



**RAMDRILL
RAMDRILL PHD-XD
3PT LINKAGE**

OPERATORS MANUAL

PM-000019-E



**CRITICAL - DO NOT CONNECT OR OPERATE YOUR RAMDRILL
WITHOUT FIRST HAVING READ AND UNDERSTOOD THIS STATEMENT**

Your Ramdrill is a high performance attachment that is designed for Drilling. To avoid premature wear and failure, and to fulfill your terms of warranty please read this statement.

All **DIGGA RAMDRILL** must have a first oil change within the **first 30hrs (extreme use) or 50hrs (moderate use) or 3mths** (which ever comes first) of use to ensure the bed in of the drive unit. For more detailed information please read page 29.

If the first oil change is not performed within this period excessive wear within the gearbox will occur that will cause premature failure. All Warranty will be void.

Oil must then be changed thereafter every 300hrs (extreme use)/500hrs (moderate use) and a full service every 12mths must be performed by an authorised Digga service agent to ensure Warranty requirements are met.

In the event of a failure under the warranty period:

- Contact Digga immediately, **DO-NOT DISASSEMBLE YOUR DRIVE** without first obtaining written permission and instructions from Digga.
- Proof of service must be provided in hard copy form of both operational and service history (including serial number of gearbox and hydraulic motor) records. Service must be performed by an **authorised Digga service agent**.

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THANK YOU

Congratulations on the purchase of your new DIGGA Ramdrill. This product was carefully designed and manufactured to give you years of dependable service. It is mandatory that oil changes are performed at the specified interval to keep it in top working condition

(Maintenance - chapter 11).

The complete manual must be read and understood before connecting and operating. Be sure to observe all safety precautions and maintenance procedures as described in this manual.

Optional Extras are available for special applications or extreme conditions: these are noted throughout the manual. Contact your DIGGA dealer for any further information pertaining to this product or for further information on other products available in the DIGGA range.

ABOUT THIS MANUAL

This manual has been designed to help you do a better, safer job. **Read this manual carefully and become familiar with its contents.** Remember; never let anyone operate this unit without reading the "Safety Precautions" and "Operating Instructions" sections of this manual. Unless noted otherwise, right and left sides are determined from the position of the operator when behind the product facing forward.

DIGGA www.digga.com	○	CE	MADE IN AUSTRALIA DE-000083
Model	<input type="text"/>		
Serial No.	<input type="text"/>		
Flow (max)	<input type="text"/>		
Pressure (max)	<input type="text"/>		
Power	<input type="text"/>		
Approx. Oil Capacity	○	Weight	
<input type="text"/>		<input type="text"/>	



SAFETY ALERT SYMBOL

This is the "Safety Alert Symbol" used by this industry. This symbol is used to warn of possible injury. Be sure to read all warnings carefully. They are included for your safety and for the safety of others working with you.

4 SERVICE & PREPARATION FOR USE

Your Digga Ramdrill is a **user non serviceable part. Unauthorised disassembly will void warranty.**

All service and warranty must be performed by an authorised DIGGA service agent. 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.

MODEL _____

SERIAL NUMBER _____

DATE PURCHASED _____

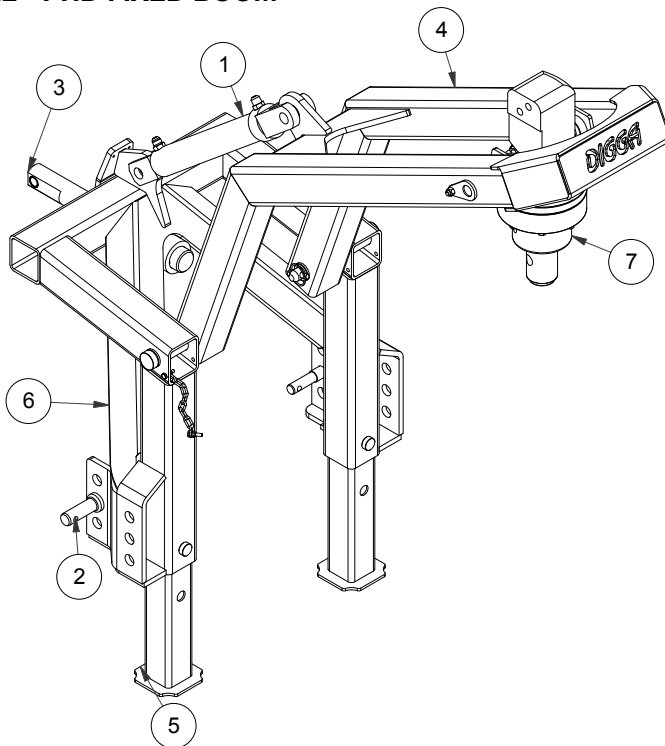
The parts department needs this information to ensure accurate parts can be sent to the authorised service agent.

MODELS COVERED IN THIS MANUAL		
PTO	PHD-XD	3PT LINKAGE

MAIN COMPONENTS

To avoid any inconvenience before operation, please check that you have received the following items which you have ordered.

