

DINGO™

Post Hole Digger

PRO Series PHD



Wheel Motor
PHD

OPERATION & MAINTENANCE MANUAL

IMPORTANT: Become familiar with the contents of this manual and the Dingo Operation and maintenance manual before operating the Posthole Digging attachment. Information about the Dingo is contained in the Dingo Operation and Maintenance Manual.



Modified May 2010

Introduction

This Post Hole Digger has been carefully designed and manufactured to give you years of reliable service. Please read this operation and safety manual to keep your Post Hole Digger running efficiently.

The information in this manual is current as at May 2010. In the effort to continually improve our products, Dingo reserves the right to change specifications without notice. Please, for critical information, contact you nearest Dingo branch.

We want you to be completely satisfied with your new product, so feel free to contact your local Dingo branch for help with service, replacement parts and any other information about the Dingo and its attachments.

Whenever you contact your local Dingo branch always know the model and serial numbers of your product. These numbers will help us to provide exact information about your specific product. You will find the model and serial number on a plate located on the product.

For your convenience, write the product model and serial numbers in the space below.

Model No: _____

Serial No: _____

DISCLAIMER:

Specifications, design & service procedures are subject to change without notice.
Specifications may vary & may be approximate.

Contents

Safety	4
Operation	4
Maintenance	5
Augers	5
Wear Parts	5
Auger Teeth	5
Changing Teeth	6
Auger Pilots	6
Digging Tips	7
Post Hole Digger Assembly	8
PRO Series PHD Assembly	9
Wheel Motor PHD	10
Wheel Motor PHD Assembly ...	11
Troubleshooting	12
Warranty Statement	14

Safety

Be a responsible operator and become familiar with this manual, the Dingo Operation and Maintenance Manual, the machine and the attachment. Improper use can result in injury.

Use extra caution when operating on hills, slopes or uneven ground (Refer to the Dingo Operation and Maintenance Manual).

Do not side shift while auger is turning.

Do not place any part of yourself, or any person under the Dingo arms.

It is the operators responsibility to operate away from pedestrians and establish appropriate isolation measures.

Do not operate close to edges or excavations etc. Do not operate on or near embankments. Look out for ditches, holes, etc. and beware of traffic when near roads.

Reduce speed while moving with Post hole digger attached.

Do not rotate auger whilst travelling.

Keep hands, feet and clothing away from all moving parts

Allow only responsible adults who are familiar with the Dingo and its operation to use the Dingo

Do not operate any of the control levers (including auxiliary lever) unless you are standing with both feet on the platform and firmly holding the grip handles.

Wear appropriate clothing including hard hat, safety glasses, long pants, and safety shoes.

Do not exceed the rated operating capacity.

Stop the engine before making any adjustments to the attachments or the machine.

Operate only in daylight or good artificial lighting.

Do not operate equipment while under the influence of alcohol or drugs, or while otherwise impaired.

Do not touch equipment or attachment parts that may be hot from operation. Allow to cool before attempting to maintain, adjust or service.

Never let children or untrained people operate or service the Dingo.

Do not allow any person or animal close to the Dingo or its attachments whilst in operation. Stop the machine if any person or animal approaches

Do not place feet under the platform.

Ensure attachments are clearly visible from operators position allowing good manual control of load position, always refer to the specific attachment operation manual before operating the attachment.

IMPORTANT Do not carry a load or heavy attachment with the Dingo arms in a raised position. Do not step off the platform with a load raised.

Never carry passengers and keep pets and bystanders away from the Dingo

Operation- Pre Start-Up Pre Start-Up (daily)

Become familiar with this manual and the Dingo manual. Before commencing operation each day perform the following pre start checks;

Perform daily pre-start as per the specific operations manual for the Dingo.

