John Berends Implements Pty Ltd

AGRICULTURAL ENGINEERS

OPERATOR'S MANUAL
PARTS LIST

Post Hole Diggers

PRODUCT NO.

0259	Standard Post Hole Digger less Auger
0261	Heavy Duty Post Hole Digger less Auger
0262	Hydraulic Down Pressure Post Hole Digger less Auger
0260	Planetary Drive PHD with Hydraulic Down Pressure
0265	6" Auger (Heavy Duty and Hydraulic)
0267	8" Auger (Heavy Duty and Hydraulic)
0269	10" Auger (Heavy Duty and Hydraulic)
0271	12" Auger (Heavy Duty and Hydraulic)
0273	15" Auger (Fits Heavy Duty and Hydraulic)
0275	18" Auger (Fits Heavy Duty and Hydraulic)
0277	24" Auger (Fits Heavy Duty and Hydraulic)

130 FRANKSTON-DANDENONG RD, DANDENONG SOUTH, VIC. 3175 AUSTRALIA
PHONE (03) 97912494 FAX NO. (03) 9794 5568
www.johnberendsimplements.com.au

TABLE OF CONTENTS

Page No.

SAFETY

Farm machinery is dangerous if operated incorrectly so please read this manual in its entirety prior to operating the machine.

No operator, however experienced in farm machinery operation, should attempt to use any machine they have not been competently trained to use. Your local Department of Agriculture can help you with training, as can most Occupational Health and Safety offices, Agricultural schools and colleges and farm equipment dealerships.

All instructions relating to tractor safety as per the tractor operators manual should be followed. When making any machine adjustments, stop the tractor engine first and wait for all moving parts to stop. Maintain the tractor to ensure it remains safe to use. Do not operate faulty or damaged equipment.

Extreme caution should be taken when fitting equipment to the tractor's three point linkage. Avoid standing between the implement and the tractor when coupling machinery.

All machines should be mounted and retained correctly. All guards must be kept in place and correctly maintained. P.T.O. shafts must be correctly attached and secured to both the tractor and the machine. Decals must be visible and legible at all times. Keep well clear of all moving parts.

Keep all people and animals at a safe distance from all moving parts. Children must not be allowed to operate this equipment and all passengers must have the same level of protection as the operator.

Wear protective clothing where appropriate.

Never operate when tired (not alert) or in poorly lit areas and stay alert for humps and other hidden hazards. Remove all timber, rocks and foreign objects prior to operation.

Avoid operating the machine in wet conditions.

Exercise extreme caution when changing direction on hills. Avoid sudden movement, sudden breaking, high speeds, rough terrain and steep slopes.

If machine starts to vibrate, stop tractor, turn off engine and investigate.

 After striking a foreign object or if there are doubts about the performance of the machine, stop the tractor as described and check if machine is making excessive noise.

 Extreme caution must be taken when working in public areas (roadsides etc). It is recommended that flaps and chains are fitted to slashers when operating in public areas. These are available as optional extras. Rear flaps are compulsory in public areas.

 Watch overhead clearance and beware of underground pipes and cables.

 Where fitted, hydraulic hoses and fittings must be maintained so as to prevent damage.

 Do not modify this equipment in anyway, or use it for any other purpose than it was designed to do.

 Never work under unsupported machines or adjust unsupported machines. Do not enter the danger zone where a load being carried by a machine could fall on you, for example a round bale from a bale fork, a log from a carryall or material from a rear end loader.

These instructions should be used in conjunction with any local regulations regarding safety ie OHS.

Maintenance is essential for safe operation. Ensure maintenance is carried out regularly by people qualified to do so. This is of particular importance on P.T.O. drive machines where driven parts can fly off at high speed if wearing parts are not properly maintained.

FAILURE TO FOLLOW THESE INSTRUCTIONS AND PROCEDURES MAY RESULT IN EQUIPMENT MALFUNCTION, OR DAMAGE, SERIOUS INJURY OR EVEN DEATH.

INTRODUCTION:

This manual was developed specifically for the machine you have purchased. The information within is to assist you in preparing, operating and maintaining your machine. Please read and understand the contents of the manual completely before attempting to operate your machine, paying special attention to all safety details. With our policy of continuous improvement, products and specifications may change without notice and without incurring the obligation to install such changes on any unit previously delivered.

Post Hole Diggers

There are four models of post hole digger in the Berends range. The compact and standard post hole diggers are suitable for augers up to 12" whilst the heavy duty and the hydraulic post hole digger are both suitable for augers up to 24". All models are fitted with jib hooks on the main boom which can be used for lifting posts etc. A chain is fitted to the boom to hold the auger up for transport and for when the boom is used for lifting. Our augers are all clockwise (right hand) rotation and are available in 6", 8", 10", 12", 15", 18" and 24". All are fitted with "Pengo" toothed heads which have separate replaceable teeth. There are a variety of teeth and pilots available depending on your ground condition.

MACHINE SPECIFICATIONS

Model	Compact	Standard	Heavy Duty	Hydraulic
PTO	B3			
Clutch	L 2 Torque Limiting	L 2 Torque Limiting	L 3 Torque Limiting	L 3 Torque Limiting
Auger Length	1200mm			
Flight Thickness	5mm			
Number of Flights	4			
Main Frame (mm)	100 x 50 x 6mm	89 x 89 x 5.0 RHS	89 x 89 x 5.0 RHS	100 x 100 x 6.0 RHS
Tractor CAT connection	3 Point Linkage / Cat 1 & 2			
Auger Control Handle	No	No	Yes	No
Tractor H.P.	16 – 30 H.P	20 - 50 H.P.	30 - 100 H.P.	30 - 100 H.P.
Gearbox/PTO speed	40 H.P.	40 H.P.	85 H.P.	85 H.P.
Weight less Auger (kg)	85	95	130	150

NB : Gearbox H.P. rating is not critical as the phd is run at low speed, lowering horsepower (though at high torque) and the actual power required by the auger can be as low as 5-10 H.P.

WARRANTY

John Berends Implements P/L warrants each new product sold to be free from defects in material and workmanship, under normal use and service, as outlined in the operators manual, for a period of 12 months.

This warranty is void if any damage to the machine has been caused by misuse or non genuine parts have been used or any repairs have been made by any persons other than authorised dealer service personnel.

The manufacturer/dealer is not obligated to any transportation charges incurred in the repair or replacement of parts.

This warranty does not exclude any condition or warranty implied by the Trade Practices Act 1974 or any other legislation which implies any condition which cannot be excluded.

© Copyright 2007 This Safety Manual is copyright and no part may be reproduced without the written permission of John Berends Implements.

