



Plant/Task/Layout:	Unique Code:	
Planetary drive gearboxes and drilling tools	PD + Drilling tools	
Description:	All Digga Planetary Drive Gearboxes are a high performance product that is designed for Augering (drilling), screw anchoring (pier), Core Barreling or other applications where it is requiring speed and high pressure to perform the work. This risk assessment includes all models including the following (PD all the way up to the XD500) and (SD-45, SD-50, SD-70, SD-80 & SD-95) and any drilling attachments which can be attached to these drives including (core barrel, clean out buckets, drilling buckets, augers, screw anchors and core barrels)	
Department:	Location/Project:	Area:
Admin QLD	Head Office	
Process:	Risk Assessment Completed By:	Risk Assessment Date:
Design/Engineering	Ryan Bowen	16/09/2020
Documents:		

Hazards with Added Risks

Item	Risk Description	Initial Risk	Control(s)	Reviewer	Review Date	Residual Risk
Abnormal Situation						
Could any foreseeable abnormal conditions, misuse or fluctuations in operation conditions create potential hazards? (State nature of hazards)	Planetary drives gear boxes and augers must have maintenance performed regularly to avoid abnormal conditions, misuse or fluctuations in operation.	13 (Medium) 52.00%	Operational manual recommends an oil change schedule for the gear box, these manufacturing instructions must be followed to ensure the warranty is maximized	Anthony Wieckmann	19/09/2023	9 (Medium) 36.00%
Condition						
Is a hazard likely due to the age and condition of the plant?	Not checking and replacing wear parts could cause damage to drilling tools if not checked and inspected regularly	13 (Medium) 52.00%	Drilling tools are designed to replace wear parts (rotating picks, teeth, pilots) to avoid damage to the main digging attachment these require constant maintenance to remain effective	Anthony Wieckmann	21/09/2023	9 (Medium) 36.00%
Crushing/Trapping						
<i>Can anyone be crushed/trapped due to</i>						
The plant tipping or rolling over?	People could become crushed or trapped under the auger if the auger is stored incorrectly during transport or rolls over due to uneven ground	9 (Medium) 36.00%	Purpose built stillage is recommended to eliminate any trapping or crushing hazards during transport or normal storage however laying down the auger is acceptable if secured correctly	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
			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	Anthony Wieckmann	21/09/2023	
			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 disengagement or shifting of the unit. Failure to do so could result in serious personal injury or death.	Anthony Wieckmann	21/09/2023	
Lack of capacity to slow, stop or immobilise plant?	Bystanders could be crushed or trapped due to lack of capacity to slow or stop the auger when it is spinning	9 (Medium) 36.00%	Recommended that owner operator keeps all bystanders at 20 feet or 6 meters whilst machine is in operation	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
			Host machine controls all hydraulic movement from inside the Cab of the Host machine	Anthony Wieckmann	21/09/2023	
Material falling off the plant?	People could become injured if the drive unit or the drilling tools separate when moving from hole to hole if pins not connected properly misuse during operation.	13 (Medium) 52.00%	Dependent on the host machine, driver training and experience is recommended	Anthony Wieckmann	20/09/2023	9 (Medium) 36.00%
			Operator manual describes how to safely connect the drilling tools to Planetary drive and host machine and how to extend life of equipment by correct digging technique	Anthony Wieckmann	21/09/2023	



