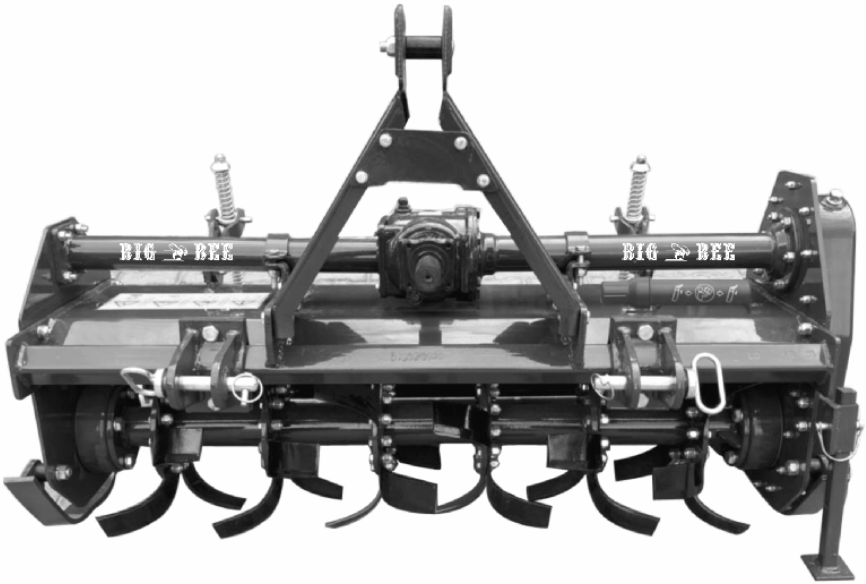
BIG BEE

Gear Drive 6 Tines Rotary Tiller



➤ Operator Manual ➤ Service Manual ➤ Part Catalogue

CONGRATULATIONS!

You have invested in one of the best implements of its type in the market today.

The care you give your “BIG BEE” implement will greatly determine your satisfaction with its performance and its service life. A careful study of this manual will give you a thorough understanding of your new implement before operating.

If your manual is lost or destroyed, “BIG BEE” will be glad to provide you a new copy. Visit to nearest dealership & get a copy. Most of our manuals can also be downloaded from our website at www.darrellharp.com.

As an authorized “BIG BEE” dealer, we stock genuine “BIG BEE” parts which are manufactured with the same precision and skill as our original equipment. Our trained service persons are well informed on methods required to service “BIG BEE” equipments and are ready to help you.

Should you require additional information or assistance, please contact us.

YOUR AUTHORIZED

BIG BEE DEALER

BECAUSE “BIG BEE” MAINTAINS AN ONGOING PROGRAMME OF PRODUCT IMPROVEMENT, WE RESERVE THE RIGHT TO MAKE IMPROVEMENTS IN DESIGN OR CHANGE IN SPECIFICATION WITHOUT INCURRING ANY OBLIGATION TO INSTALL THEM ON UNITS PREVIOUSLY SOLD. BECAUSE OF THE POSSIBILITY THAT SOME PHOTOGRAPHS IN THIS MANUAL WERE TAKEN OF PROTOTYPE MODELS, PRODUCTION MODELS MAY VARY IN SOME DETAIL. IN ADDITION, SOME PHOTOGRAPHS MAY SHOW SHIELDS REMOVED FOR THE PURPOSE OF CLARITY. NEVER OPERATE THIS IMPLEMENT WITHOUT ALL SHIELDS IN PLACE.

TO THE PURCHASER

This manual contains valuable information about your new “BIG BEE” Rotary Tiller. It has been carefully prepared to give you helpful suggestions for operating, adjusting, servicing and ordering spare parts.

Keep this manual in a convenient place for quick and easy reference. Study it carefully. You have purchased a dependable and sturdy Rotary Tiller but only by proper care and operation you can expect to receive the service and long life designed and built into it.

Sometime in the future your Rotary Tiller may need new parts to replace which are worn out or broken. If so, go to your dealer and provide him equipment’s detail like model and part number.

CUSTOMER INFORMATION

Name _____

Purchased From _____

Date of Purchase _____

Model No. _____

Serial No. _____

PURCHASER / OPERATOR’S RESPONSIBILITY

1. Read and understand the information contained in this manual.

2. Operate, lubricate, assemble and maintain the equipment in accordance with all instructions and safety procedures in this manual.

3. Inspect the equipment and replace or repair any parts that are damaged or worn out which under continued operation would cause damage, wear to other parts, or cause a safety hazard.

4. Return the equipment or parts to the authorized “BIG BEE” dealer, from where it was purchased, for service or replacement of defective parts that are covered by warranty. (The “BIG BEE” Factory may inspect equipment or parts before warranty claims are honored.)

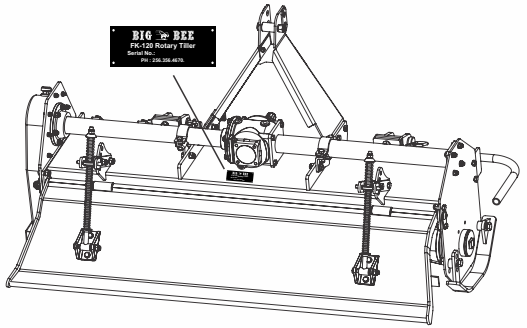
5. All costs incurred by the dealer for traveling to or transporting the equipment for warranty inspection and claims will be borne by the customer.