Safety Features

1. SERIAL NUMBER (Decal)

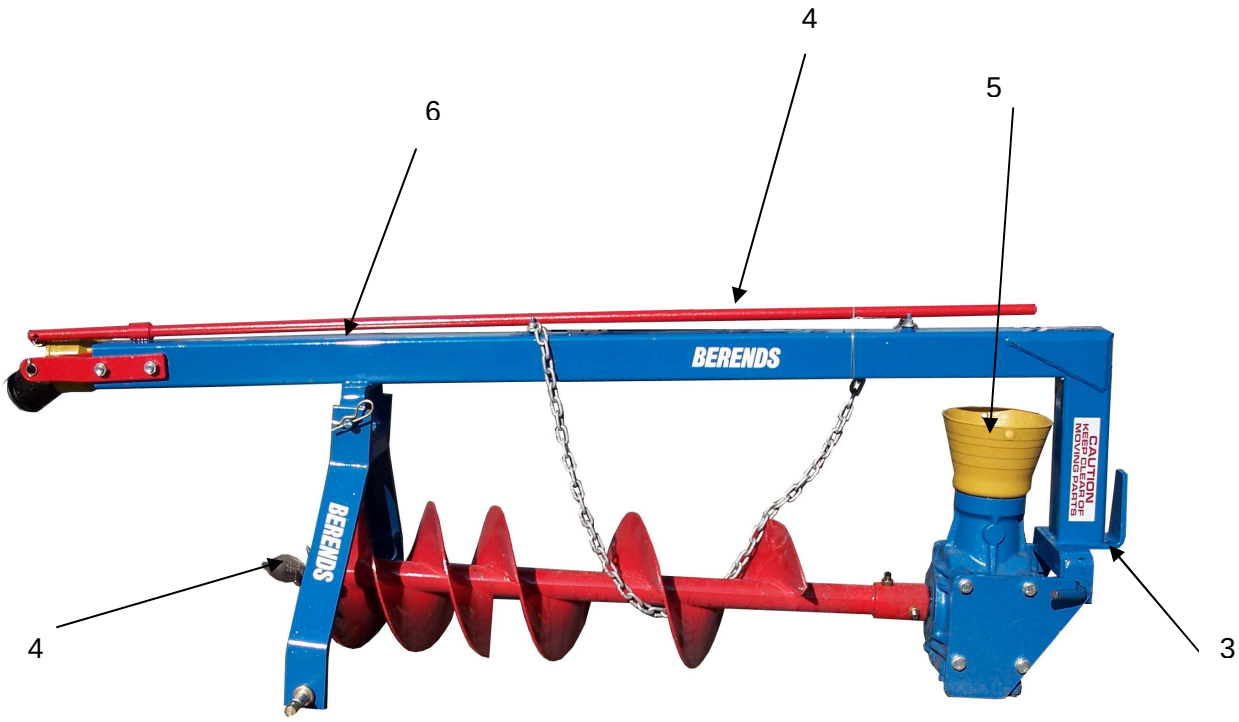
2. WARNING DECAL

3. CAUTION DECAL FOR P.T.O. SHAFT

4. BERENDS DECAL

5. GEARBOX CONE

6. P.T.O. SHAFT INNER/OUTER GUARDS



ASSEMBLY

Compact/Standard/Heavy Duty Models

Connect the 'A' frame to the two lower link arms of the tractor and secure with linch pins. Ensure the lower link arms of the tractor have an anti-sway device fitted such as chains or stays. This prevents the implement from swinging side to side during operation. Failure to do so may result in damage not covered by warranty.
Connect the main boom to the top link connection on the tractor.
Make sure all pins are secured with linch pins (not provided)

CAUTION: PTO Connection
Check the length of the P.T.O. shaft before connecting to the tractor. Separate the two halves of the shaft and attach each half onto the tractor output and posthole digger gearbox respectively. (It is easiest to do this if the auger is not attached to the gearbox). The torque limiting clutch goes on the tractor end. Holding both sections next to each other, raise the main boom to its maximum lifting height and mark the overlap of the two half shafts. Repeat the process when lowering the main boom as far as it goes. If there is too much length when the shaft is fully closed it may need to be shortened by cutting the same amount off both metal tubes and both plastic covers. It is important that there is a minimum of 150mm overlap at all times.

Lift the main boom into the air and connect the auger with the two 4" x ½" bolts provided. Grease the output shaft of the gearbox before fitting the auger.

Hydraulic Down Pressure Models (inc. Planetary drive model)

Park your tractor on a flat surface, preferably concrete. Remove the top link from your tractor and lower the bottom arms. Remove the hydraulic ram from the Post Hole Digger if still attached. Attach the main boom of the Post Hole Digger to the rear of your tractor. Connect the bottom linkage arms to the pins on the Post Hole Digger "A" frame. Lift the 3 Point Linkage so that the point of the auger clears the ground by 100-150m (4"-6") - leave linkage in this position.

Connect the hydraulic ram, (the end which does not extend) to lug "**A**" fitted to the "A" frame. Remove plastic caps from the holes in the ram and compress the ram as far as possible by hand. Connect the extending end of the ram to adjustable lug "**B**"**.** This lug is clamped on the boom using the 4 3/4" x 6" bolts provided. **To avoid slippage** a stud is welded to the clamp. Fit the clamp to the hydraulic ram and to the boom using the nearest hole for stud location. Extend the ram a little if necessary; six holes are provided for the location of the clamp, and one is used depending on the make and model of tractor. Attach the hydraulic hoses to the ram and fit couplings to the other end of the hoses.

Now lower your linkage, using the lever provided on your tractor, as far as possible. The end of the auger will rest on the ground and prevent the arms from lowering.
Connect the hoses to your remote hydraulics. At all times after this, **leave the linkage lever in the lowest position and do not handle at any time.** Now connect the P.T.O. shaft to your Post Hole Digger and tractor, taking care that the torque limiter (clutch) is connected to the tractor. Refer to the instructions above on pto set-up. Check that all locating pins are properly secured. To avoid difficulties later it is advisable to apply some grease to the input shaft prior to fitting the P.T.O. shaft.

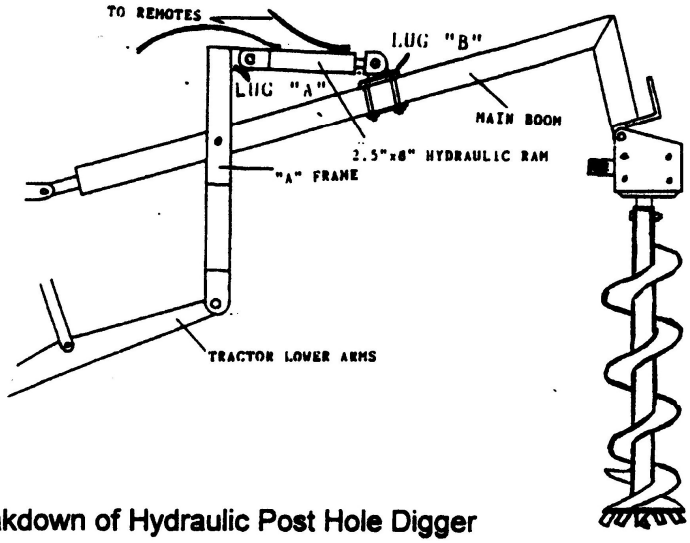


Figure 1. : Breakdown of Hydraulic Post Hole Digger

OPERATION

Once all safety procedure have been followed, start the tractor and raise the post hole digger off the ground. (In the case of the Hydraulic Post Hole Digger – use the ram only to do this) When using the Post Hole Digger, remain seated on the tractor and make sure there are no people or animals in the vicinity at all times. Beware of underground cables and pipes when digging.
No adjustments should be made to any part of the Post Hole Digger, the auger or the P.T.O. shaft unless:
1/ The P.T.O. is disengaged,
2/ The handbrake is on,
3/ The engine has stopped.