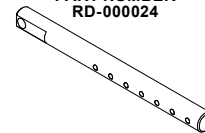
RAMDRILL - PHD FIXED BOOM



NOTE

PHD RAMDRILLS COME WITH
THE FOLLOWING TOP LINK BAR

PART NUMBER
RD-000024

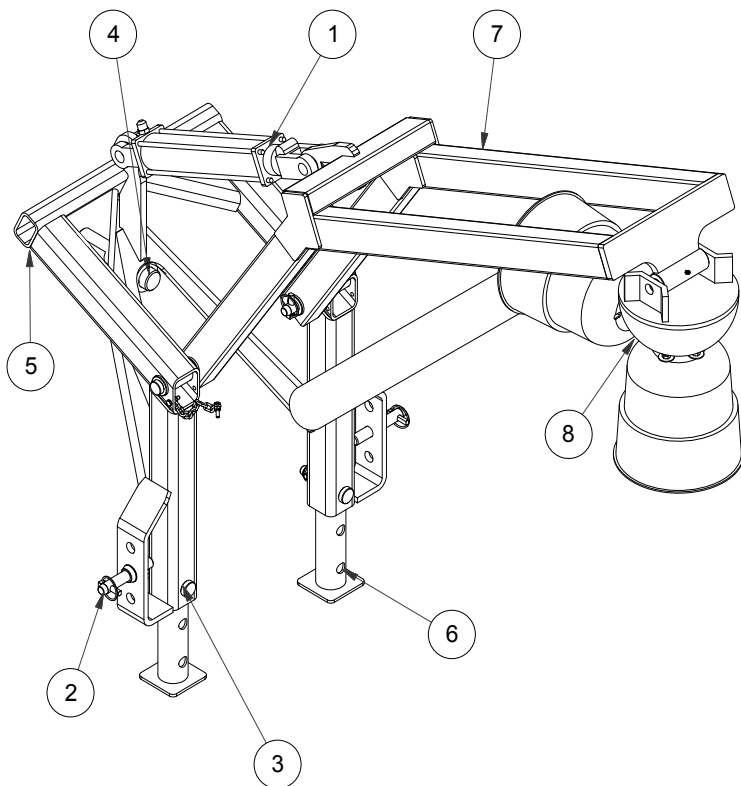


600MM LONG

NO	DESCRIPTION
1	HYDRAULIC CYLINDER
2	PIN - DUAL PIN CAT1 AND CAT2
3	TOP LINK BAR
4	BOOM ASSEMBLY
5	ADJUSTABLE LEGS ASSEMBLY
6	A FRAME WELDMENT
7	GEARBOX ASSEMBLY

4 SERVICE & PREPARATION FOR USE - PTO FIXED BOOM

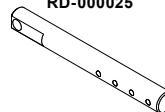
RAMDRILL - PTO FIXED BOOM



NOTE

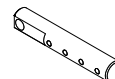
PTO RAMDRILLS COME WITH
THE FOLLOWING TOP LINK BARS

PART NUMBER
RD-000025



450MM LONG

PART NUMBER
RD-000026



295MM LONG

NO DESCRIPTION

- | NO | DESCRIPTION |
|----|----------------------|
| 1 | RAM ROD |
| 2 | PIN - CAT2 |
| 3 | PIN - ADJUSTABLE LEG |
| 4 | TOP LINK BAR |
| 5 | A-FRAME WELDMENT |
| 6 | LEG ASSEMBLY |
| 7 | BOOM ASSEMBLY |
| 8 | GEARBOX ASSEMBLY |

To avoid any inconvenience before operation, please check that you have received the items (covered in this manual) which you may have ordered.

PTO

QTY	DESCRIPTION
1	BOLT HEX 1/2X4 G8 UNC ZP
1	NUT HEX NYLOC 1/2 UNC ZP
2	NUT NYLOC 1/4 ZP
2	BOLT HEX 1/4"x1" G8.8 UNC ZP
1	GREASE NIPPLE 1/4 UNF
2	S7-0612-BSPTM JICM-NIP
2	QRC POPPET FIRG M 1/2 BSPP
2	DOU TY WASHER HYD COUPLINGS
2	CAT 1 (B200)-137MMOAL 22MMDIA
2	CAT 2 (B202)-140MMOAL 22MMDIA
2	LYNCH B7-11MM SHAFT
1	OP MANUAL RD
1	BOLT KIT RD CLUTCH CVR
2	GB SPC PTO
1	CHAIN 1M CHAIN SECT 4MM GALV
1	CONVERSION BUSH CAT 1 TO 2
1	HYDRAULIC CYLINDER
2	CLUTCH COVER
1	CLUTCH
1	HOSE KIT
1	GEAR BOX
1	450MM TOP LINK BAR
1	295MM TOP LINK BAR

PHD

QTY	DESCRIPTION
2	BOLT HEX M10X110 G8.8 ZP
1	BOLT HEX 1/2X4 G8 UNC ZP
1	NUT HEX NYLOC 1/2 UNC ZP
2	NUT NYLOC 1/4 ZP
2	NUT HEX NYLOC M10 ZP
2	BOLT HEX 1/4"x1" G8.8 UNC ZP
1	S90 1212-JICM UNOM - NIP
1	REDNIP-MLE S90-1212THRDA+B3/4
4	QRC POPPET FIRG M 1/2 BSPP
4	DOU TY WASHER HYD COUPLINGS
2	CAT 2 (B202)-140MMOAL 22MMDIA
2	LYNCH B7-11MM SHAFT
1	OP MANUAL RD
2	GB PIN 1IN W/TEARDROP
1	CHAIN 1M CHAIN SECT 4MM GALV
1	CONVERSION BUSH CAT 1 TO 2
1	HYDRAULIC CYLINDER
1	HOSE KIT
1	GEARBOX
1	600MM TOP LINK BAR

3PT LINKAGE

QTY	DESCRIPTION
1	DRWB3/4B404-208OAL 186SL 19DIA
1	B81-160MM OAL 141MM SL 25MMDIA
3	LYNCH B7-11MM SHAFT
2	CAT1/2DBL END-1900AL 22MM 28.5
1	OP MANUAL RD
1	BOLT KIT RD CLUTCH CVR
1	CONVERSION BUSH CAT 1 TO 2
1	HYDRAULIC CYLINDER
2	CLUTCH COVER
1	CLUTCH
1	HOSE KIT
1	GEAR BOX

5 SAFETY PRECAUTIONS - GENERAL INFORMATION

TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

THIS SYMBOL MEANS:



**ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!**

SIGNAL WORDS: Note the use of signal words DANGER, WARNING, and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation, which if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices and indicate potential failure or damage to equipment.

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.