Item	Risk Description	Initial Risk	Control(s)	Reviewer	Review Date	Residual Risk
Uncontrolled/unexpected movement of plant/load?	Leaving the host machine or directing a bystander to dislodge spoil from the drilling tools whilst host machine in operation	18 (High) 72.00%	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 10 kgs must be moved mechanically or by using at least two people Operator not to leave host machine unless machine is isolated or turned off and no bystanders to be within (20 feet - 6 meters) from the work area.	Anthony Wieckmann	21/09/2023	10 (Medium) 40.00%
Electricity						
<i>Can anyone be injured by electrical shock or burnt due to</i>						
Working in close proximity to electrical conductors?	Bystanders or worker could become injured (electrocuted) if they come into contact with live overhead or underground electrical utilities.	18 (High) 72.00%	Operators manual identifies safety precautions to take prior to digging , this includes contacting local utilities provider to see if there is any buried utility lines (gas, water, sewer or electricity) we recommend in Australia- you dial before you dig call ext. 1100	Anthony Wieckmann	19/09/2023	14 (Medium) 56.00%
Entanglement						
Can anyone's hair, clothing, gloves, cleaning brushes, tools, rags or other materials become entangled with moving parts of the plant or materials?	Bystanders could become entangled with the moving drilling tools due to incorrect operation of plant and equipment and by not following operators manual.	18 (High) 72.00%	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.	Anthony Wieckmann	18/09/2023	14 (Medium) 56.00%
			Operate only from the operator's station (Cab, platform)	Anthony Wieckmann	18/09/2023	
			Do not allow Site workers to climb or ride on a drill mast, Planetary Drive, Auger or Auger Extension at any time, including while stationary, in operation or being moved or rotated	Anthony Wieckmann	18/09/2023	
			Operator manual clearly states that all bystanders and workers should stand at 20 feet (6 meters) from the work area as a minimum when operating the PD and auger	Anthony Wieckmann	18/09/2023	
Can other items become entangled in moving parts of the plant? (air hoses, power cables)	Hydraulic lines and case drains coming from the planetary drive unit could be come entangled if not secured properly or installed as per manufacturers recommendations	9 (Medium) 36.00%	Engineered industry standard screw fittings and quick release couplings are used on all plant and equipment to eliminate incorrect installation, this makes it easier of the operator to change between digging attachments and or host machines Size specific Planetary drives are used with correct hose length and sizing when purchased which will eliminate excess hoses becoming entangled	Anthony Wieckmann	22/09/2023	6 (Low) 24.00%
Anthony Wieckmann	23/09/2023					
Falls from Heights						
<i>Can anyone fall from a height due to</i>						
Unprotected holes, penetrations or gaps?	Anyone could fall into a hole being dug if the work area is not barricaded from general public	9 (Medium) 36.00%	Open bore holes must be capped and flagged, it is important for the owner operator to manage the working area and surrounds	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Friction						
Can anyone be burnt due to contact with moving parts, materials or surfaces of the plant?	If drilling into rock for extended periods, people could become burnt if they make contact with the wear parts of the auger which could heat up under extreme conditions	8 (Medium) 32.00%	Recommend PPE is used when handling hot or sharp surfaces	Anthony Wieckmann	22/09/2023	5 (Low) 20.00%
			Recommended that water be poured into hole to reduce heat along with wear and tear on wear parts, this helps with spoil removal and reducing dust to the operator	Anthony Wieckmann	22/09/2023	
			Recommended to limit time in drilling and remove the drilling tool from the hole regularly to cool down	Anthony Wieckmann	21/09/2023	
Location						
Is the location of the plant appropriate? (Consider potential affects due to the environmental conditions and terrain)	Workers could be injured if working in rain or uneven surfaces as the area could become hazardous due to excess water and mud	9 (Medium) 36.00%	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.	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Manual Handling						