INDEX

1. INTRODUCTION

1.1. Tiller Identification

Each tiller has a plate for unique identification. Any request for assistance or information regarding the machine must be directed to the Manufacturer or Dealer always referring to the model and serial number as shown on the Serial Number Plate affixed to the machine.



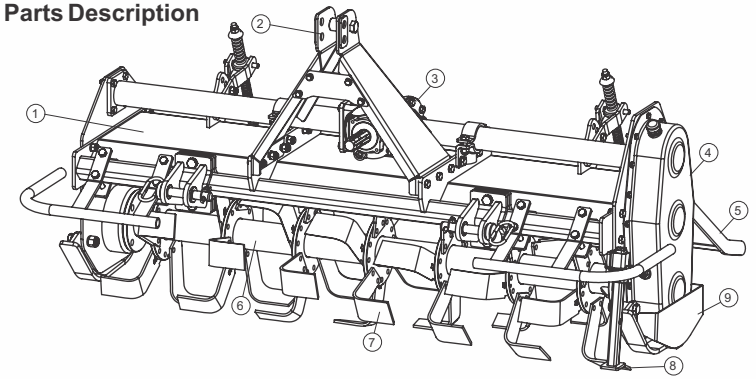
1.2. Intended Use

The Rotary Tiller are designed to be used uniquely for horticultural, agricultural applications, to till soil for seedbed and planting preparation. They are designed to be mounted on tractors equipped with hydraulic lift and universal three point hitch that can support the implement weight and driven by the power of the tractor through the PTO drive shaft.

DANGER

Any use of the machine other than the intended use is to be considered as unauthorized and dangerous. The manufacturer assumes no liability for damage resulting from non-intended use.

1.3 Main Parts Description



1.Frame Assembly 2. 3-Point Linkage 3. Gear Box 4. Side Gear Drive 5. Plank Board 6. Rotor Assembly 7. Blade 8. RT Parking Stand 9. Depth Skid

2. SAFETY

Careful operation is your best insurance against an accident. All operators, no matter how much experience they may have, should carefully read this manual and other related manuals before operating the power machine and this implement. It is the owner's obligation to instruct all operators in safe operation.

2.1. General Safety Instruction

- Do not operate the equipment while under the influence of drugs or alcohol as they impair the ability to safely and properly operate the equipment.
- The operator should be familiar with all functions of the tractor and attached implement, and be able to handle emergencies quickly.
- Make sure all guards and shields are in place and secured before operating implement.
- Keep all bystanders away from equipment and work area.
- Start tractor from the driver's seat with hydraulic controls in neutral.
- Operate tractor and controls from the driver's seat only.
- Never dismount from a moving tractor or leave tractor unattended with engine running.
- Do not allow anyone to stand between tractor and implement while backing up to implement.
- Keep hands, feet, and clothing away from power-driven parts.
- While transporting and operating equipment, watch out for objects overhead and along side such as fences, trees, buildings, wires, etc.
- Do not turn tractor so tight as to cause hitched implement to ride up on the tractor's rear wheel.
- Store implement in an area where children normally do not play.

2.2. Equipment Safety Guidelines

Failure to follow all safety instructions could result in serious injury or death

Safety of the operator and bystanders is one of the main concerns in designing and developing a tiller. However, every year accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions and insist those working with you, or for you, follow them.

- Read safety instructions for both the tractor and this tiller before use.
- Never exceed the advised limits of the tractor or the tiller.
- This equipment is dangerous to children and those unfamiliar with its operation
- Use the tiller for its intended purpose only. Improper use can damage the tiller and cause serious injury to persons, animals, or death.
- Any unauthorized modification of the machine may cause problems in safety and relieves the manufacturer from any liability for damages or injuries that may result to operators, third parties and objects.
- Before using the machine, familiarize yourself with its controls and its working capacity.
- Do not leave the tiller unattended with tractor engine running. Shut off the power whenever going near the machine for repairing or lubrication purpose.
- Do not use the machine if the category of the connecting pins of the tiller does not match that of the tractor hitch system.

2.3. Operating Safety Instructions

⚠ Failure to follow all safety instructions could result in serious injury or death

- Never engage the tractor PTO in the presence of people close to the PTO Shaft. The body, hair or clothing of a person can get caught in rotating parts, causing serious injury or death.
- Before engaging the PTO and during all operations, make sure that no person or animal is in immediate area of action of the machine. Never use the tiller if people are in his working area.
- Before using the machine, be sure to have cleared the operating area from obstacles
- Before making changes in direction, turns or going in reverse, slightly lift the tiller from the ground after disengaging the power take-off, to avoid damage to the machine.
- The operator must operate tiller lifting/lowering only from the driving seat of the tractor. Do not perform lifting manoeuvres on side or behind the tractor.
- Never leave the driver's seat when the tractor is turned on. Before leaving the tractor, lower the tiller to the ground, disengage the PTO, insert the parking brake, stop engine and remove the key from the control panel.
- Keep all Shields / Guards in place and in good condition to avoid risk of entanglement with serious injury or death. Replace all damaged/broken shields immediately.
- Prolonged use of the tiller can cause overheating of the gearbox. Do not touch the gearbox during use and immediately after, it could be extremely hot and cause severe burn.