This section is composed of various warnings and safety tips. **Read and learn all the information in this section before you attempt to use your attachment.** Also read your machine's owner's manual before using your equipment. This knowledge will help you operate your unit safely. **Do not take this information lightly, it is presented for your benefit and for the benefit of others working around you.**

The "Safety Alert Symbol"  will be used throughout this manual. It will appear with the word **DANGER, WARNING, or CAUTION,** and a safety message pertaining to the specific topic being covered. Take the time to read these messages as you come across them.

WARNING



KNOW WHERE UTILITIES ARE

Observe overhead electrical and other utility lines. Be sure equipment will clear them. When digging, call DIAL BEFORE YOU DIG ON 1100 (in Australia), or your local UTILITIES location service provider for location of buried utility lines, gas, water, and sewer, as well as any other hazard you may encounter.

WARNING



EXPOSURE TO RESPIRABLE CRYSTALLINE SILICA DUST ALONG WITH OTHER HAZARDOUS DUSTS MAY CAUSE SERIOUS OR FATAL RESPIRATORY DISEASE.

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

WARNING



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 area. Allow fumes to disperse at least 15 minutes before welding or heating.

WARNING



END OF LIFE DISPOSAL

At the completion of the useful life of the unit, drain all fluids and dismantle 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.

5 SAFETY PRECAUTIONS - GENERAL INFORMATION

WARNING OPERATING THE RAMDRILL



- 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 equipment.
- All bystanders should be kept a minimum of 6 meters (20 feet) away from the working area of the attachment.
- Do not allow Site workers to climb or ride on a the Ramdrill at any time, including while stationary, in operation or being moved or rotated.
- Operate only from the operator's station.
- Avoid steep hillside operation which could cause the machine to overturn. Consult your machines operator's and safety manuals for maximum incline allowable.

WARNING



- Reduce speed when driving over rough terrain, on a slope, or turning, to avoid overturning the vehicle.
- Travel only with the Ramdrill in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes.
- Tether any auger, anchor or extensions connected to the drive with a chain if necessary, to prevent uncontrolled swinging of the attachments when moving from position to position.
- Do not drive close to ditches, excavations, etc., cave in could result.
- Before exiting the machine, lower the attachment to the ground, apply the parking brakes, turn off the prime mover's engine, and remove the key.
- Flow and pressure gauges, fittings, and hoses must have a continuous operating pressure rating of at least 25% higher than highest pressures of the system.
- 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.

WARNING



- Ramdrill shall be used only for their designed intent and shall not be loaded beyond their rated capacity. Overloading or exceeding the manufacturers specifications will void all warranty.

WARNING



OPERATING THE RAMDRILL CONT....

- Drill stem rotation must be stopped before adding or removing sections, or making adjustments to the drill stem or sampling equipment.
- Augers shall be cleaned only when the rotating mechanism is in neutral and the auger stopped; long-handled shovels shall be used to move cuttings from the auger. Materials heavier than 10kgs must be moved mechanically or by using at least two people.
- Drilling 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.
- Open bore holes must be capped and flagged.

WARNING



STORAGE OF THE RAMDRILL

- Seal hydraulic couplers from contaminants and secure all hydraulic hoses off the ground to help prevent damage.
- Clean the unit thoroughly, removing all mud, dirt, and grease.
- Inspect for visible signs of wear, breakage, or damage. Order any parts required and make the necessary repairs to avoid delays upon removal from storage.
- Check that drive unit motor and hoses are full of clean oil and planetary is full.
- Coat liberally with grease the output shaft and collar, extension shaft and collar, and all connecting pins to prevent rust and reduce wear.
- Tighten loose nuts, capscrews and hydraulic connections.
- Replace decals that are damaged or in unreadable condition.
- Store unit in a dry and protected place. Leaving the attachment outside will materially shorten its life.

5 SAFETY PRECAUTIONS - GENERAL INFORMATION

WARNING



GROUND PERSONNEL AND BYSTANDERS

- Be alert to others in the work area. Be sure others know when and where you will be working. Make sure no one is behind equipment or within 6 metres of it operating.
- Loose fitting clothing, long hair, jewellery and equipment which might become entangled in moving equipment are prohibited while working near the Ramdrill.
- Operators, helpers, and other personnel working near the Ramdrill 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.

WARNING



MAINTAINING THE RAMDRILL

- Before performing maintenance, lower the attachment to the ground, apply the parking brakes, turn off the engine, and remove the key.
- Drill rigs must be shut down and properly locked-out and tagged before repairs or maintenance is performed. Only properly trained and qualified individuals are permitted to perform repairs and maintenance.
- Never adjust a relief valve for pressure higher than recommended by the machine's manufacturer.

WARNING



TRANSPORTING

Follow all local government regulations that may apply along with recommended tie down points and any equipment safety precautions at the front of this handbook when transporting your attachment.

WARNING



TIE DOWN POINTS

- Do not attach tie down accessories around cylinders or in any way that may damage hoses or hydraulic components.
- Check unit stability before transporting.

Verify that all tie down accessories (chains, slings, ropes, shackles and etc.) are capable of maintaining attachment stability during transporting and are attached in such a way to prevent unintended disengagement or shifting of the unit. Failure to do so could result in serious personal injury or death.

TO THE OPERATOR

The primary responsibility for safety with this equipment falls to the operator. Make sure that the equipment is operated only by trained individuals that have read and understand this manual. Don't hurry the learning process or take the unit for granted.

It is the skill, care, common sense, and good judgement of the operator that will determine how efficiently and safely the job is performed. Know your equipment before you start. Know its capabilities and how to operate all the controls.

Visually inspect your equipment before you start, ensure correct assembly and installation of the attachment and never operate equipment that is not in proper working order.

Practice the operation of your new attachment and become familiar with the controls and the way it handles on your machine. If there is any portion of this manual or function you do not understand, contact your local authorized dealer or the manufacturer.