Item	Risk Description	Initial Risk	Control(s)	Reviewer	Review Date	Residual Risk
Does the task involve long carrying distances?	Operators could sustain a manual handling injury if carrying augers or PD units long distances	5 (Low) 20.00%	Recommended all moving or equipment is in line with each persons ability and workplace manual handling limits, carrying plant and equipment should be avoided to eliminate manual handling	Anthony Wieckmann	21/09/2023	3 (Low) 12.00%
Are the forces and loads handled bulky, large or awkward?	Workers could sustain injury due to heavy loading of the body or body parts when setting up or packing down the plant	9 (Medium) 36.00%	Dependent on the host machine, all equipment is designed with quick release devices for easy attachment and removal, minimal force on the body is required for setting up or packing down.	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Noise						
<i>Can anyone using the plant, or in the vicinity of the plant suffer injury due to</i>						
Exposure to noise levels exceeding the maximum daily dose level? (85 dB(A) per 8hr day)	Depending on the environment or ground conditions, bystanders or workers could be exposed to noise levels exceeding the maximum daily dose levels.	9 (Medium) 36.00%	Most noise is eliminated by spoil in the hole, Noise is eliminated in the host machine - auger and PD drives don't produce excessive noise when drilling	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Other						
<i>Can anyone be injured or suffer ill-health from exposure to</i>						
Dusts?	Workers or bystanders could be exposed to dust depending on the terrain and the environment being dug	9 (Medium) 36.00%	PPE for workers should be introduced based on the site safety requirements and risk assessments Water used for cooling of the hole to reduce damage to wear parts acts as a dust suppression system	Anthony Wieckmann Anthony Wieckmann	21/09/2023 21/09/2023	6 (Low) 24.00%
Pressurised Content						
Can anyone come into contact with fluids or gas under high pressure, due to plant failure or misuse of the plant?	Bystanders or workers could be injured if they come into contact with hot hydraulic fluids (under pressure or if they burst) or if they connect the coupling wrong or they use inferior / non genuine equipment or if equipment failure occurs	8 (Medium) 32.00%	Engineering: All hoses fitted with a heavy duty hose when manufactured Quick release couplings used for easy connection	Anthony Wieckmann Anthony Wieckmann	21/09/2023 21/09/2023	5 (Low) 20.00%
Shearing						
Can anyone's body parts be sheared between two parts of plant, or between a part of the plant and a work piece or structure?	Bystander or worker's body parts could be sheared between two parts of the plant or structure if people stand or work from outside of a secure and safe cab, risk is increased the close they go to the spinning auger	13 (Medium) 52.00%	Safe working distance for a bystander is (20 feet or 6 meters)	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Slips/Trips/Falls						
<i>Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to</i>						
Uneven or slippery surfaces?	Anyone in or around the working surface could slip/ trip/ or fall on the spoil (soil) that is removed from the hole being dug, or could fall into the hole being dug if not concentrating on the job at hand.	9 (Medium) 36.00%	Operator manual recommends that all digging 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 10 kgs must be moved mechanically or by using at least two people.	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%
Systems of Work						
Are operating procedures provided?	Operator could operate plant and equipment without firstly reading the Operator manual and the safe way to operate the PD gearbox and augers	8 (Medium) 32.00%	Operator manual issued with each and every plant and equipment sold to customers, this manual describes safety information, operating instructions, technical specifications, maintenance requirements, spare parts, warranty etc.	Anthony Wieckmann	21/09/2023	5 (Low) 20.00%
Have adequate arrangements been made for safe access and egress from the plant?	Operators or bystanders could be injured if machine not parked up correctly when exiting the host machine or when moving between work sites -if not made secure before exiting the cab of the host vehicle	9 (Medium) 36.00%	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. Travel only with the planetary drive in a safe transport position to prevent uncontrolled movement. Drive slowly over rough ground and on slopes. Before exiting the host machine, lower the attachment to the ground, apply the parking brakes, turn off the prime mover's engine, and remove the key.	Anthony Wieckmann Anthony Wieckmann Anthony Wieckmann	21/09/2023 21/09/2023 21/09/2023	6 (Low) 24.00%
Temperature						
Can anyone come into contact with	Temperature control needs to be considered when digging	9	Water can be used to cool down the drilling tools by putting water in hole, it also makes spoil easier to remove	Anthony Wieckmann	21/09/2023	6 (Low)



Item	Risk Description	Initial Risk	Control(s)	Reviewer	Review Date	Residual Risk
Objects at high or low temperatures?	for extended periods into rock or other hard terrain.	(Medium) 24.00%	Every 5 minutes, the operator must stop drilling, bring the auger to the surface allowing the air back down the hole and for the parts to cool down	Anthony Wieckmann	21/09/2023	
Vibration						
Can anyone be injured or suffer ill health from exposure to vibration?	Due to the environment or the ground conditions, people could be injured due to the vibration from the auger penetrating the ground	9 (Medium) 36.00%	Different auger teeth are used for different ground conditions and must be inspected. If augering, check the auger teeth and pilots are not worn. Ensure all worn parts are replaced. Worn parts will become ineffective and severely diminish the overall performance of the Planetary Drive and Auger.	Anthony Wieckmann	21/09/2023	6 (Low) 24.00%