OPERATOR

Operator has been trained in safe use of machine

Operator is competent for the intended use (including competent in the use of relevant attachments)

Operator has appropriate clothing and personal protective equipment;
Fully enclosed non slip footwear (safety boots)
Long pants and shirt
Safety glasses
Hard hat if working in areas with a risk of falling items or overhead obstacles
Hearing protection

Operator is supervised if undergoing training

WORK AREA

Ground conditions are firm and stable

Sloping ground has been identified

Holes have been identified and isolated

Embankments have been marked

Tree stumps, rocks and other hazards have been identified

Water courses (dams, creeks, rivers) have been clearly marked

Underground and aboveground services have been identified and isolated if necessary: Dial before you dig .Phone1100

Site physical hazards have been identified

Dust, noise, traffic and other adverse conditions have been controlled

Persons not involved in the work have been excluded from the area.

Children and animals have been removed from the area

Children

Be wary of the presence of children when operating a Dingo.

Keep children out of the work site and under the watchful care of a responsible adult.

Be alert and turn the machine off if children enter the area.

Never carry children (or anyone) on the Dingo or any of its attachments.

Do not allow children to play on the Dingo or within the Dingo work site (aside from the danger of working machinery there may be holes into which a child could fall or various other dangers).

Do not allow children to operate the machine.

Before reversing look behind and down for small children. Be aware of blind corners, shrubs, trees, or ends of fences that may obscure vision.

Operation

- 1 Ensure the Auxiliary hydraulics lever is in the neutral position before connecting the Post Hole Digger.
- 2 Disconnect other attachment and connect Post Hole Digger as per instructions in the Dingo Operation and Maintenance Manual. Follow all steps for connecting an attachment that requires auxiliary hydraulics. The Dingo Operation and Maintenance Manual explains the use of the auxiliary hydraulics lever. **Note:** Auger digs in a clockwise direction. If the auger is attached to Post Hole Digger go to step 6.
- 3 Have the auger lying on the ground surface pointing away from the front of the machine.
- 4 Lower the Post Hole Digger drive head (mounted on the machine) to the ground near the sleeve end of the auger.
- 5 Slide the auger sleeve onto the drive head shaft, align the holes in both and secure with the drive and lynch pin, which hold the auger in place.
- 6 Manoeuvre the Dingo to the required spot for drilling. Lower the auger till the pilot is touching the ground. Move the pump selector to the turtle position. The turtle position allows the big pump to power the Post Hole Digger and the small pump to power the Dingo wheels and arms. (i.e. more power is delivered to the Post Hole Digger, where it is needed most)
- 7 Start the auger rotating with the Auxiliary lever and lower the arms to push auger into the ground. The harder the ground the more pressure you will need to apply to the auger.
- 8 The front wheels may lift off the ground. Do not operate the machine in an unsafe manner (refer to the Dingo Operation & Maintenance Manual).
- 9 As the auger digs into the ground the arms will travel through an arc, therefore adjustment will need to be made to the position of the Dingo to keep the auger at the desired angle.
- 10 Do not drill the auger deep into the ground in one operation. Continually clearing the hole during digging will facilitate an easier operation. It may be necessary to clear dirt from the auger flights by spinning the auger quickly forward or by changing from forward to reverse quickly and repeatedly. This is best done off to the side of the hole.
- 11 The Post Hole Digger is designed to dig in most digging conditions. With the selection of Dingo Tungsten Carbide Rock teeth, some rock structures can be dug. It is impossible to dig all types of rock.
- 12 Disconnect the Post Hole Digger as per instructions in the Dingo Operation and Maintenance Manual.
- 13 Remember, as with any type of drilling, you need a sharp drill point. Auger teeth and pilot must be in good condition if the auger is to work correctly. See wear parts section for more information.
- 14 When travelling with the auger attached, tilt the drive head back so the auger points out the front and does not swing freely. This prevents the auger swinging back and damaging the front of the Dingo.
- 15 If more down pressure is required, use the “Post Hole Mate” on the back of the machine. If in doubt, contact your Dingo representative.
- 16 **If drilling on uneven ground**, it may be necessary to loosen the two grub screws (Item 16 on page 10) to allow the auger to swing from left to right as well as back and forward. To do this, loosen the lock nuts and turn grub screws anti-clockwise until planetary drive is able to swing from left to right. Then retighten lock nuts. This will free up the auger to hang vertically even if drilling holes across a slope.