2.4. Transporting Safety Instructions

⚠ Failure to follow all safety instructions could result in serious injury or death

- Comply with state and local laws.
- Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with tie downs and chains.
- Sudden braking can cause a towed trailer to swerve and upset. Reduce speed if towed trailer is not equipped with brakes.
- Avoid contact with any over head utility lines or electrically charged conductors.
- Always drive with load on end of loader arms low to the ground.
- Always drive straight up and down steep inclines with heavy end of a tractor with loader attachment on the “uphill” side.
- Engage park brake when stopped on an incline.
- When driving on roads, the implement must be in transport position adequately raised from the road surface, with tractor lifting hydraulics locked so that the tiller cannot be lowered accidentally.
- The implement may be wider than the tractor. Pay attention during transporting to persons, animals or obstacles exposed.
- Always use tractor lighting system and auxiliary lighting system for an adequate warning to operators of other vehicles, especially when transporting at night or in conditions of reduced visibility.

2.5. Maintenance Safety Instructions

- All maintenance and repairing operations must be performed by qualified and trained operators, with the tractor engine off, the PTO disengaged, the tiller lowered to the ground or on security stands, the ignition key off and the parking brake set.

- Perform repairs and replacements necessary to the machine using only Genuine BIG BEE Spare parts provided by the manufacturer or your dealer.
- Perform maintenance operations always using appropriate Personal Protective Equipment (protective eye glasses, hard hat, hearing protection, safety shoes, overall and work gloves, filter mask).
- Wear protective clothing and equipment appropriate for the job such as safety shoes, safety glasses, hard hat, and ear plugs.

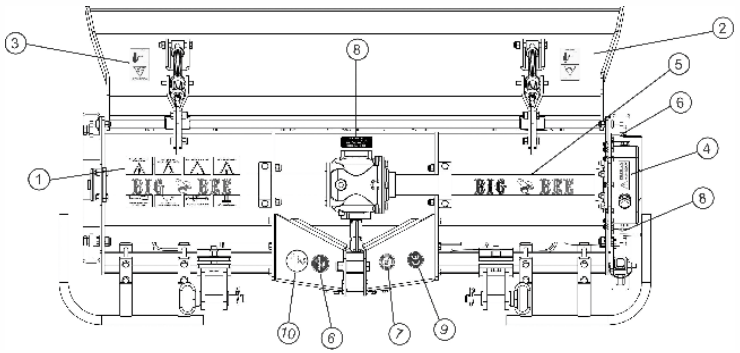
2.6. Storage Safety Instructions

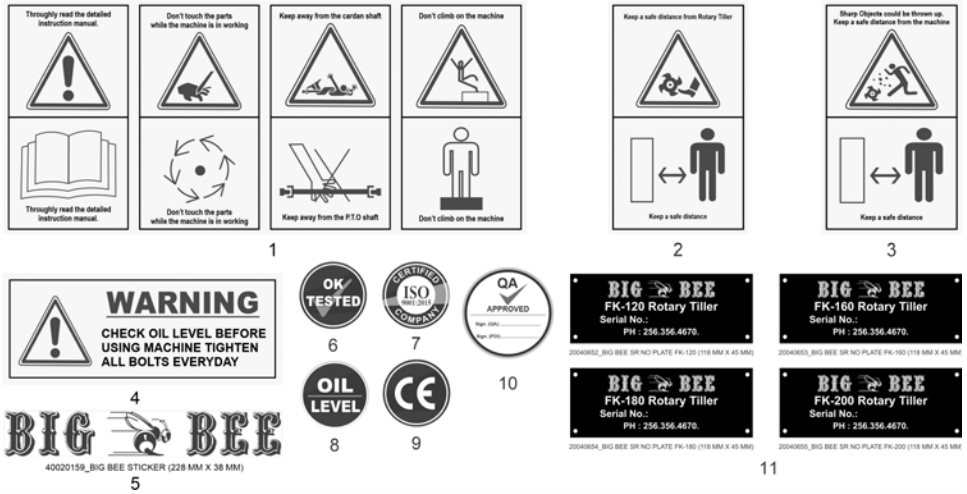
- Never leave the tractor unattended with the tiller in lifted position. Accidental operation of lifting lever or a hydraulic failure may cause sudden drop of unit with injury or death by crushing.
- Following operation, or before unhooking the tiller, stop the tractor, set the brakes, disengage the PTO, lower the attached tiller to the ground, shut off the engine, remove the ignition key and wait for all moving parts to stop.
- Make sure all parked machines are on a hard, level surface and engage all safety devices.
- Place support blocks under tiller as needed to prevent unit from tipping over onto a child and/or an adult. A tiller that tips over can result in injury or death.
- Store the unit in an area away from human activity.

2.7. Safety Labels

Your Rotary Tiller comes equipped with all safety labels in place. They are designed to help you safely operate your equipment. Read and follow their directions.