Digging holes with the Compact/Standard/Heavy Duty models

1) Position the digger where the hole is to be dug, ensuring the auger is vertical to the ground.
2) Engage the P.T.O. while idling and open the throttle half way (approximately 350 P.T.O. RPM)
3) Lower the linkage until the auger touches the ground. Adjust the auger angle so that it is perpendicular by very slowly/creeping forward with the tractor.

Digging holes with the hydraulic phd

To use a hydraulic post hole digger successfully, some experience with remote hydraulics is necessary.
1) Position the digger where the hole is to be dug, ensuring the auger is vertical to the ground.
2) Engage the P.T.O. while idling and open the throttle half way (approximately 350 P.T.O. RPM)
3) Lower the digger slowly, using the hydraulics, until it starts to dig. Continue to feed your hydraulics down slowly - excessive down pressure can do damage as it transfers all of the tractor weight onto the auger. Depending on the soil, it may be necessary to clear the hole from time to time by lifting the digger (remember use the remotes only) from the hole. When the desired depth has been reached, simply lift the digger using your ram and move on to the next hole. It takes less than one minute to dig a 1200mm deep hole (diameter 300mm) in moderate conditions.

CAUTION:
Digging while the P.T.O. speed is too low may result in corkscrewing the auger into the ground.

Transporting

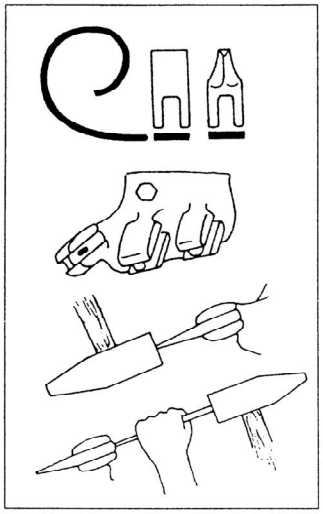
When transporting the post hole digger, use the transport chain to secure the auger to the main boom. When the digger is in the transport position, it is able to be used as jib capable of lifting fence posts etc. A load capacity of not more than 200kg is recommended for the lifting jib.
It is recommended that the pto is disconnected at the tractor end. Secure the shaft to the main boom in a parallel position using the chain provided. Ensure the yoke of the driveshaft is at 90° angle to the driveshaft at the gearbox end.

MAINTENANCE

When doing any type of maintenance on this machine, always follow the safety steps described in this manual. Service should only be carried out by qualified personnel. Use only authorised genuine parts for replacement

Auger

Ensure the bolt on pilot and all teeth are intact and not overly worn. Teeth can be turned over for longer life.



Installation instructions:

1. Cut Ribd Rubr-Lok® as long as the tooth is wide at the tangs.

2. Insert evenly in holder.

Note: water may be used as a lubricant to install Ribd Rubr-Lok® but NEVER use grease or oil.

3. Drive tooth fully in until seated in holder, using Pengo's SH-85 soft steel hammer. Compression of Ribd Rubr-Lok® holds tooth firmly in pocket.

For tungsten carbide teeth cushion carbides with softwood board before driving fully in.

4. Remove worn teeth with drift punch. Replace Ribd Rubr-Lok® only if damaged.

CAUTION: Always wear eye protection when installing and removing teeth.

Gearbox

Pto Driven units - It is recommended the first oil change occur after 50 working hours; subsequent changes should take place after 500-800 working hours. Periodically check the oil level and top up if necessary. Use HD140 gearbox oil and regularly check for leaks.
Planetary units – It is recommended the first oil change occur after 500 working hours or 6 months. Drain the unit and replace with 350ml of Castrol SP320 or equivalent. Replace the oil every 2000 hours or 12 months – which ever occurs first.

Power take off (p.t.o.) shaft

Before operating the machine, check that the P.T.O. shaft is securely attached to the tractor and to the post hole digger.
Check that the tube guards are not damaged and rotate freely on the P.T.O. shaft. Safety chains must be sufficiently loose to allow free turning of the tube guards.
When machine is not in use, protect or cover the P.T.O. shaft from the weather.
Check all components are fully lubricated before use. Frequently grease all points as shown in Figure 2.

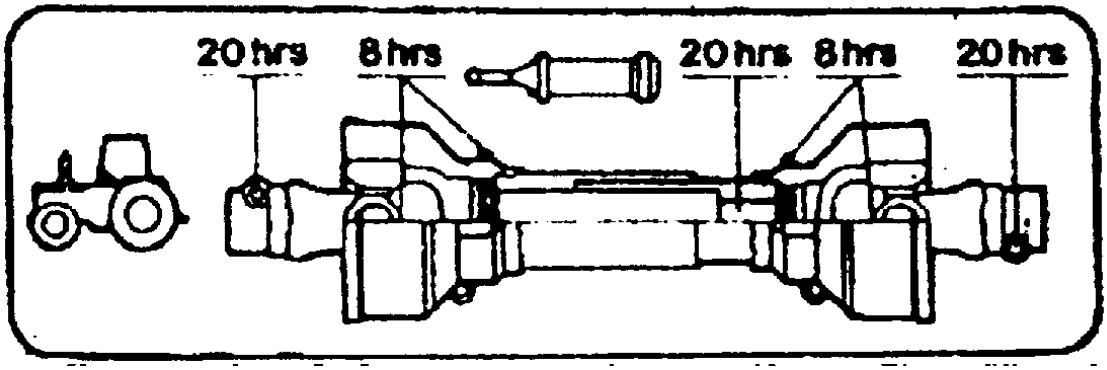


FIGURE 2. : Grease points and intervals for P.T.O. shaft.

Please note the hydraulic post hole digger can be used as a conventional post hole digger by simply removing the hydraulic ram.

SPARE PARTS

ORDER SPARE PARTS THROUGH YOUR ORIGINAL SUPPLIER OR YOUR LOCAL JOHN BERENDS IMPLEMENTS DEALER.