Maintenance

Post Hole Digger

One of the features of your Dingo Post Hole Digger is its low maintenance. While this is true, it is wise to check for oil leaks on a regular basis to ensure your Post Hole Digger remains in working order.

Augers

As the auger is engaging the ground wear must occur to dig holes. Therefore, the auger teeth and pilot must be checked regularly and replaced as necessary (see wear parts section). Failure to replace missing and worn teeth will damage the auger pockets and flighting resulting in costly repairs.

Wear Parts

Auger Teeth

Make sure that your auger teeth are in good condition so that your drilling performance is satisfactory and wear on your auger is minimised.

Changing Teeth

- 1 Tap the worn tooth from the tooth pocket using a hammer and a punch or old screw driver etc.
- 2 Remove the old rubber from within the tooth pocket.
- 3 Replace with a new rubber. It is a good idea to lubricate the new rubber with water to prevent it breaking when the new tooth is inserted. The rubber should measure just short of the width of the tooth.
- 4 Insert the new tooth by tapping it with a copper or plastic hammer (Your normal hammer may chip the cutting edge of the new tooth).



Standard Earth Tooth



Tungsten Earth Tooth



Tungsten Rock Tooth (Hard Digging)



Earth Spear Tooth



Tungsten Earth Spear Tooth

Auger Pilots

The condition of your pilot is most important to ensure good ground penetration. Whilst it seems such a small part of your overall drill, **it is the most important part of the auger.**

Note: Rock teeth and pilots will not dig earth, soil, etc. They are designed to grind away rock, not chisel into it.

Earth teeth and pilots are designed to chisel into earth - not rock.

It is simple to change teeth and pilots and it is much more cost efficient to do this than to use the incorrect or worn teeth and pilots.

Dingo augers are configured with tungsten earth teeth in the outside pockets (the outside teeth travel the greatest distance & wear fastest), earth spear teeth in the inside pockets (for better ground penetration) and an earth pilot. This configuration has been found to be a good cost vs wear combination in most soil conditions. Ask your Dingo representative about the tooth combination that most suits your soil conditions.