- Keep all safety labels clean and legible.
- Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest BIG BEE dealer.
- Some new equipment installed during repair requires safety labels to be affixed to the replaced component as specified by BIG BEE. When ordering new components make sure the correct safety labels are included in the request.
- Refer to this section for proper label placement. To install new labels:
  a. Clean surface area where label is to be placed.
  b. Spray soapy water onto the cleaned area.
  c. Peel backing from label and press label firmly onto the surface.
  d. Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.





3. ASSEMBLY AND SET UP

The Rotary Tiller is delivered fully assembled and equipped with a driveshaft with torque limiter (clutch discs) and related operating manual.

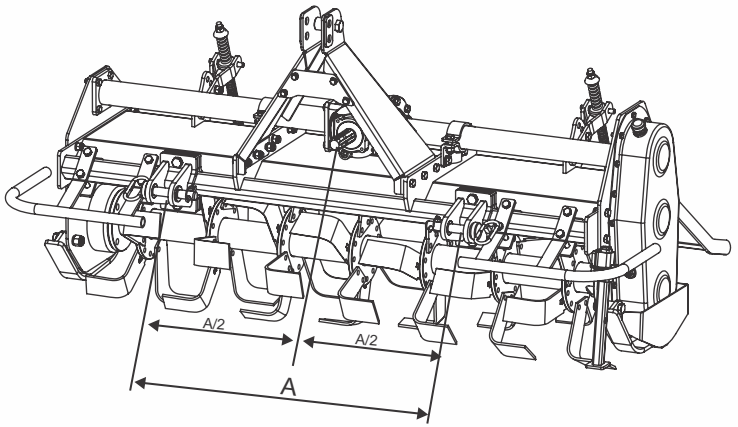
When the machine is delivered, check that there is no damage to the tiller or driveshaft. In case of damage or missing parts immediately notify the manufacturer or your dealer.

3.1. Lower Hitches Positioning

The Rotary Tillers are designed to be mounted on tractors equipped with:

- 3-point Hitch Category Cat-I (IS:4468)
- Quick Hitch Category Cat-I (ASABE Standard).

The position of the lower hitches must be equiv-spaced from main drive shaft of Gearbox.



3.2. Connecting to The Tractor

⚠ Never stand between tractor and rotary tiller while backing up tractor to the hitch.

- Place tiller and tractor on level ground.
- Back tractor into position by lining up lift arms and Hitch bracket of the tiller linkage pins. Attach lift arms to linkage pins and secure with lynch pins.
- Attach top link using upper linkage pin and lynch pin.
- Attach PTO shaft/drive shaft and secure anti-rotation chains.
- Once everything is securely attached, raise tiller off the ground and adjust the top link so the tiller sets level from front to back.
- Determine if the PTO shaft length suits tractor and tiller linkage.
- Make sure PTO shaft is properly installed and level before checking shaft collapsible length.

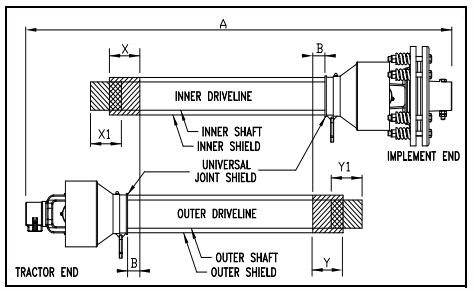
IMPORTANT: ***A PTO shaft that is too long to fit between tractor and tiller will bottom out causing structural damage to the tractor and tiller. Always check PTO shaft collapsible length during initial setup, when connecting to a different tractor and when alternating between using a quick hitch and a standard 3-point hitch. More than one PTO shaft may be required to fit all applications.***

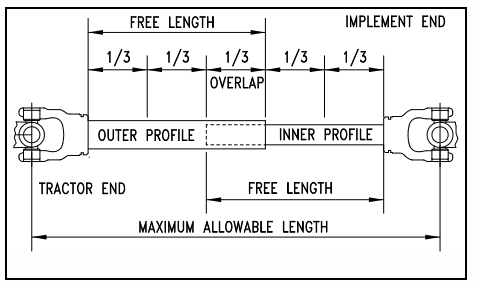
3.3. Sizing The PTO Shaft

- Un-hook shaft from tractor PTO shaft and pull outer and inner shaft apart.
- Reattach outer shaft to tractor PTO shaft. Pull on inner and outer shaft to be sure universal joints are properly secured.
- Hold inner and outer shaft parallel to each other:

  a. Measure 1" ("B" dimension) back from outer shaft universal joint shield to make a mark at this location on the inner shaft shield.

  b. Measure 1" ("B" dimension) back from the inner shaft universal joint shield and make a mark at this location on the outer shaft shield.
- Remove shaft from tractor and gearbox shaft.
- Measure from end of inner shield to scribed mark ("X" dimension). Cut off inner shield at the mark. Cut same amount off the inner shaft ("X1" dimension).
- Measure from end of outer shield to scribed mark ("Y" dimension). Cut off outer shield at the mark. Cut same amount off the outer shaft ("Y1" dimension).





The PTO shaft maximum allowable length must, when fully extended, have a minimum overlap of the profile tubes by not less than 1/3 the free length with both inner and outer profile tubes being of equal length.

For minimum PTO shaft length, measure 1" ("B" dimension) back from universal joint shield to end of outer PTO shaft shield.