1. Never operate the Attachment without first reading and understanding the entire operator's manual.
2. Do not paint over, remove or deface any safety signs or warning decals on your equipment.
3. Follow all safety decals. Keep them clean and replace them if they become worn, damaged or illegible.
4. Know your equipment inside and out. Know how to operate all controls and know emergency shut down procedures.
5. 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.
6. Operate the attachment only in daylight or with sufficient artificial light.
7. Always carry loads close to the ground. Do not step off machine platform with load raised.
8. 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.
9. Do not exceed rated operating capacity of the host machine, as machine may become unstable resulting in loss of control.
10. Always lower the loader arms or machine boom to the ground, shut off the engine and remove the key before getting off the unit.
11. Never use the Ramdrill on a machine that is not equipped with a cab or ROPS, and operator restraints (seat belts or equivalent devices).

WHEN DEALING WITH HYDRAULICS DURING ANY TYPE OF ASSEMBLY, OPERATION, MAINTENANCE, OR OTHER WORK ON OR NEAR THIS PRODUCT

- Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. 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's manual for detailed instructions on connecting and disconnecting hydraulic attachments.
- Make certain 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 boom to check hose clearances and to check for any interference.
 - Operate the hydraulics on this product to ascertain forward and reverse.
 - Make certain that hoses will not be pinched, or get tangled, in any equipment.
- Do not lock the auxiliary hydraulics of your power unit in the "ON" position.
- Refer to your power unit's operator's manual and this manual for procedures and intervals, then inspect and maintain the entire hydraulic system to insure that the fluid remains clean, that all devices function properly, and that there are no fluid leaks.

WHEN MOUNTING THIS PRODUCT TO YOUR MACHINE

- Refer to the operator's manual for mounting instructions.
- If this product does not fit properly, contact your Digga Dealer before operating.
- 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.
- Where 'Dead Man' connections are connected or installed it is illegal to disengage, tamper with or remove them.

WHEN ADJUSTING, SERVICING OR REPAIRING THIS PRODUCT

- Make no modifications to your Ramdrill.
- When making repairs use only authorised Digga service agents, use only genuine Digga parts for the gearbox. For fasteners, hydraulic hoses, or hydraulic fittings, use only properly rated parts.
- Replacement parts must also have safety signs attached.

For additional safety information please see Risk Management booklet. To obtain a copy contact Digga Head Office on +61 7 3807 3330

7 SAFETY - DECAL LOCATION

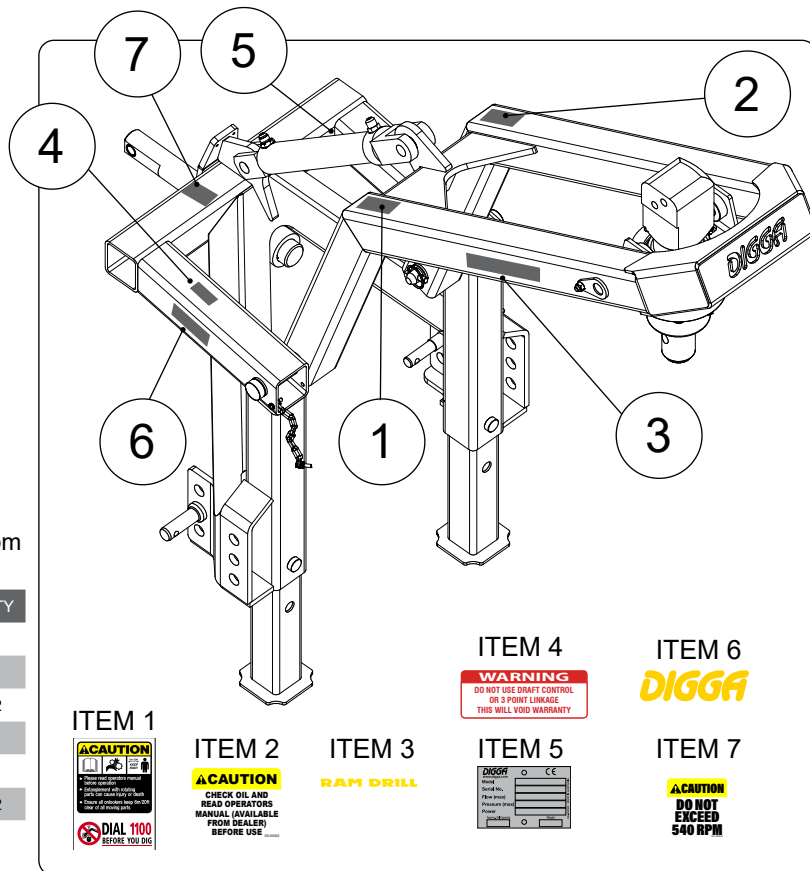
PLACEMENT OR REPLACEMENT OF SAFETY SIGNS

1. Clean the area of application with non-flammable solvent, then wash the same area with soap and water.
2. Allow the surface to fully dry.
3. Remove the backing from the safety sign, exposing the adhesive surface.
4. Apply the safety sign to the position shown in the diagram above and smooth out any bubbles.

INSTRUCTIONS

- Keep all safety signs clean and legible.
- Replace all missing, illegible, or damaged safety signs.
- Replacement parts for parts with safety signs attached must also have safety signs attached.
- Safety signs are available from your dealer or from Digga Australia.

ITEM	DESCRIPTION	PART. NO	QTY
1	Caution/ Dial 1100 before you dig.	DE-000088	1
2	Caution - check oil and read manual	DE-000032	1
3	Ram Drill	DE-000056	2
4	Warning - Do not use draft control	DE-000074	1
5	Serial Tag	DE-000063	1
6	Digga Decal	DE-000453	2
7	Do not exceed 540 RPM (3PT LINKAGE and Ramdrill only)	DE-000033	1



The key feature of your Ramdrill is low maintenance, regular oil changes only are required. It contains no user serviceable parts, unauthorised disassembly will void warranty. WRITTEN PERMISSION FROM DIGGA MUST BE OBTAINED before performing any disassembly.