Standard
Earth Pilot



Tungsten
Earth Pilot

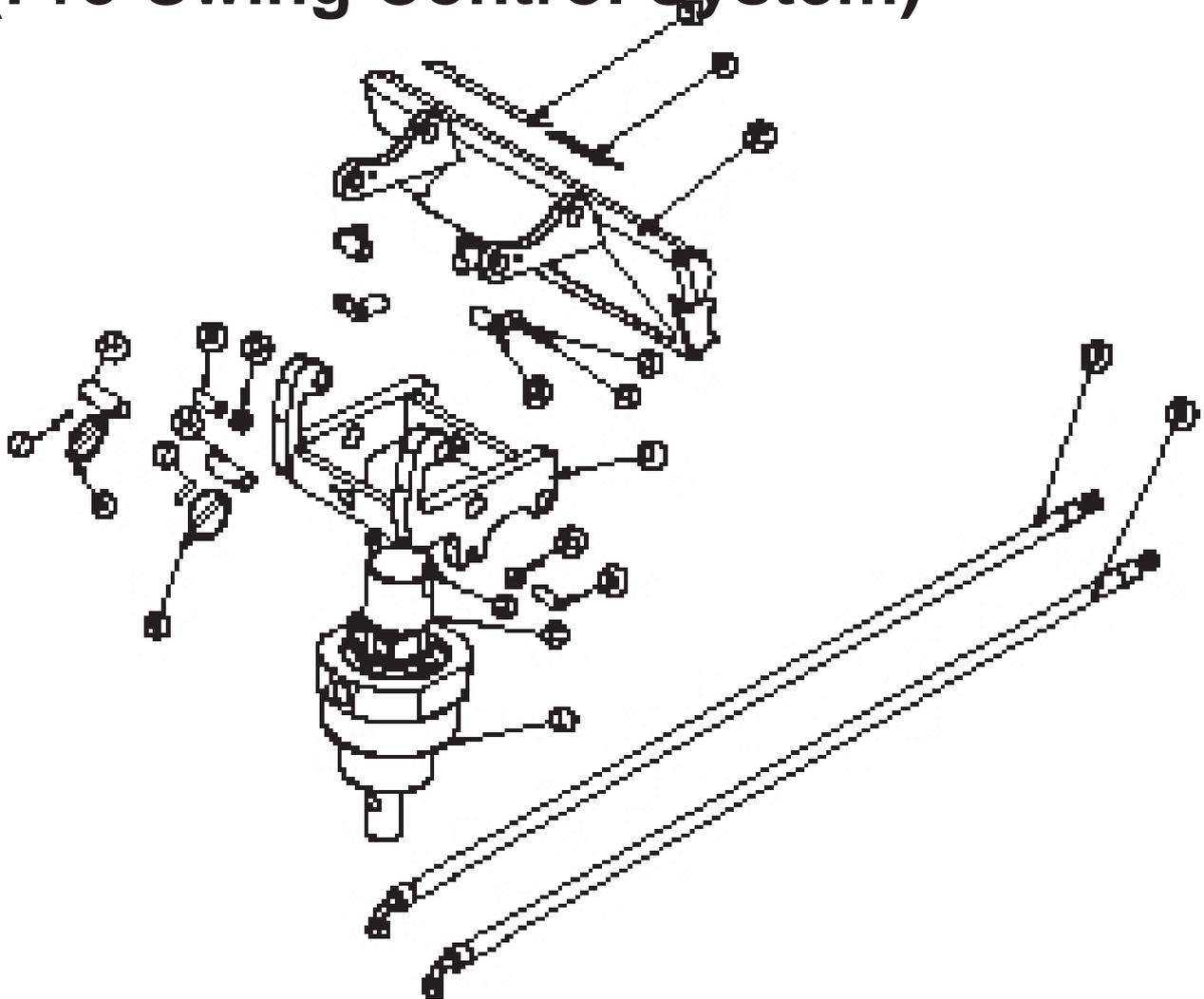


Tungsten
Rock Pilot
(Hard Digging)

Digging Tips

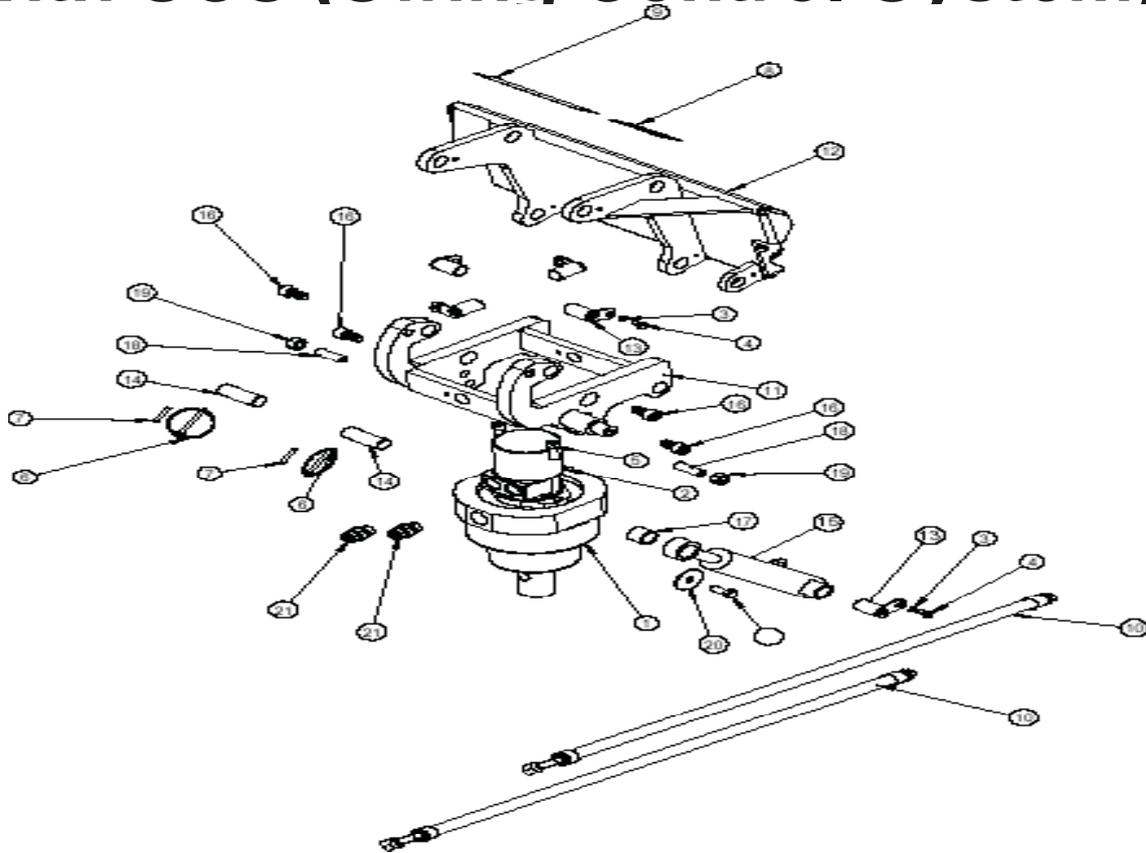
- In dry conditions pour water into the hole to help clean the last of the material from the bottom.
- Use a “Diggers Mate” on the foot plate of the Dingo to give extra down pressure on the auger in hard digging.
- Water can also help in stony conditions to loosen the stones from their position.
- Using water when boring into rock will keep your teeth cooler and lasting longer.
- Rock teeth are only good for boring into solid rock. Use earth teeth for stony ground.
- When using larger augers, only dig into the ground up to the top of the auger flight. Then remove the auger and clean it. Continue this process until the desired depth is reached. Going in deeper than the top of the auger flights may make the auger too heavy to lift from the ground.
- In grassy conditions reverse the auger whilst in the ground to remove any grass that has become tangled amongst the teeth.
- Use auger extensions to go deeper. The Dingo can dig to 1.5m normally, and to 2.3m with an auger extension.