4. OPERATING

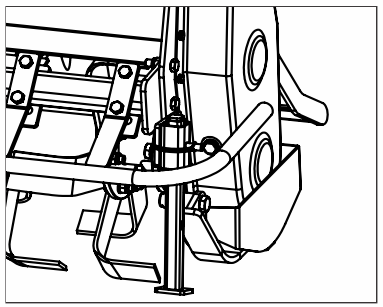
Before operate the tiller, make sure you have read and understood the operating manuals of the tiller, tractor and PTO shaft.

DANGER

During operation, adjustment, maintenance, repairing or transportation of the machine, the operator must always use appropriate Personal Protective Equipment (PPE).

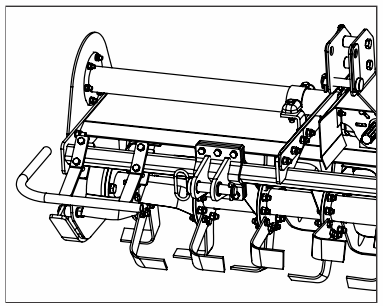
Before starting work, ensure that all machine guards are in good conditions and fully functional.

NOTE: ***Never attempt to adjust the rotary tiller while the tractor is running. Do not allow the tractor engine or rotary tiller to bog down or stall. This causes undue wear and tear on the tiller and tractor. If this continues to happen reduce ground speed and raise tilling depth of rotary tiller. Never attempt to remove objects from the rotor bar until the tractor has been shut down and the tiller tines have completely stopped.***



4.1 Raising parking stand

1. Remove spring locking pin .
2. Slide parking stand and way up on tiller bracket.
3. Fasten with spring locking pin.



4.2. Lower Clevises Adjustment

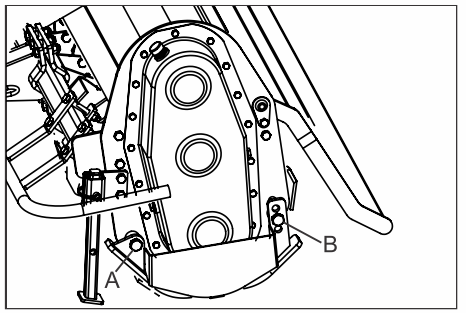
It is possible to adjust the lower hitch position loosening the bolts and sliding the clevis. Tighten the bolts after making any adjustment required.

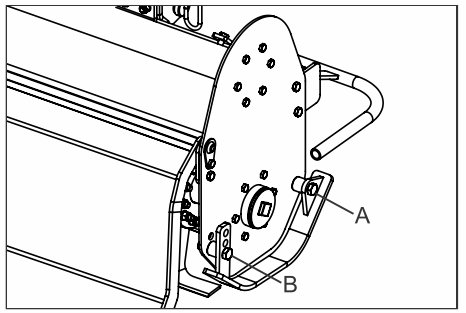
4.3 SKIDS ADJUSTMENT

The working depth of the tiller is determined by the position of the side skids. It may be increased by raising the skids, and decreased by lowered them. It's important that both skids are adjusted at the same height.

To adjust the working depth, perform the following steps:

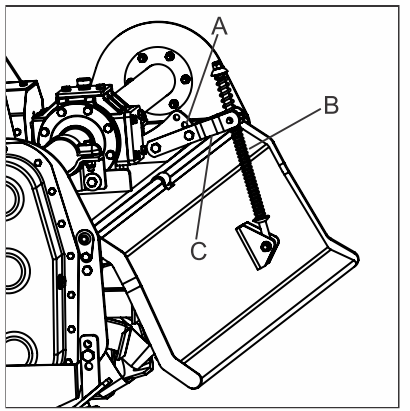
- Lift the machine, put it safely on security stands, then switch the tractor engine off, disengage PTO, set parking brake and off the ignition key.
- Loosen the bolt A in the front of the skid.
- Loosen the bolt B and remove the bolt on the rear of the skid.
- Adjust the height of the skid through the holes, as desired.
- Tighten the bolts.





When finished, verify that both skids are at same level, and check if the front of the tiller is leveled to the back, when lowered to the ground. Adjust with the 3-point top link if necessary.

4.4. Rear Board Adjustment



The position of plank board is adjustable by varying the hole position on shocker mounting plate (A). lowering the hole will increase pressure of tension shocker assembly (B) on plank board which result soil level compaction while upper hole position will reduce the pressure.

To adjust the plank board position, perform the following steps:

Loosen and remove the bolt and nut of shocker holding clamp (C) adjust the clamp upper and lower against shocker mounting plate (A) as required.

5. TRANSPORTING

To set the tiller for transportation, perform the following steps:

- Idle tractor engine, disengage tractor PTO, and wait for stopping of all rotating parts;
- Lift the tiller until the transport position, making sure the PTO shaft does not contact tractor or tiller. A minimum gap of 2 cm should be leaved between the tubes and tractor and tiller.
- Lock the tractor lifting hydraulics, turn off the engine, set the parking brake, remove ignition key and get off the tractor.
- Adjust the parking stand to the highest position, through the use of relative retaining pin, to prevent its possible damage during transport. When driving on public roads, follow strictly all local laws and traffic regulations.