SAFETY FIRST!! READ AND UNDERSTAND THE SAFETY INSTRUCTIONS BEFORE BEGINNING ANY DRIVE UNIT MAINTENANCE.

BEFORE FIRST USE

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

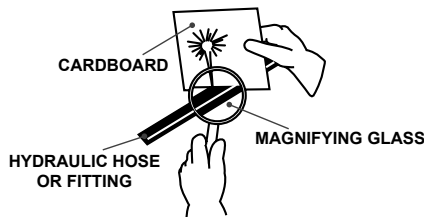
BEFORE EACH USE

- 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. (SEE THE SAFETY SIGN SECTION)
- Check for any oil leaks.
- Wear and tear on pins, linkages, clips, bushes and mounting brackets.
- Ensure any damage or excessively worn parts are replaced.
- Always wear safety goggles or glasses when inspecting equipment.

WARNING!



If injured by injected fluid, see a doctor at once. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.

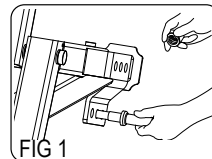
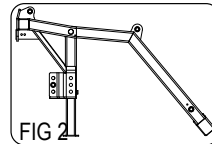
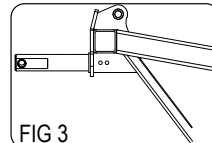
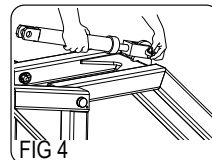
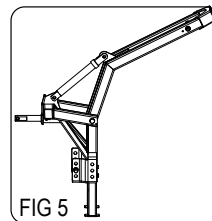


Escaping fluid under pressure can have sufficient force to penetrate the skin causing serious personal injury. Fluid escaping from a very small hole can be almost invisible. Use a piece of cardboard or wood, rather than hands to search for suspected leaks. Keep unprotected body parts, such as face, eyes,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

9 INSTALLATION AND OPERATION INSTRUCTIONS

RAMDRILL ASSEMBLY

1. Unstrap your Ramdrill from the pallet and open all boxes.
2. Remove the toplink bar from the tractor as per your tractors operating manual.
3. Insert the Dual Cat 1/Cat 2 pin into the A-Frame and secure with a nut and washer (Fig 1).
4. Fit main boom to A-Frame.
5. Pivot the a-frame and boom assembly into a vertical position (Fig 2). Lower the 3pt linkage arms on your tractor and reverse until lined up.
6. Remove the locking pin for side travel from your tractors 3pt linkage arms and manoeuvre until secured with lynch pin. Replace the side travel pin.
7. Insert the top link bar supplied and secure to the ramdrill with a nut and bolt (Fig 3).
8. Insert the spacer/bush into the shaft and manoeuvre the tractor and ramdrill until shaft can safely be secured to the tractor. Secure with pin and lynch pin.
9. Put Draft control in full down position and lock out, Do not use once ramdrill is secured to tractor. The use of the draft control will damage the ramdrill and or tractor.



IMPORTANT: WHEN SUBFRAME IS FITTED - DO NOT OPERATE DRAFT CONTROL - DAMAGE TO TRACTOR AND OR RAMDRILL WILL RESULT

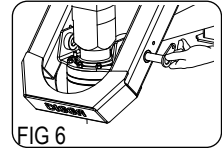
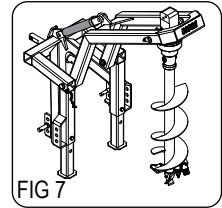
10. Remove the clip and pin from your Hydraulic Ram and secure to the boom (Fig 4).
11. Pivot the boom up and position the cylinder into place, secure with pin and clip.
12. Remove the cylinder caps and lower the boom to ground before connecting your hydraulic ram to the tractor.
13. Operate the boom up and down to charge the hoses (Fig 5).

9 INSTALLATION AND OPERATION INSTRUCTIONS

RAMDRILL ASSEMBLY - CONTINUED

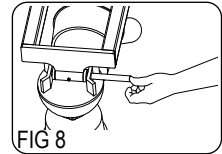
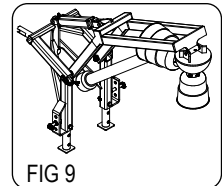
PHD ONLY

14. Remove the plugs from your hydraulic motor and screw in the hydraulic nipples before positioning the ramdrill above the motor and slowly lowering the boom until you are able to secure the motor.
15. Connect your hoses to the hydraulic motor and secure with hose clamps to the boom before connecting to the tractor.
16. Fit Auger to the attachment. Your Ramdrill is now ready to use.

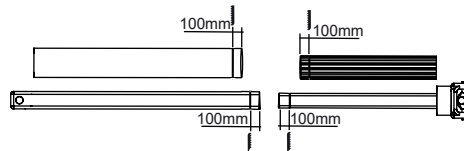


PTO ONLY

14. Remove the split pin and mounting pin from the gearbox mount and slowly lower the boom until you are able to secure the gearbox as shown (Fig 8)
15. Raise the boom and fit PTO Shaft to tractor first then extend and fit to gearbox. Some tractors, this may have to be shortened (See page 24).



IMPORTANT: ENSURE PTO SHAFT HAS FREE TRAVEL IN ALL DRILL POSITIONS. E.G. BOOM-UP, BOOM-DOWN. SHORTEN IF NECESSARY. SEE DIAGRAM / PAGE 24.

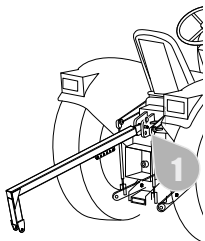


16. If your PTO shaft needs to be shortened, remove plastic covers, separate shafts then cut equal sections off plastic cover and shafts to allow full extract as per diagram above. For step-by-step instructions, please see page 24.
17. Fit Auger to the attachment. Your Ramdrill is now ready for use.