Post Hole Digger Assembly (Pre-Swing Control System)



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	060-100-010	Planetary Drive Assembly PHD with Motor
2	1	331-011-001	Hyd Mtr Suit PHD
3	6	132-221-000	Spring Lock Washer 5/16"
4	6	111-311-016	Hex Bolt M8 x 16
5	2		Socket Head Cap Screw 1/2 x 1 1/4" UNC
6	2	100-000-013	Lynch Pin 1/4"
7	2	100-000-051	Roll Pin 1/4" X 1 1/2"
8	1	021-000-024	I.D. Plate for Attachment
9	1	021-000-035	Caution Decal
10	2	APU015	PHD Hydraulic Hose 1300mm
11	1	APU005	PHD Driver Carriage (Can Use New Style)
12	1	APU002	PHD Mount Plate Assembly (Can Use New Style)
13	6	APU008	40mm Pin
14	2	APU010	Locking Pin
15	2	121-371-000	5/8" UNC Zinc Nut
16	2	113-822-032	5/8" X 2" Grub Screw

PRO Series PHD Assembly With SCS (Swing Control System)



ITEM	QTY.	PART NO.	DESCRIPTION
1	1	060-100-010	Planetary Drive Assembly PHD with Motor
2	1	331-011-001	Hyd Mtr Suit PHD
3	6	132-221-000	Spring Lock Washer 5/16"
4	6	111-311-016	Hex Bolt M8 x 16
5	2		Socket Head Cap Screw 1/2 1 1/4" UNC
6	2	100-000-013	Lynch Pin 1/4"
7	2	100-000-051	Roll Pin 1/4" X 1 1/2"
8	1	021-000-024	I.D. Plate for Attachment
9	1	021-000-035	Caution Decal
10	2	APU015	PHD Hydraulic Hose 1300mm
11	1	060-150-000	PHD Driver Carriage
12	1	APU002	PHD Mount Plate Assembly
13	6	APU008	40mm Pin
14	2	APU010	Locking Pin
15	1	060-100-079	Ram Damper Anti-Swing PHD
16	4	113-722-016	5/8"UNC X 1" Cap Screw
17	1	043-000-056	Bush - 1 1/4" X 1" X 26mm
18	2	113-822-032	5/8" X 2" Grub Screw
19	2	121-371-000	5/8" UNC Zinc Nut
20	1	131-251-001	1/2" Body Washer
21	2	316-477-501	CR2-0814
22	1	111-511-026	Hex Bolt M12 x 30 Zinc