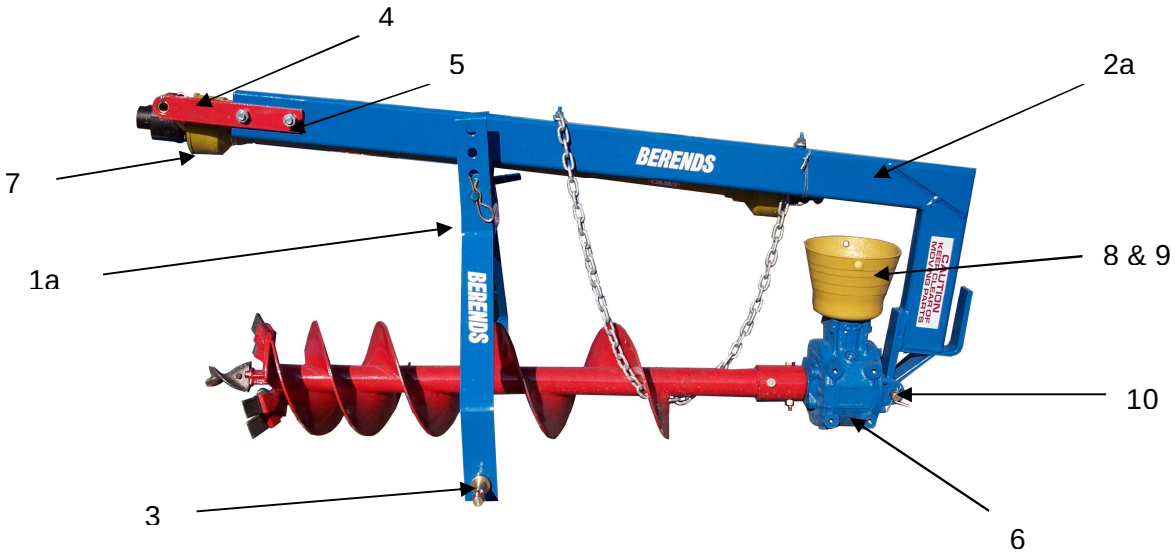
Always quote the machine serial No. or product No., spare part number and its part name as stated in the operator's manual.

Glossary of terms

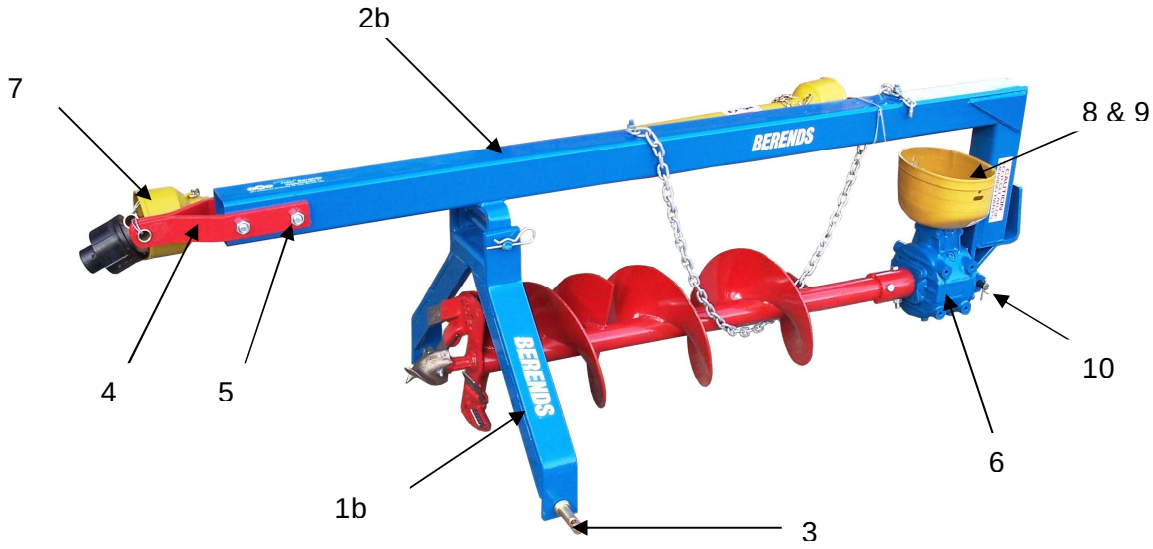
c/w = Complete with
sw = Spring Washer
n.s.s. = Not serviced separately
a.r. = As required
fw = Flat Washer

Post hole diggers – compact (0258) and standard (0259) models

Key No.	Part No.	Quantity	Description
1a	3820	1	A frame suit compact phd c/w pins
1b	3329	1	A frame suit std/hd phd c/w pins
2a	3822	1	Compact boom
2b	3821	1	Standard boom
3	1967	2	Cat 1 bolt on linkage pin
4	1754	2	Top linkage mounting clevis bracket
5	3823	4	Bolt/nut/sw suit clevis bracket
6	1738	1	Gearbox (for breakdown re: gearbox section)
7	3119	1	PTO shaft (for breakdown re: pto section)
8	3200	4	Bolt and washer assembly suit cover
9	3199	1	Safety cover
10	1740	1	Gearbox mounting pin (inc. split pins)