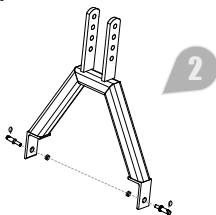
9 INSTALLATION AND OPERATION INSTRUCTIONS

3PT LINKAGE ASSEMBLY

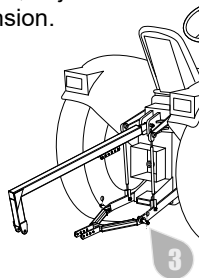
1. Fit boom to top linkage point, lock pin in place.



2. Fit 3 PTL pins to A-Frame item (9) B202 or (11) B200, depending on size of tractor. (Ref to Parts List)

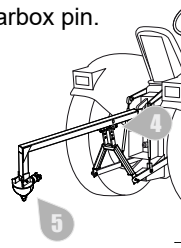


3. Fit A-Frame (9)B202 or (11)B200 to draught arms on 3 PTL. Secure with spring clips, adjust 3 PTL arm for tension.

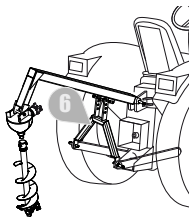


4. Fit A-Frame to boom with boom pin (6)B204. Secure with spring clip.

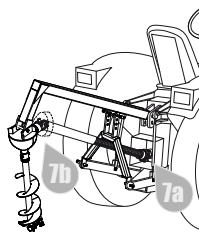
5. Raise boom to allow gearbox to be fitted to boom with gearbox pin.



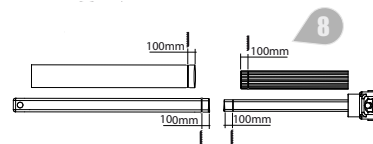
6. Raise boom with gearbox to fit auger.



7. Fit PTO shaft to tractor first (a), then extend and fit to gearbox (b). Some tractors this may have to be shortened.



8. If so, remove plastic covers, separate shafts then cut equal sections off plastic cover and shafts to allow full extract.



NOTE: To operate, engage PTO then use draft control to lower and raise 3PTL NB. As there is no downforce allow the auger to do the digging.

9 INSTALLATION AND OPERATION INSTRUCTIONS

Before operating, always ensure that the DIGGA Ramdrill and Auger are fitted correctly to the parent machine.



CAUTION: DO NOT OPERATE ON EXCESSIVE SLOPES, EMBANKMENTS OR NEAR EDGES OF EXCAVATIONS

IMPORTANT: WHEN SUBFRAME IS FITTED - DO NOT OPERATE DRAFT CONTROL - DAMAGE TO TRACTOR AND OR RAMDRILL WILL RESULT

When travelling or manoeuvring Parent Machine to the required drilling area, reduce ground speed to prevent the Planetary Drive Unit and Auger from swinging.

To commence drilling, locate Auger Pilot (on pre marked spot) and engage machine auxiliary lever to rotate the Auger in a clockwise direction. Operate the ram to push the Auger into the ground. The harder the ground the more down pressure you will need.

NOTE: Do not continually stall the Planetary Drive Unit. Continual stalling may cause excessive heating of the hydraulic system.

As the Auger digs into the ground, the Ramdrill arm may travel through an arc. You may therefore have to continually reposition the Parent machine to drill vertically. Do not drill the Auger deep into the ground in one operation. Continually clearing the hole during drilling will facilitate a faster and easier operation.

NOTE: Extension shafts are available for extra depth.

Disengage machine auxiliary lever for the Planetary Drive Unit and Auger before making any adjustments or leaving the Parent Machine.

NOTE: PHD Ramdrill can be rotated clockwise and anti clockwise (pto gearbox will only rotate in reverse if parent machine is capable of rotating pto in reverse).



CAUTION: 3 POINT LINKAGE AND RAMDRILL ONLY: THE PTO SHAFT SHOULD NOT EXCEED 540 RPM

9 INSTALLATION AND OPERATION INSTRUCTIONS

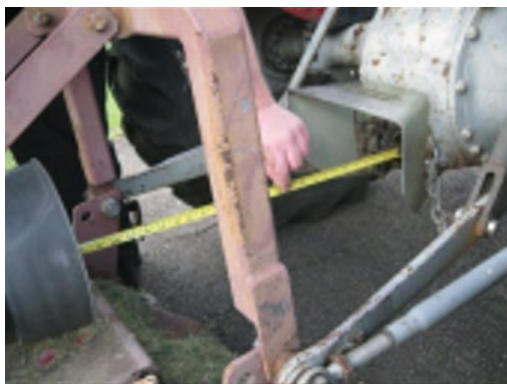
SHORTENING THE PTO SHAFT TO SUIT YOUR TRACTOR



NOTE: END THRUST FROM OVER LENGTH SHAFTS (OR SEIZED TELESCOPIC TUBES) CAN DESTROY YOUR TRACTOR'S INTERNAL PTO DRIVE OR IMPLEMENT CLUTCH AND GEARBOX, VOIDING YOUR MACHINE'S WARRANTY.

1. Measure groove to groove distance from implement shaft to tractor shaft with implement in its shortest position.

Note: Length will vary as implement is raised or lowered.



9 INSTALLATION AND OPERATION INSTRUCTIONS

SHORTENING THE PTO SHAFT TO SUIT YOUR TRACTOR - CONTINUED

2. Remove the safety guard from the new shaft and measure the length between the shaft lock buttons or clamp bolts with the shaft in its closed position.



9 INSTALLATION AND OPERATION INSTRUCTIONS

SHORTENING THE PTO SHAFT TO SUIT YOUR TRACTOR - CONTINUED

3. The required length of the shaft is its groove to groove length (as stated in step 1), minus a minimum of 76mm (3in) to allow for disconnection from the tractor and prevent End Thrust damage. If the shaft is shorter than this, ensure that 50% of the telescopic tubes overlap.