6. MAINTENANCE

6.1 Service Lubrication

⚠ CAUTION

- The given frequencies are indicative and refer to normal conditions of use. They may therefore be subjected to variations in relation to the type of service, in more or less dusty environment, seasonal factors, etc.
- In the case of heavy-duty condition, the maintenance operation should obviously be more frequent.
- Before injecting grease into the lubricators, the greasing points must be thoroughly cleaned to prevent mud, dust or foreign bodies from mixing with the lubricants, thus reducing or even annulling its lubricating effect.
- When topping up or changing the lubricant, always ensure that the oil is of the same type as that used previously.
- Always keep oil and greases well away from children's reach. Always thoroughly read the warnings and precautions indicated on the containers.
- Avoid contact with the skin.
- Always thoroughly and fully wash after use. The utilized oils should be treated in compliance with the current anti-pollution laws.

It is advisable to use SAE 140 EP Grade OIL or equivalent for the gear box unit and side transmission. It is advisable to use high quality grease for all greasing points.

Every 8 Work Hours

- Grease the PTO Shaft cross journals.
- Check that the bolts fixing the hoe blades are well tightened.

Every 50 Work Hours

- Check the level of the oil in the gearbox or in the reduction unit and top up to the level mark on the rod as necessary.
- Side Drive Transmission : Check the level of the oil in the side casing of the transmission unit.
- Add oil through the fill plug if necessary. It should flow from the level plug.

Every 200 Work Hours

- Change the oil in the gearbox or in the reduction unit and transmission casing by completely draining of the old oil through the drain plug, under the reduction unit and through the transmission drain plug.

6.2 Blades Replacement

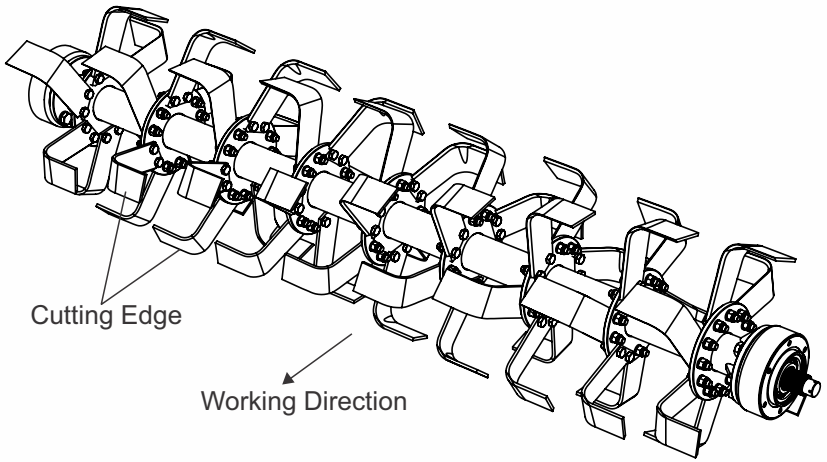
The Blades with which the rotary tiller is equipped can work soils of normal conformation. Check the degree of wear and condition of the Blades each day. If the blades should accidentally bend (or break) during work, they must be immediately replaced.

First - Identify Blades:

Remember to mount the new Blade in exactly the same position as the old one. If several Blades must be replaced, it is advisable to remove and assemble one Blade at a time in order to prevent positioning errors. The tillers are normally equipped with 6 blades per flange.

Second - Install New Blades:

1. Raise tiller with a safe lifting device.
2. Put safety stands or blocks under tiller.
3. Stand facing rear of tiller and study placement of Blades.
4. Remove bolts, lock washers, and nuts.



7. STORAGE

It is advisable to proceed in the following way at the end of the season or if the machine is to remain inactive for a long period of time:

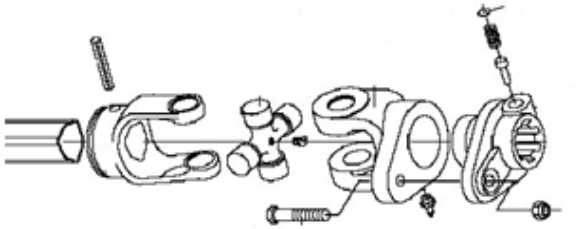
- Wash the implement, particularly removing any fertilizer and/or chemical products, and then thoroughly dry it.
- Carefully check for any damaged or worn parts and replace these if necessary.

3. Fully check screws or bolts, particularly those fixing the hoe blades.
4. Thoroughly lubricate the implement and lastly protect it with a plastic sheet. Store it in a dry place.

Careful compliance with these instructions will be all to the advantage of the user who will be sure to use an implement in perfect conditions when work begins again. Remember that the manufacturer is always at your disposal for any assistance or spare parts as may be required.

8. SLIP CLUTCH PROBLEM TIPS

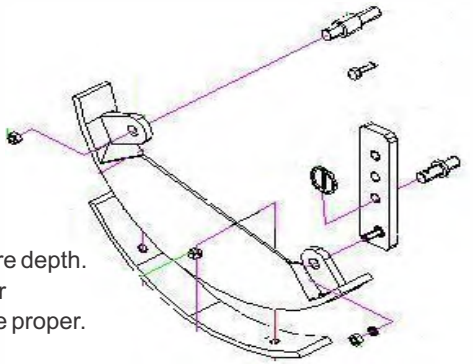
1. **Problem--** P.T.O shaft is rotating with constant speed but not the gear box.
   Cause of problem -- Safety bolt might be broken
   Solution – Replace the safety bolt.
   a) Remove the P.T.O shaft from the R.T side.
   b) Dislodge the safety bolt and replace it.