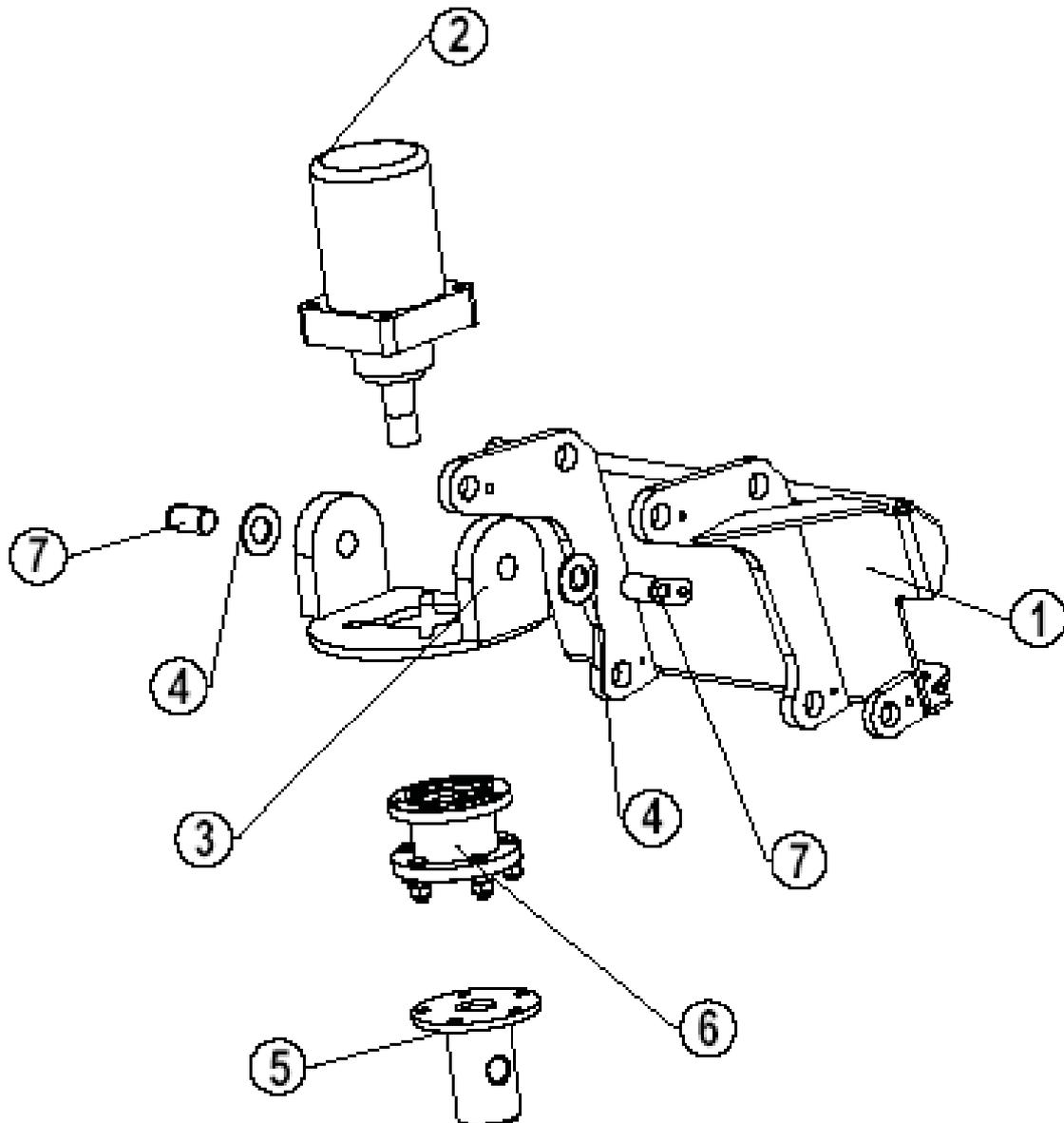
Wheel Motor Post Hole Digger

- The Wheel Motor Drive Post Hole Digger is only to be used with augers up to 300mm in diameter.
Failure to comply with this requirement will result in the Warranty on this product being voided.
- The Auger and Drive Head of this attachment swings freely, so please show caution when operating or travelling with the Wheel Motor PHD.