SHORTENING THE PTO SHAFT TO SUIT YOUR TRACTOR - CONTINUED

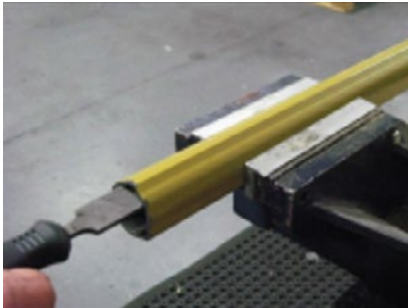
4. AMOUNT TO CUT OFF THE SHAFT

The length of the new shaft (as stated in step 2), minus the groove to groove measurement (as stated in step 1), plus 76mm (3in). Cut this amount off both inner and outer drive tubes. Remove burrs and grease tubes.

EXAMPLE:	New shaft	1194mm (47in)
	MINUS groove to groove requirement	- 890mm (35in)
	PLUS clearance	+ 76mm (3in)
	<hr/> AMOUNT TO CUT OFF	<hr/> 380mm (15in)



NOTE: THIS IS AN EXAMPLE ONLY. PLEASE INSERT YOUR OWN MEASUREMENTS.



For further information on spare parts please contact one of the Digga sales office below your closest authorised Digga Dealer.

DIGGA INTERNATIONAL SALES OFFICES

ASIA PACIFIC

DIGGA HEAD OFFICE - BRISBANE

4 Octal St, Yatala QLD 4207

PH: (07) 3807 3330

EMAIL: info@digga.com

DIGGA NEW SOUTH WALES

19 Mckay Close,
Wetherill Park, NSW 2164

PH: 1300 2 DIGGA

EMAIL: nsw@digga.com

DIGGA VICTORIA

17-21 Babbage Dr,
Dandenong, VIC 3175

PH: 1300 2 DIGGA

EMAIL: vic@digga.com

WEB: www.digga.com

NORTH AMERICA

DIGGA NORTH AMERICA

2325 Industrial Parkway SW
Dyersville IA 52040

PH: + 1 563 875 7915

WEB: www.diggausa.com

EMAIL: info@diggausa.com

EUROPE

DIGGA EUROPE

Unit 6, Smitham Bridge Road
Hungerford Trading Estate,
Hungerford, Berkshire RG17 0QU
England, United Kingdom

PH: +44 (0) 1488 688 550

WEB: www.diggaurope.com

EMAIL: info@diggaurope.com



IMPORTANT: OIL CHANGE SCHEDULE

PLANETARY DRIVE UNIT (PHD-XD Ramdrill only)

The Planetary Drive Unit has a sealed gear housing filled with Gear Oil to lubricate the Planetary Gearset, Components and Bearings within the housing. One of the main features of the DIGGA Planetary Drive Units is low maintenance, However regular checks for oil leaks and following the service schedules below are recommended to ensure you get a trouble free product.

THE GEARBOX OIL CAPACITY IS ENGRAVED ONTO THE SERIAL TAG

Initial (Bed-in) oil change:

- The first oil change must be carried out within the first 50 hours of use under MODERATE OPERATING CONDITIONS. Thereafter, every 500 hours.
- Change the gear oil after the first 30 hours of SEVERE OPERATING CONDITIONS*. (i.e. severe ambient temperature conditions of +40°C or below 0°C, when augering in hard ground.) Thereafter, every 300 hours.

	MODERATE OPERATING CONDITIONS	SEVERE OPERATING CONDITIONS*
FIRST OIL CHANGE	Within 3 months <u>OR</u> initial 50 hours of use	Within the first 30 hours of use
2ND OIL CHANGE PLUS SUBSEQUENT OIL CHANGES	After 500 hours or 12 months of use	After 300 hours of use thereafter (Drive requires a major stripdown, inspection and rebuild)

GEARBOX OIL: ISO 320 EP (EXTREME PRESSURE) GEAR MINERAL OIL - AUST/UK

*** SEVERE OPERATING CONDITIONS:- AMBIENT TEMPERATURES BELOW 0° (32°F) & ABOVE 40°C (104°F). WORKING IN HARD GROUND. EXTENDED AND CONTINUOUS HOURS OF OPERATION.**



CAUTION: IF YOU SEE ANY SIGN OF AN OIL LEAK, INSPECT AND ATTEND TO THE REPAIR IMMEDIATELY. YOUR PLANETARY DRIVE UNIT CONTAINS ONLY A SMALL AMOUNT OF GEAR OIL. CAUTION: CONTINUOUS OPERATING TEMPERATURE MUST NOT EXCEED 80° CELSIUS. CAUTION: DURING EXTENDED STORAGE PERIODS, EVERY MONTH RUN THE PLANETARY DRIVE UNIT TO IMMERSE ALL INTERNALS IN OIL, THEREBY PREVENTING CORROSION.

11 MAINTENANCE - AUGER

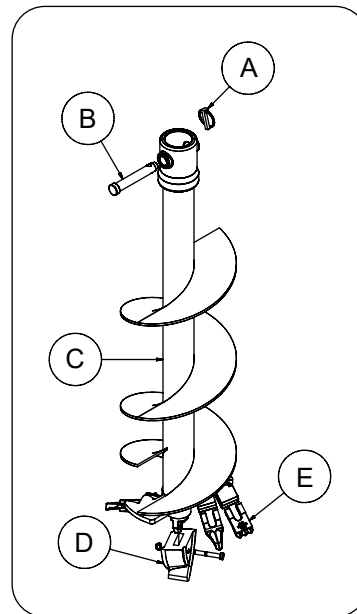
AUGER MAINTENANCE

As the Auger is engaging the ground, wear must occur when digging holes. Therefore, the Auger Teeth & Pilot must be checked regularly and replaced with new wearparts. (See Wearparts page 35) Failure to do so will damage the Auger Pockets and Flighting. This will cause costly repair to your Auger.