2. **Problem—**P.T.O shaft is making noise/ vibration.
   Cause of problem – P.T.O cross is broken.
   Solution –Change the P.T.O cross.
   a) Take the P.T.O shaft and check the cross of both side by rotating it.
   b) Remove the lock of the cross which is broken.
   c) Take out the cross by using hammer gentely.
   d) Insert the new one properly then lock it.
   e) Rotate the yoke, it should rotate properly.
   f) Make the greasing properly.

3. **Problem—**Yoke is not fitting on the pinion shaft.
   Cause of problem – Yoke pin is broken.
   Solution –Replace the yoke pin.
   a) Clear the head of the pin push it with with hammer and remove it
   B) Replace it with new one.
   c) Take care of proper cleaning and greasing.

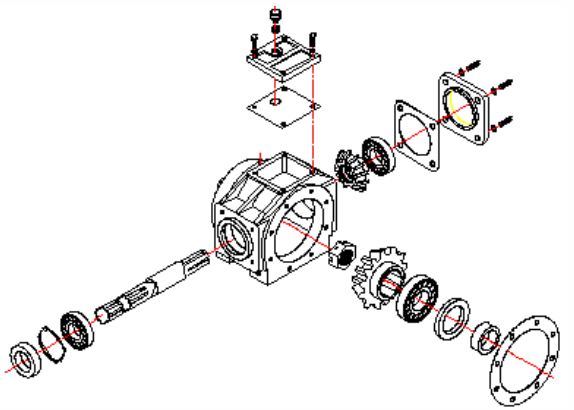
4. **Problem—**Rotary tiller is not taking proper depth.
   Cause of problem— Side depth skids need to be adjusted.



Solution –
a) Lose the side skid bolt .
b) Shift the hole to the upper side.

2. **Problem—**R.T. is taking on one side more depth.
   Cause of problem –linkage is not proper
   Solution –Linkage adjustment should be proper.
a. Tractor linkage should be tight.
b. There should not be any play more then1.5”(38MM).
c. At the time of attaching the rotary tiller the R.T should be in proper leveled position.
d. Both side skids should be in same bolt position.

3. **Problem—**Gear box is noisy.
   Cause of problem –Play in bearing or teeth broken.
   Solution –Replace the bearing or bevel gear.



a) Open the top cover to see the wear of the teeth
b) If the teeth of the gear is broken the bevel set needs to be replaced.
c) Pull out the gear box and open the big flange.
d) Then remove the back plate
e) Pull out the pinion shaft using hammer or press machine.
f) Replace the bearing, gear and seals.
g) Make the fitment in the same way using new gasket.
h) The gear should rotate freely.
i) Assemble it back the breather valve should be clean and oiling should be checked.

2. **Problem—**Gear shafts are rotating but not the rotor
   Cause of problem –Transmission shaft / RD shaft is broken

Solution –Open the side gear cover and replace the part which is broken.

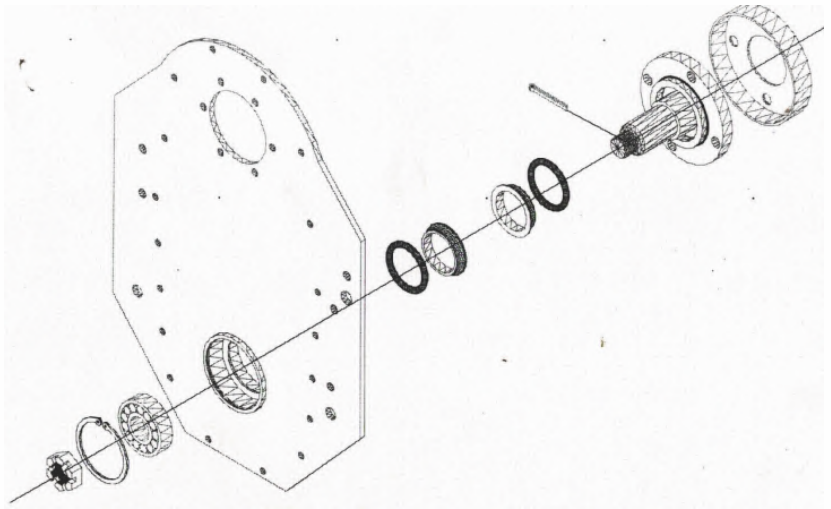
a. First remove the lock & loose the check nut.
b. Pull out the gears and check the broken parts.
c. If the transmission shaft is broken, replace the shaft then assemble the gear box with rotary tiller.
d. If gear is broken then replace the gear and tighten the cover nuts.

For RD shaft the process will be different

e. First open the flange bolt of the rotor on both side (RD shaft and Dead shaft) and remove the rotor.
f. Loosen the check nut of RD shaft and hammer it till it gets out from the RD shaft hub & then replace the RD shaft and tight the check nut. Take care of the seal as it should not be harmed with this replacement.

The same process be followed for dead shaft replacement.