Wheel Motor Post Hole Digger Assembly

ITEM	QTY	PART NO.	DESCRIPTION	MATERIAL
1	1	APU002	Mount Plate Assembly	Sub Assembly
2	1	330-001-006P	Wheel Motor	
3	1	APU215	Motor Mount Assembly	Sub Assembly
4	2	APU206	Swivel Spacer Washer	3mm MS Sheet
5	1	AEX017	Hub Mount Assembly	Assembly
6	1	APU210	Drive Hub Assembly	Assembly
7	2	APU008	42mm Pin	Sub Assembly



Troubleshooting

Problem

Possible Cause & Remedy

Auger does not rotate	1.	Auxiliary hydraulics not engaged properly
	-	<i>Check quick couplers</i>
	2.	Quick coupler faulty
	-	<i>Replace faulty coupler</i>
	3.	Auxiliary valve on Dingo not operating correctly
	-	<i>Refer to Dingo manual, call DINGO service</i>
Oil leakage from inside housing	4.	Hydraulic Motor Failure
	-	<i>Replace motor. Contact DINGO</i>
	5.	Gear train failure
	-	<i>Check and repair. Contact DINGO</i>
	6.	Drive shaft bearing
	-	<i>Check and repair. Contact DINGO</i>

Oil leakage from inside housing	1.	Hoses or fittings leaking
	-	<i>Tighten or replace</i>
	2.	'O' ring failure
-	<i>Call DINGO service</i>	

Oil Leaking from output shaft	1.	Oil shaft seal failure
	-	<i>Call DINGO service</i>

Does not dig	1.	Worn teeth or pilot
	-	<i>Replace</i>

Note: It does not take a lot of wear to reduce digging efficiency substantially. When teeth & pilots appear half worn out, they are often actually worn out. Digging efficiency will be lost and time and money will be wasted in everything but extremely soft conditions.

Note: The Post Hole Digger does have limits.

- | | |
|----|---|
| 2. | Incorrect teeth or pilot |
| - | <i>Replace</i> |
| 3. | Relief valve on Dingo set too low |
| - | <i>Test and reset if necessary</i> |
| 4. | Hydraulic system hot |
| - | <i>Turn off and wait to cool.</i> |
| - | <i>Hydraulic oil may be damaged or incorrect type.</i> |
| | <i>Replace Dingo oil with recommended hydraulic oil</i> |
-

Auger Bent	1.	Abuse
	-	<i>Replace or repair auger</i>

Plant Risk Assessment

Part A: Risk Assessment Summary

Risk Rating Key:

V.High

High

Medium

Acceptable



Product:	Post Hole Digger (auger attachment)		
Plant Usage/Task Description:	K9-3 and K9-4 PHD attachment used for digging holes.		
Hazard Identification & Risk Assessment:	Entanglement	Electrical Safety	Thermal Comfort or UV Radiation
	Crushing	Fire or Explosion	Traffic Management
	Cutting, Stabbing, Puncturing	Slips, Trips and Falls	Chemicals
	Shearing	Working at Heights	Dust
	Friction	Suffocation (confined spaces)	Noise
	Striking	Hot Surfaces	Vibration
	High Pressure Fluid	Manual Handling and/or Ergonomics	Rollover
Control Measures:	1. Simple linkage system reduces the need to handle attachments which can be fitted without or with reduced manual handling (engineering). Auger lifting attachment available for handling augers.		
	2. Hydraulic oil within double braided hose rated for 4000 psi. Maximum pressure achieved by Dingo K9-4 is 3400 psi (engineering).		
	3. Dingo Equipment Australia offer the following options available with the K9-4 purchase to reduce traffic management risks (engineering): <ul style="list-style-type: none"> – Flashing light; – Reversing alarm; – Horn; and – Headlights (front and rear) 		
	4. Read and understand hazard warning signage prior to operation.		
	5. Operation and maintenance manual has warnings outlining operator's responsibility to operate away from pedestrians and establish appropriate isolation measures (Administration).		
	6. Operational Manual and safety video provided with all purchases. Training is also provided to all purchasers of plant. Operator's manual details safe operation of K9-4. Safety cards are with the machine and provided to all personnel who hire the Dingo (administration).		
	7. Do not operate attachment without standing on platform.		
Residual Risk:	MEDIUM		