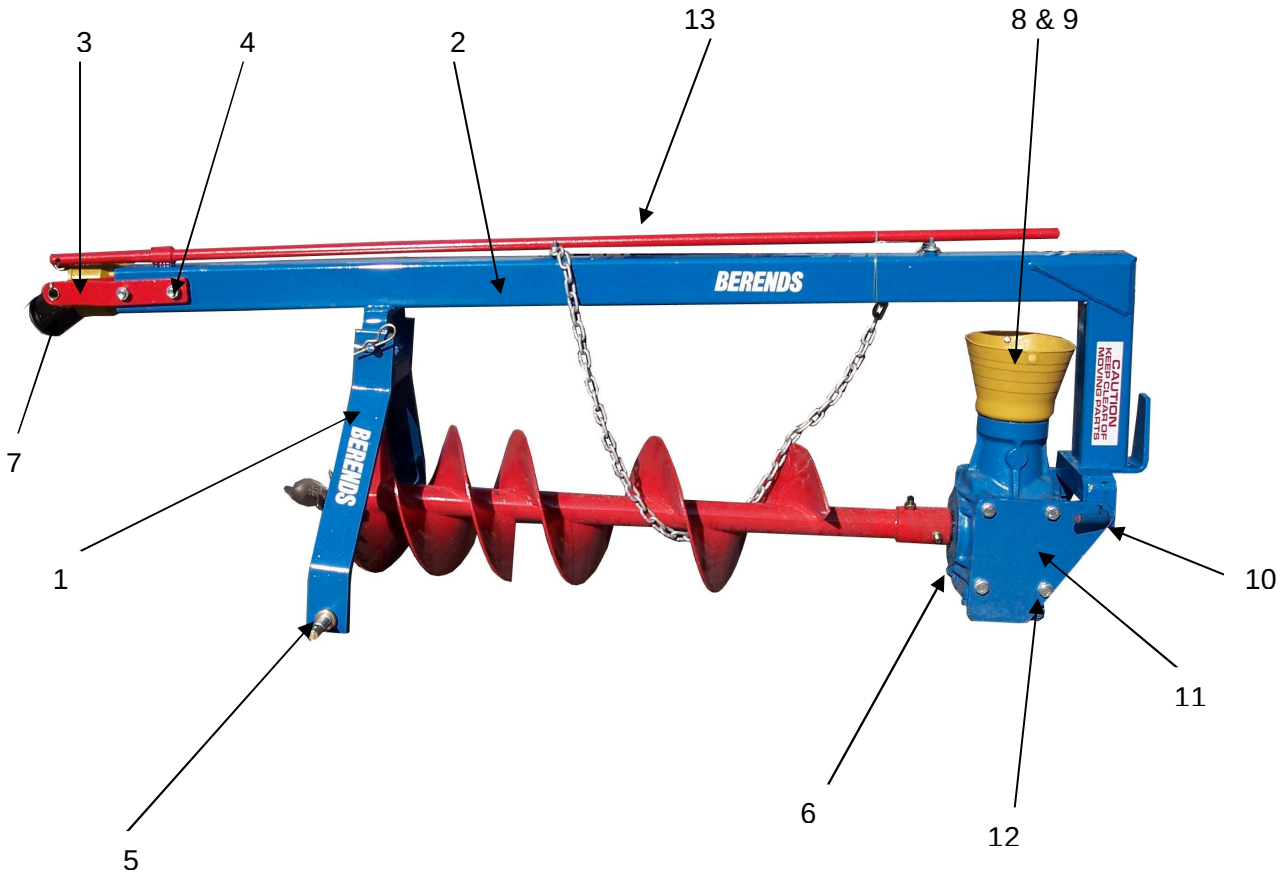
Compact post hole digger



Standard post hole digger

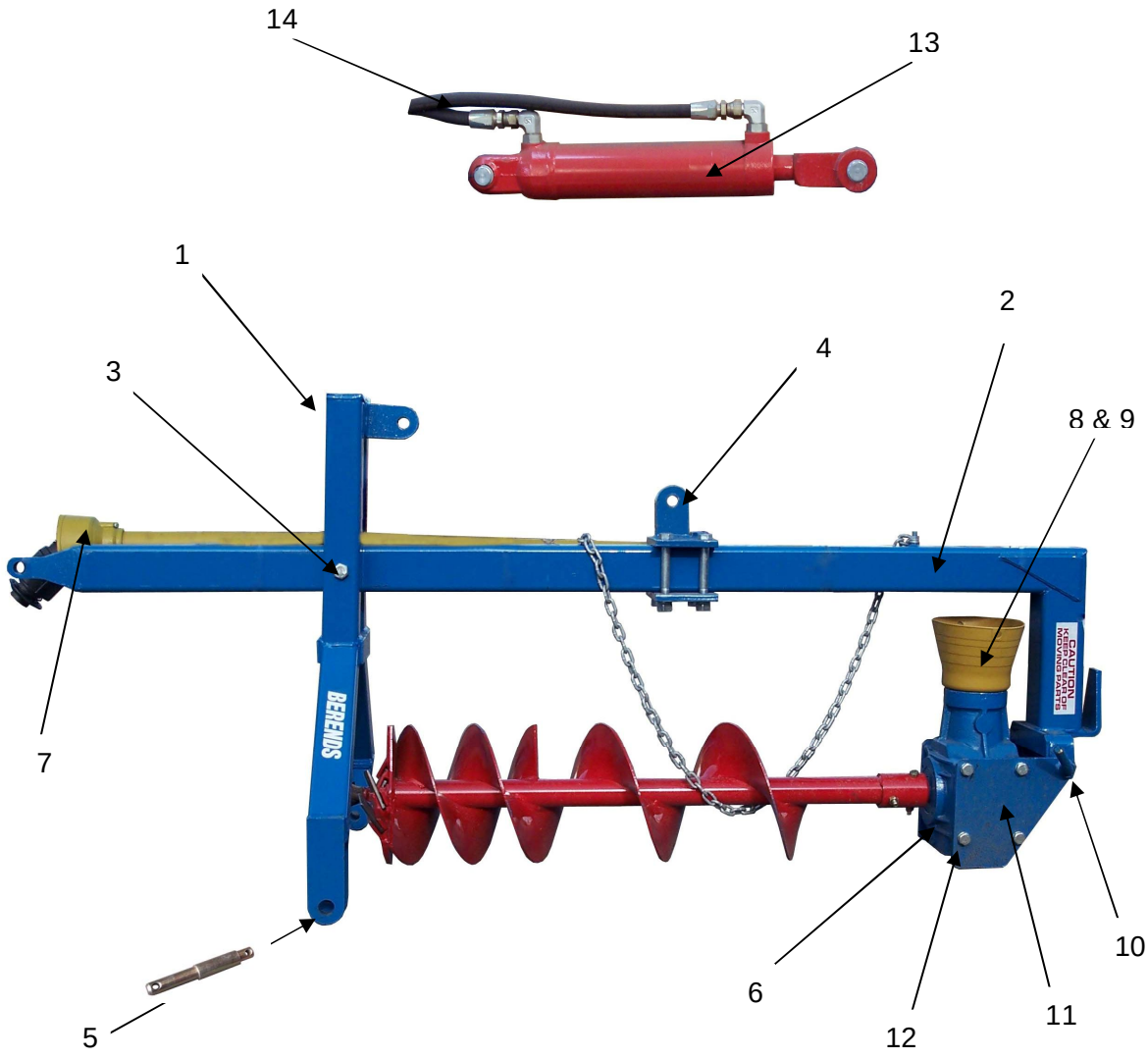
Post hole diggers – heavy duty models (0261)

Key No.	Part No.	Quantity	Description
1	3329	1	A frame suit std/hd phd c/w pins
2	3824	1	Heavy duty boom
3	1754	2	Top linkage mounting clevis bracket
4	3823	4	Bolt/nut/sw suit clevis bracket
5	1967	2	Cat 1 bolt on linkage pin
6	1885	1	Gearbox (for breakdown re: gearbox section)
7	3119	1	PTO shaft (for breakdown re: pto section)
8	3199	1	Safety cover
9	3200	4	Bolt and washer assembly suit cover
10	3825	1	Gearbox mounting pin (in. R-clip)
11	3826	pair	Gearbox mounting plates
12	3827	8	Gearbox mounting plate bolt/nut/sw
13	3828	1	Levelling rod (inc. linch pin)



Post hole diggers – Hydraulic models (0262)

Key No.	Part No.	Quantity	Description
1	1739	1	A frame suit hydraulic phd
2	3692	1	Hydraulic phd boom only (inc. ram mounting plate)
3	3829	1	A frame main pivot bolt/nut
4	3830	1	Ram mounting plates (inc. 4 bolts/nuts/sw)
5	1971	2	Cat 1/2 stepped push through pin.
6	1885	1	Gearbox (for breakdown re: gearbox section)
7	3119	1	PTO shaft (for breakdown re: pto section)
8	3199	1	Safety cover
9	3200	4	Bolt and washer assembly suit cover
10	3825	1	Gearbox mounting pin (in. R-clip)
11	3831	pair	Gearbox mounting plates
12	3827	8	Gearbox mounting plate bolt/nut/sw
13	3693	1	Hydraulic ram inc. pins (for down pressure)
14	3694	1 set	Hoses and fitting suit hydraulic phd



Post hole digger cutting head conversion kits.
Kits are also available in left hand (anti-clockwise) configurations shown in ***italics***.