Hazards Deemed Not Applicable

Item
Entanglement
<ul style="list-style-type: none"> Other factors
Crushing/Trapping
<i>Can anyone be crushed/trapped due to</i>
<ul style="list-style-type: none"> Parts of the plant collapsing? Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair? Being thrown off or under the plant? Other? Being trapped between the plant and other structures?
Cutting, Stabbing, Striking, Puncturing, Abrasion and Tearing
<i>Can anyone be cut, stabbed or punctured due to</i>
<ul style="list-style-type: none"> Contact with sharp or flying objects? Contact with moving parts during testing, inspection, operation, maintenance, cleaning or repair?



Item

- Work pieces being ejected?
- The mobility of the plant?
- Uncontrolled or unexpected movement of the plant?
- Other?

Electricity

Can anyone be injured by electrical shock or burnt due to

- Live electrical conductors?
- Overload of electrical circuits?
- Damaged or poorly maintained electrical leads, cables or switches?
- Water near electrical equipment?
- Lack of isolation procedures?
- Other?

Noise

Can anyone using the plant, or in the vicinity of the plant suffer injury due to

- Excursions above 140 dB(A)?

Radiation

- Can anyone using the plant, or in the vicinity of the plant suffer injury or illness due to exposure to radiation? (Consider all types of radiation, X-rays, Gamma rays, Microwaves, UV, IR, Lasers)



Item

Lighting

- Is lighting adequate for normal operation, cleaning and maintenance?

Fire and Explosion

- Can anyone be injured by fire?
- Can anyone be injured by explosion of gases, vapours, liquids, dusts or other substances?

Temperature

- Other?

Suffocation

- Can anyone be suffocated due to lack of oxygen, or Atmospheric contamination?

PPE

- Is PPE required to operate this item?
- Is appropriate PPE signage displayed on this item?
- Other?

Slips/Trips/Falls

Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to

- Poor housekeeping, eg. swarf or spillage in the vicinity?

Ergonomics

Can anyone be injured due to

- Poorly designed seating?



Item

- Repetitive body movement?
- Constrained body posture or movement or maintaining the same posture for prolonged periods?
- Other?

Manual Handling

- Do the actions and postures involve reaching upwards or handling loads above shoulder height?
- Do the actions and postures involve holding loads away from the body?
- Do the actions and postures involve twisting the back, neck or upper body?
- Do the actions and postures involve sideways bending or loading handling on one side?
- Does the task involve sudden jerky, rapid or unexpected movements?
- Are the loads handled difficult or uncomfortable to grasp or hold?
- Are the loads handled unstable, unbalanced or unpredictable?
- Does the task require strenuous pushing or pulling?

Guarding and Emergency Stops

- Are all moving parts guarded? (i.e. Rotating collars, spindles, shafts, chains, belts, nip points etc)
- Are emergency stops clearly marked and operational?

Location



Item

- Does the plant impact on the surrounding workplace and Create potential hazards? (Consider potential impact on the design and layout of the workplace)
- Other?

Abnormal Situation

- Are there any Intermittent conditions which causes an employee to take out of the ordinary action?
- Other?

Systems of Work

- Could work systems/processes associated with the plant create potential hazards? (list hazards)
- Are operator controls located appropriately and clearly labelled?

Other

Can anyone be injured or suffer ill-health from exposure to

- Chemicals?
- Toxic gasses or vapours?
- Fumes?
- Oils?
- Other?

Falls from Heights

Can anyone fall from a height due to



Item
<ul style="list-style-type: none">• Lack of proper work platforms, stairs or ladders?
<ul style="list-style-type: none">• Lack of guardrails or other suitable edge protection?
<ul style="list-style-type: none">• Poor floor or walking surfaces, such as the lack of a slip-resistant surface?
<ul style="list-style-type: none">• Steep walking surfaces?
<ul style="list-style-type: none">• Collapse of the supporting structure?
<ul style="list-style-type: none">• Other?