAL SLEW - SINGLE HYDRAULIC REMOTE (FOR DRUM)	HYDRAULIC SLEW - DUAL REMOTES	HYDRAULIC SLEW - SINGLE REMOTES (ELECTRIC OVER HYDRAULIC)
WORKING WIDTH	1200mm (48")	1200mm (48")	1200mm (48")
HEIGHT	674mm (26.5")	674mm (26.5")	735mm (29")
DRUM TORQUE	2040 Nm (1505 lbf.ft) (max.)	2040 Nm (1505 lbf.ft) (max.)	2040 Nm (1505 lbf.ft) (max.)
FLOW RANGE	30-75 LPM (8-20 USGPM)	30-75 LPM (8-20 USGPM)	30-75 LPM (8-20 USGPM)
PRESSURE RANGE	138-240 Bar (2000 - 3500 PSI)	138-240 Bar (2000 - 3500 PSI)	138-240 Bar (2000 - 3500 PSI)
OPERATING MASS	254 kgs (560 lbs)	305 kgs (672 lbs)	330 kgs (728 lbs)

Troubleshooting

TROUBLE	POSSIBLE CAUSE	REMEDY
RIPPING TEETH FROM DRUM	Hitting rocks	Repair
	Abuse	Repair
DRUM SPINNING IN OPPOSITE TO PREFERRED DIRECTION Switch hose quick d		Switch hose quick disconnects around
LEAKING HOSES	Loose fittings	Tighten fittings
ATTACHMENT WILL NOT SLEW	No power reaching the Switch Controller. (Only Plug'n Go kit has switch controller)	Check that the green LED light is Illuminated on the Cigarette lighter power connector of the power lead. (Cigarette lighter is AKA accessory power connector). There is a 10 Amp fuse inside the power plug connector. Check the continuity of the fuse if the LED light is out.
	No power reaching the Mini Power Rake.	Check that the LED inside the Hirschmann plug on the diverter valve is Illuminated. This is located on the attachment. When power is applied and the LED is not Illuminated, check the harness, no light indicates no power is available to the Power Rake. The clear Hirschann plug with the LED is a new addition, from June 2022.
	Controller not connected to the attachment. (Only applicable to Plug'n Go kit)	Check harness & extension cable to ensure they are pluged in and secure.
	LED light on Hirscmann plug is illuminating when power is applied, but still fails to slew	Check that the 12V solenoid coil is functional. When the rocker switch on the controller(Plug'n Go kit) or switch on the loader joystick is switched on & off there should be a clicking sound heard when one's ear is close to the solenoid coil. Replace if necessary. Note: Stand-on mini loaders are not equipped with attachment service plugs & can only use the Plug'n Go kit.

NOTE:

Slew operation operates with hydraulic power, but requires 12 V DC power to the diverter valve to energise the solenoid.

Notes

Spare Parts

For further information on spare parts, please contact one of the Digga sales offices shown below, or contact your local authorised Digga dealer.

DIGGA INTERNATIONAL SALES OFFICES

ASIA PACIFIC

DIGGA HEAD OFFICE - BRISBANE

4 Octal St, Yatala QLD 4207 Phone: +61 7 3807 3330 Email: info@digga.com

DIGGA NEW SOUTH WALES

19 Mckay Close, Wetherill Park, NSW 2164 Phone: 1300 2 DIGGA Email: nsw@digga.com

DIGGA VICTORIA

151 Wedgewood Road, Hallam, VIC 3803 Phone: 1300 2 DIGGA Email: vic@digga.com

Web: www.digga.com

NORTH AMERICA

DIGGA NORTH AMERICA

2325 Industrial Parkway SW Dyersville IA 52040 Phone: + 1 563 875 7915 Email: infous@digga.com

Web: www.diggausa.com

EUROPE

DIGGA EUROPE

Unit 1, Nexus Park Plenty Close Newbury, RG14 5RL England, United Kingdom Phone: +44 (0) 1488 688 550 Email: infouk@digga.com

Web: www.diggaeurope.com

Warranty Statement

All new Digga products are warranted to be free from defects in materials or workmanship, for a period of twelve (12) months from date of original purchase, which may cause failure under normal usage and service when used for the purpose intended. Digga Australia Pty Ltd warrants its equipment for a period of twelve (12) months dating from delivery to the original user.

In the event of failure (excluding cable, ground engaging parts such as sprockets, digging chain, bearings, teeth, tamping and demolition heads, blade cutting edges, pilot bits, auger teeth, auger heads), if after examination, Digga determines failure was due to defective material and/or workmanship, parts only will be repaired or replaced. Digga may request defective product or products be returned prepaid to them for inspection at their place of business or to a location specified by Digga. The warranty will be considered void if the product or any part of the product is modified or repaired in any way not expressly authorized by Digga, or if closed components are disassembled prior to return. Closed components include, but are not limited to: gearboxes, hydraulic pumps, motors, cylinders and actuators. Any goods returned to Digga by the customer under warranty or repair must have all freight charges prepaid for on the customers account.

Any claims under this warranty must be made within fifteen (15) days after the Buyer learns of the facts upon which such claim is based. All claims not made in writing and received by Digga outside the time period specified above shall be deemed waived.

Damage or failure through operator abuse or negligence voids warranty.

This warranty is in lieu of all other warranties expressed or implied and there are no warranties of merchantability or of fitness for a particular purpose. In no event shall Digga be liable for consequential or special damage. Digga's liability for any and all losses and damages to buyer, resulting from any cause whatsoever, including Digga's negligence, irrespective of whether such defects are discoverable or latent, shall in no event exceed the purchase price of the particular products with respect to which losses or damages are claimed, or, at the election of Digga, the repair or replacement of defective or damaged products.



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