Part No.	*Part No.*	Quantity	Description
1701	*1693*	1	6” single cut
1702	*1694*	1	8” single cut
1703	*1695*	1	10” double cut
1704	*1696*	1	12” double cut
1705	*1697*	1	15” double cut
1706	*1698*	1	18” double cut
1707	*1699*	1	24” double cut

Old cutting edges (fan or segment shaped)

Part Number	Quantity	Description
1724	ar	6” cutting edge c/w bolts
1726	ar	8” cutting edge c/w bolts
1728	ar	10” cutting edge c/w bolts
1729	ar	12” cutting edge c/w bolts
1730	ar	15” cutting edge c/w bolts
1732	ar	18” cutting edge c/w bolts
1734	ar	24” cutting edge c/w bolts

Auger components (All teeth are supplied with rubber lock)

Part Number	Quantity	Description
1781	ar	Earth tooth
1782	ar	Tungsten tipped tooth
1692	ar	Tungsten hard-faced tooth
1783	ar	Serrated tungsten tipped tooth
1780	ar	Chisel tooth (used as standard on 8” augers)
1789	ar	Tungsten tipped chisel tooth
1796	ar	Carbide insert tooth
1785	ar	R/H earth pilot c/w bolt/nut
1786	ar	R/H tungsten pilot c/w bolt/nut
1791	ar	L/H earth pilot
1792	ar	L/H tungsten pilot
1790	ar	Weld on drive lug suit RH Pilot
1798	ar	Weld on drive lug suit LH Pilot
1795	ar	Weld on single tooth pocket suit augers pre 2000
3845	ar	Weld on single tooth pocket suit 6” augers
3846	ar	Weld on double tooth pocket suit 8” augers
3847	ar	Weld on double tooth pocket suit 10” and 12” RH augers
3848	ar	Auger shearbolt/nut