Warranty Statement

DINGO MINI DIGGERS PTY LTD (ABN 95 060 840 011) POLICY

DINGO MINI DIGGERS PTY LTD warrants to the original buyer/owner that each new Dingo™ or Dingo attachment will be free from any proven defects in the material or workmanship for a period of thirty-six (36) months or 1000 hours, whichever is sooner, after the delivery to the owner provided that:-

1. The Dingo/Attachment has been properly and reasonably used, operated, maintained and regularly serviced.
2. All replacement or repair is authorised by DINGO MINI DIGGERS PTY LTD or an authorised DINGO MINI DIGGERS dealer.

This refers to all Dingo/Attachment parts, excluding motor and battery as outlined below.

During the warranty period, DINGO MINI DIGGERS or their authorised dealer shall repair or replace, at their option, without charge for parts and labour, any part of the Dingo/Attachment which fails because of defects in the workmanship or materials. The owner shall advise DINGO MINI DIGGERS or their authorised dealer immediately of any defect and allow reasonable time for replacement or repair. Travel time for servicemen and transportation of the Dingo/Attachment to DINGO MINI DIGGERS or the dealers premises for warranty work are the owners responsibility.

WARRANTY EXCLUSIONS

This warranty does not cover: -

1. Tyres or other consumables or service parts (nuts and bolts, trencher teeth, etc) replaced as part of a normal maintenance service as opposed to manufacturing defects.
2. Damage resulting from abuse, negligence, accidents, alterations, air flow obstructions, or failure to maintain or use the machine according to the instructions given.
3. Downtime expenses, loss of machine use, rental of another machine or related equipment while repairs are in progress, or other incidental, consequential, or special damages.
4. Communication expenses such as Telephone and Facsimile.
5. Travel time for servicemen.
6. Transportation and Insurance charges for transportation of the failed Dingo/Attachment.
7. Any labour, parts, mechanical adjustments or lubricant expenses which Dingo Mini Diggers Pty Ltd or an authorised Dingo Mini Digger dealer considers should be made as a standard maintenance procedure according to the Dingo maintenance guide-lines listed in this manual.
8. Any defect caused by work carried out without the authorisation of Dingo Mini Diggers Pty Ltd or an authorised Dingo Mini Digger Dealer.
9. Damage caused by continued use of the machine after it is known to be defective.
10. Damage caused by overloading or by racing and similar activities.

This warranty is in lieu of all other warranties, expressed or implied, and there are no warranties of merchantability or fitness for a particular purpose.

The benefits conferred by this warranty are in addition to all other rights and remedies in respect of the product which the consumer has under the Trade Practices Act (Commonwealth) and the Fair Trading Act of Queensland.

Machines of this type can be dangerous if used carelessly or improperly. The manufacturer, distributor or selling agent does not accept responsibility for accident either to the operator, to the owner or to any person directly or indirectly or to property if such an accident is caused by circumstances arising otherwise than by the negligence or default of Dingo Mini Diggers Pty Ltd.

PARTS INSTALLED DURING MACHINE WARRANTY

Components installed during a machines warranty period shall have warranty coverage for the duration of the machine warranty period or ninety (90) days, which ever is greater, provided the warranty installation is performed by Dingo Mini Diggers Pty Ltd or an authorised Dingo Mini Digger dealer.

N.B. Dingo Mini Diggers Pty Ltd reserve the right to change at any time the Dingo Mini Digger product specifications, configurations, and company policies, this is due to our constant commitment to make the best product for the job.



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