IMPORTANT:

CHECK THE WEAR PARTS ON YOUR AUGER ON A REGULAR BASIS. ENSURE ALL REPLACEMENT PARTS ARE GENUINE DIGGA WEAR PARTS

REF	DESCRIPTION	QTY
A	Clip	1
B	AUGER PIN	1
C	AUGER	1
D	WEAR PART - PILOT	1
E	WEAR PART - PADLOC TEETH	*



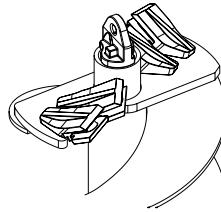
HOW TO REPLACE TEETH ON AN AUGER



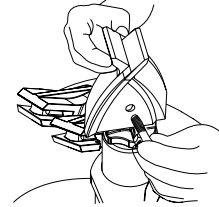
Safety glasses
must be worn



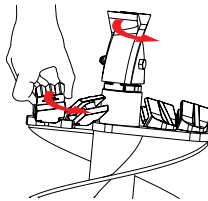
**WARNING: ALWAYS
WEAR SAFETY
GLASSES WHEN
REPLACING TEETH
ON AUGERS. RISK OF
EYE INJURY FROM
FLYING OBJECTS**



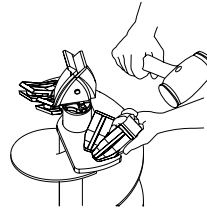
1. Position Auger so that it is easily accessible at the bottom



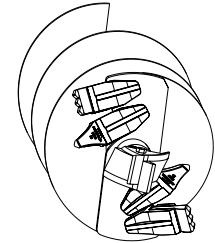
2. Place Pilot on bottom of Auger and secure with nut and bolt.



3. Place tooth in the pocket ensuring the tooth cutting edge is facing the same direction as the pilot.



4. With the tooth placed in the pocket, knock the tooth in with a soft head (copper) mallet.



5. Continue until all teeth are replaced as necessary.



**WARNING: Do not use steel
hammer, tungsten can shatter.**

12 TROUBLESHOOTING

EARTH AUGER DRIVE UNITS

TROUBLE	POSSIBLE CAUSE	REMEDY
No Rotation	Quick Release Coupler(s) not Engaged	Check Quick Release Coupler(s)
	Quick Release Coupler(s) Faulty	Replace faulty coupler(s)
	Auxiliary Valve on Machine Faulty	Refer to Machine Manual
	Hydraulic Oil Tank Low	Fill Oil tank to Maximum Level
	Hydraulic Motor failure	Contact DIGGA dealer
	Planetary Gear Failure	Contact DIGGA dealer
Slow Rotation	Machine Oil Pump Faulty	Refer to Machine Manual
	Low Oil Flow	Check Machine Specifications
Leaking Oil	Hydraulic System too Hot	See Hydraulic Section (below)
	Hose(s) or Fitting(s) Leaking	Tighten or Replace
	Motor 'O' Ring Failure	Contact your DIGGA Dealer
Output Shaft Leaking Oil	Oil Seal Failure	Contact your DIGGA Dealer
	Hydraulic Motor Failure	Contact your DIGGA Dealer
No Torque	Oil Pressure too Low	Check Machine Specifications
	Drive Unit too Small for Machine	Contact you DIGGA Dealer
	Hydraulic System too Hot	See Hydraulic Section (Below)

WEARPARTS

TROUBLE	POSSIBLE CAUSE	REMEDY
Excessive Wear	Abrasive Ground	Contact your DIGGA Dealer

HYDRAULIC SYSTEM

TROUBLE	POSSIBLE CAUSE	REMEDY
Oil Overheating	Oil Pressure too Low	Set Relief Valve for Machine Specifications
	Restriction in Line	Inspect and Repair
	Auger Continually Stalling	Limit Down Pressure
	Drive Unit too Small	Contact your DIGGA Dealer
	Machine too Small	Fit Drive Unit to Larger Machine
	Hydraulic Oil Tank Low	Fill Oil Tank to Maximum Level
	Insufficient Oil Capacity	Fit Oil Cooler

AUGERS

TROUBLE	POSSIBLE CAUSE	REMEDY
Slow Digging Speed	Worn Teeth or Pilot	Replace
	Ground too Hard	Contact your DIGGA Dealer
	Low Oil Flow	Check Machine Specifications
	Auger too Large for Drive Unit	Fit Larger Drive Unit
	Machine too Small	Fit Drive Unit to Larger Machine
Continual Stalling	Excessive Down Pressure	Limit Down Pressure
	Oil Pressure too Low	Check Machine Specifications
	Auger too Large for Drive Unit	Fit Larger Unit
	Machine too Small	Fit Drive Unit to Larger Machine
	Hydraulic System too Hot	See Hydraulic Section (Above)

WARRANTY

RAMDRILL AND RAMDRILL PHD-XD

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.

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 VOIDSWARRANTY

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.

AUGER TEETH			
LIGHT TO MODERATE Durable & cost effective	 TS-1	 TS-C-1	
MODERATE Flat Tungsten carbide braised ensures longer life	 TS-2	 TS-C-2	
GENERAL PURPOSE Multi-faceted tungsten for medium to solid ground & fracturable rock	 TS-3	 TS-C-3	 TTS-3
FRACTURABLE ROCK Multi-faceted tungsten for solid ground, fracturable rock & solid rock			 TTC-3
			 TTD-3
AUGER PILOTS			
LIGHT TO MODERATE Durable & cost effective	 PM-1	 PM-SQ-1	
MODERATE Flat Tungsten carbide braised ensures longer life	 PM-2	 PM-SQ-2	
GENERAL PURPOSE Multi-faceted tungsten for medium to solid ground & fracturable rock	 PM-3	 PM-SQ-3	 PM-HX-3

CHOOSE THE CORRECT TEETH & PILOTS

TS range: Drill into earth, clay, and shale.

TT Combination earth & rock: Drill into soft earth and clay / rip into fracturable rock



TRULOC 3-WAY LOCKING SYSTEM

- 3-way locking system.
- Pin lock, Rubber lock
- Pad Lock
- Easy to remove pin.
- Anti-twist channels.





Australian Designed and Manufactured