1781

1782

1692

1783

1780

1789

1796

1785/1791

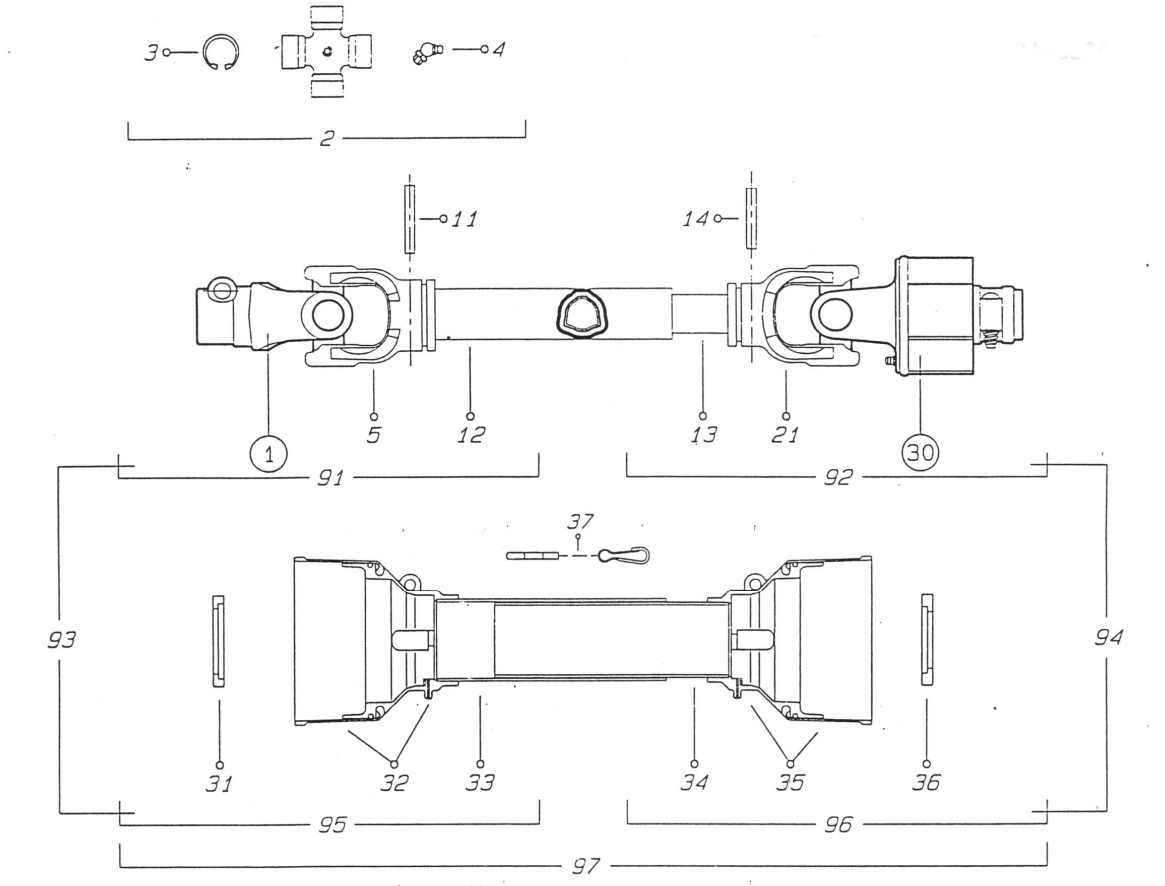
1790/1798

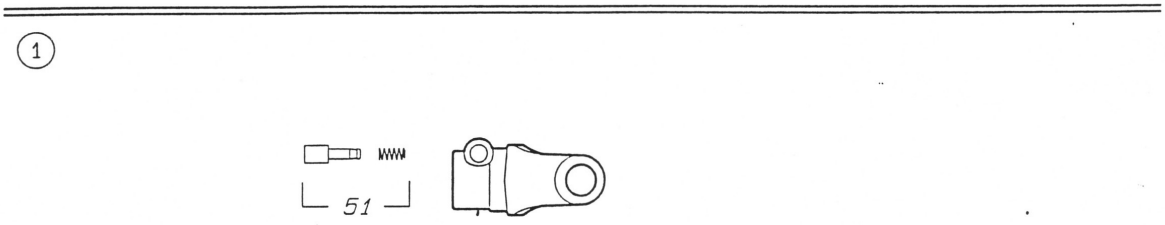
3845-3847

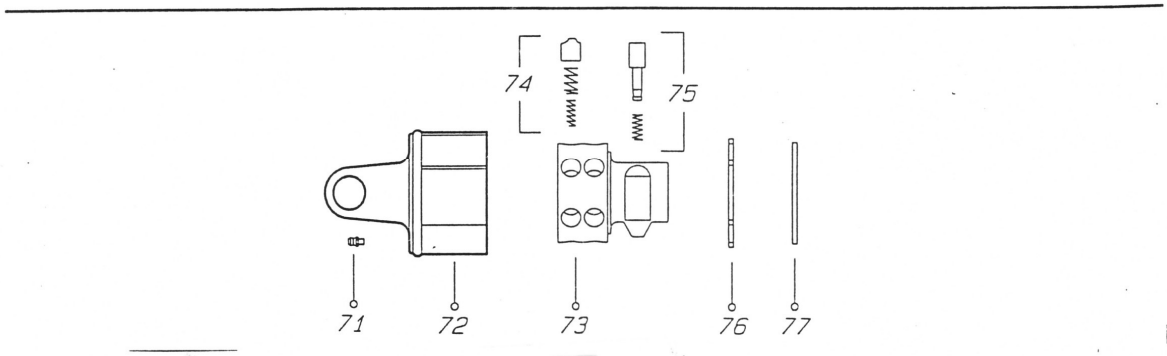
Compact/Standard post hole digger

Key no.	Part no.	Quantity	Description
1	3001	1	Yoke
2	3002	2	Cross/universal joint
3		8	Circlip – n.s.s.
4		2	Grease nipple - n.s.s.
5	3003	1	Outer tube yoke
11	3095	1	Roll pin
12	3004	1	Outer drive tube
13	3005	1	Inner drive tube
14	3103	1	Roll pin
21	3006	1	Inner tube yoke
30	3009	1	Clutch
31	3019	1	Bearing ring set of 2
32		1	Cone - n.s.s.
33		1	Outer cover tube - n.s.s.
34		1	Inner cover tube - n.s.s.
35		1	Cone - n.s.s.
36	3019	1	Refer p/n # 31
37	3021	1	Chain
51	3007	1	Quick release pin
71		1	Grease nipple - n.s.s.
72	3015	1	Housing
73	3013	1	Hub
74	3014	12	Ratchet tooth
75	3012	1	Quick release pin
76	3011	1	Retaining washer
77	3010	1	Circlip
91		1	Half shaft less cover - n.s.s.
92		1	Half shaft c/w clutch less cover - n.s.s.
93	3114	1	Half shaft less clutch c/w cover
94	3115	1	Half shaft c/w clutch & cover
95	3018	1	Outer half shaft cover
96	3017	1	Inner half shaft cover
	3008	1	Complete cover assy
97	3119	1	Complete shaft c/w clutch

Compact/Standard post hole digger

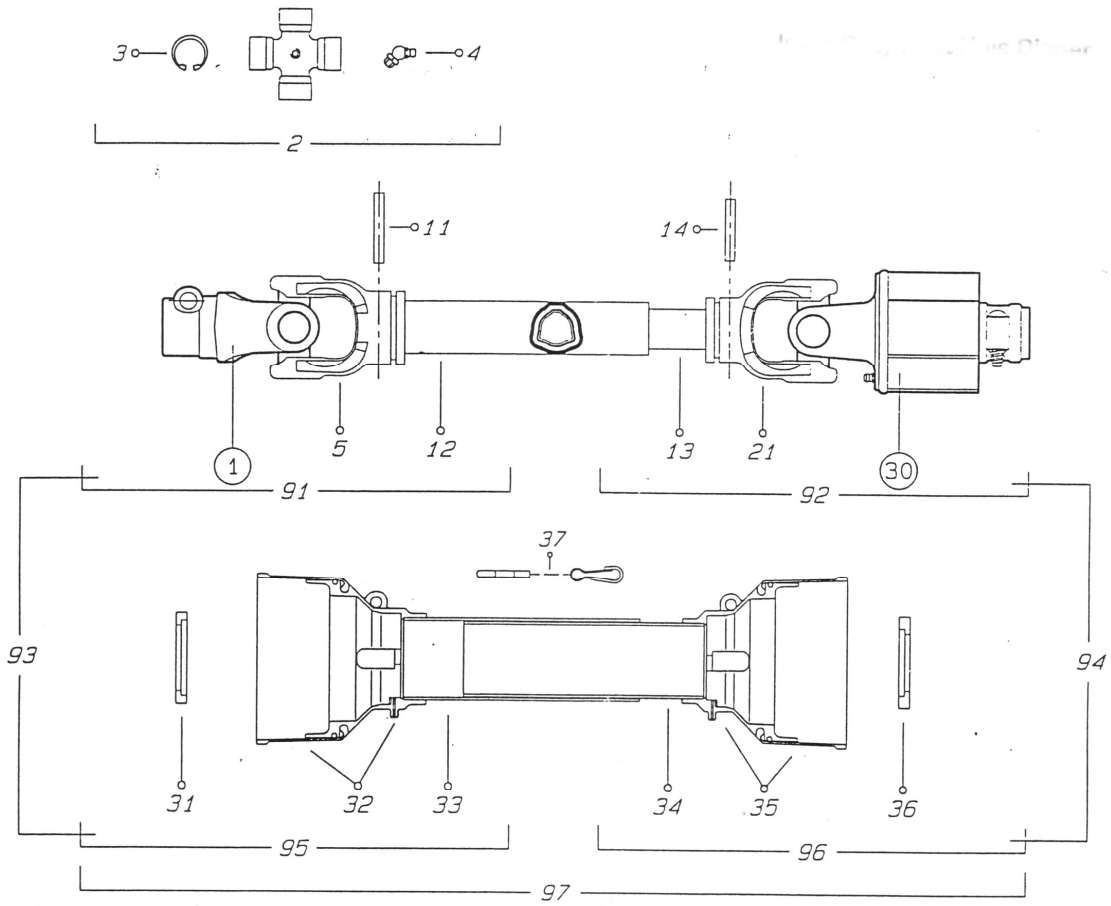




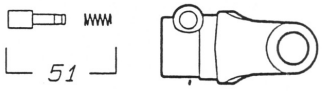


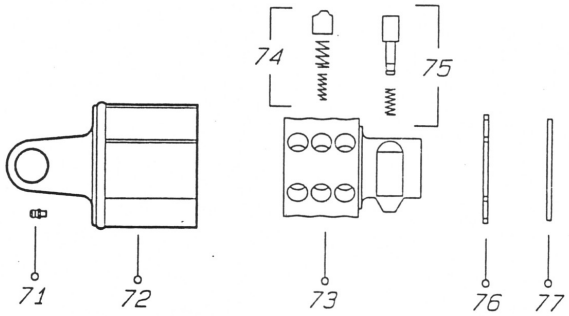
Heavy Duty/Hydraulic Post Hole Digger

Key no.	Part no.	Quantity	Description
1	3001	1	Yoke
2	3002	2	Cross/universal joint
3		8	Circlip - n.s.s.
4		2	Grease nipple - n.s.s.
5	3003	1	Outer tube yoke
11	3095	1	Roll pin
12	3004	1	Outer drive tube
13	3005	1	Inner drive tube
14	3103	1	Roll pin
21	3006	1	Inner tube yoke
30	3459	1	Clutch
31	3019	1	Bearing ring set of 2
32		1	Cone - n.s.s.
33		1	Outer cover tube - n.s.s.
34		1	Inner cover tube - n.s.s.
35		1	Cone - n.s.s.
36	3019	1	Refer p/n # 31
37	3021	1	Chain
51	3007	1	Quick release pin
71		1	Grease nipple - n.s.s.
72	3460	1	Housing
73	3032	1	Hub
74	3033	18	Ratchet tooth
75	3012	1	Quick release pin
76	3011	1	Retaining washer
77	3010	1	Circlip
91		1	Half shaft less cover - n.s.s.
92		1	Half shaft c/w clutch less cover - n.s.s.
93	3114	1	Half shaft less clutch c/w cover
94	3115	1	Half shaft c/w clutch & cover
95	3018	1	Outer half shaft cover
96	3017	1	Inner half shaft cover
97	3461	1	Complete shaft c/w clutch


3
4
2
11
14
5
12
13
21
1
30
91
92
37
93
94
31
32
33
34
35
36
95
96
97

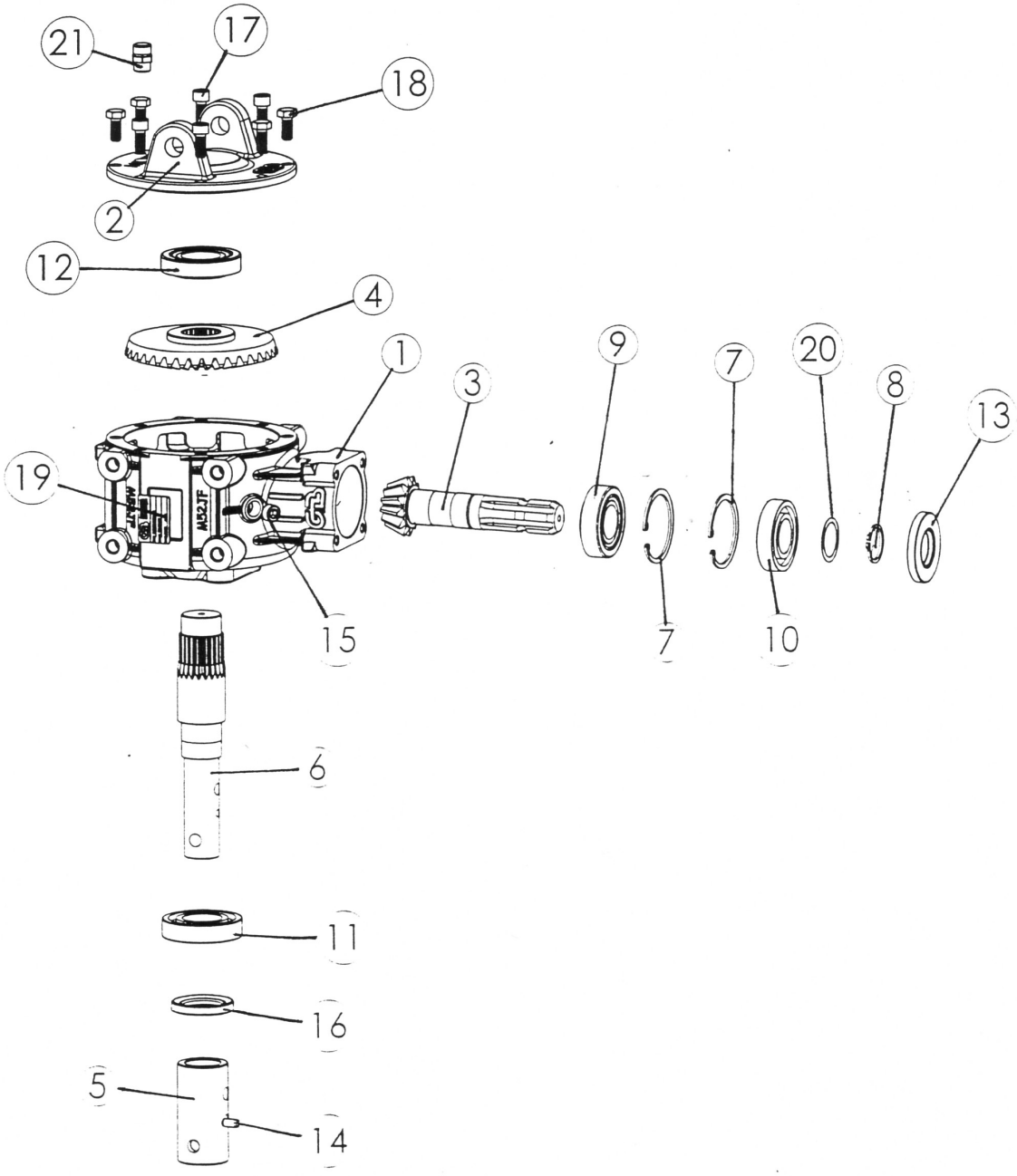
1


51


74
75
71
72
73
76
77

R52 Compact/Standard post hole digger – post 2002

Key No.	Part No.	Quantity	Description
1	3579	1	Casing
2	3580	1	Cover
3	3581	1	Input shaft
4	3582	1	Output gear
5	3583	1	Output bush
6	3584	1	Output shaft
7	3585	2	Input circlip
8	3586	1	Input circlip
9	3587	1	Input bearing (back)
10	3588	1	Input bearing (front)
11	3589	1	Output bearing (bottom)
12	3590	1	Output bearing (top)
13	3591	1	Input seal
14	3592	1	Roll pin
15	3593	3	Drain/level plug
16	3594	1	Output seal
17	3595	4	Cap bolts
18	3596	4	Bolts
19	3597	1	R52 label plate
20	3598	1	Shim
21	3599	1	Breather plug 3/8” gas


21
17
18
2
12
4
1
3
9
7
20
8
13
19
15
7
10
6
11
16
5
14

R115 Heavy duty / Hydraulic post hole digger gearbox – post 2002

Key No.	Part No.	Quantity	Description
1	3638	1	Casing
2	3639	1	Input shaft
3	3640	1	Input bearing
4	3641	1	Input bearing
5	3642	2	Output bearing
6	3643	2	Output circlip
7	3644	1	Cover
8	3645	1	Output seal
9	3646	1	Cap
10	3647	1	Input shim
11	3648	2	Input shim
12	3649	1	Input circlip
13	3650	1	Input seal
14	3651	7	Drain/level plug
15	3652	1	Breather plug 3/8” gas
16	3653	8	Cover bolts
17	3654	1	R115 label plate
18	3655	1	Output gear
19	3656	1	Output shaft

R115 Heavy duty / Hydraulic post hole digger gearbox – post 2002