3. Problem—Oil leakage from the RD shaft hub or dead hub.
Cause of problem –Seal is wearing out needs to replaced it.
Solution – Open the hub assembly as before



a. Take out the hub from the plate by loosening the bolts
b. Remove the lock and pull out the shaft.
c. Pull out the seal from both shaft and hub then replace it with new one
d. Inspect the position of bearing and hub if it is ok. Clean it and assemble as before.
e. Proper greasing is very necessary in assembly processes.

9. TORQUE VALUES TABLE

Torque Values Chart for Common Bolt Sizes

Bolt Size (inches)	Bolt Head Identification Grade 2		Grade 5		Grade 8	
in-tpi [1]	N · m [2]	ft-lb [3]	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1-1/8" - 12	540	395	1210	890	1960	1440
1-1/4" - 7	680	500	1520	1120	2460	1820
1-1/4" - 12	750	555	1680	1240	2730	2010
1-3/8" - 6	890	655	1990	1470	3230	2380
1-3/8" - 12	1010	745	2270	1670	3680	2710
1-1/2" - 6	1180	870	2640	1950	4290	3160
1-1/2" - 12	1330	980	2970	2190	4820	3560

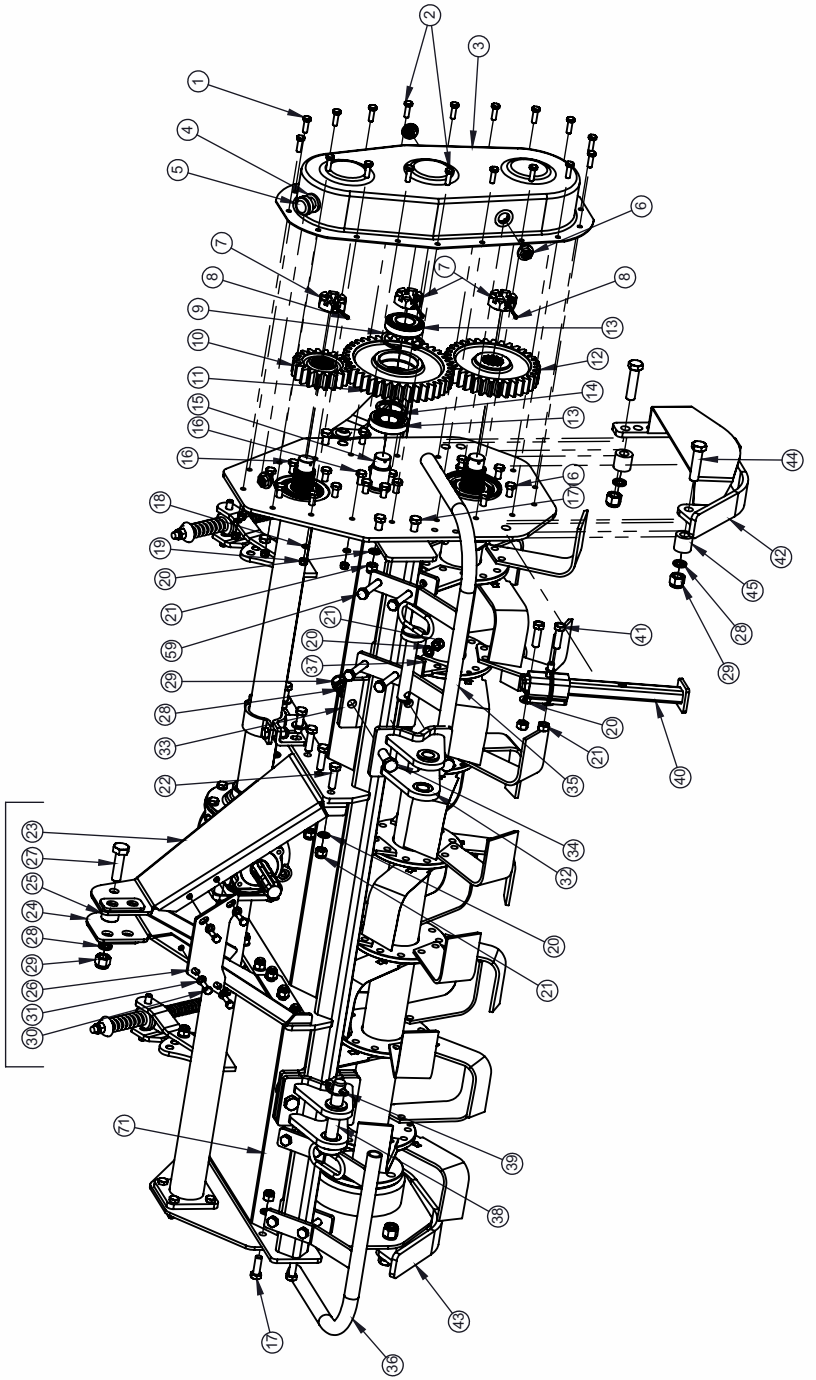
Bolt Size (Metric)	Bolt Head Identification 5.8 Class 5.8		8.8 Class 8.8		10.9 Class 10.9	
mm x pitch [4]	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	l215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

[1] in-tpi = nominal thread diameter in inches-threads per inch
[2] N· m = newton-meters
[3] ft-lb= foot pounds
[4] mm x pitch = nominal thread diameter in millimeters x thread pitch

10. PART CATALOGUE

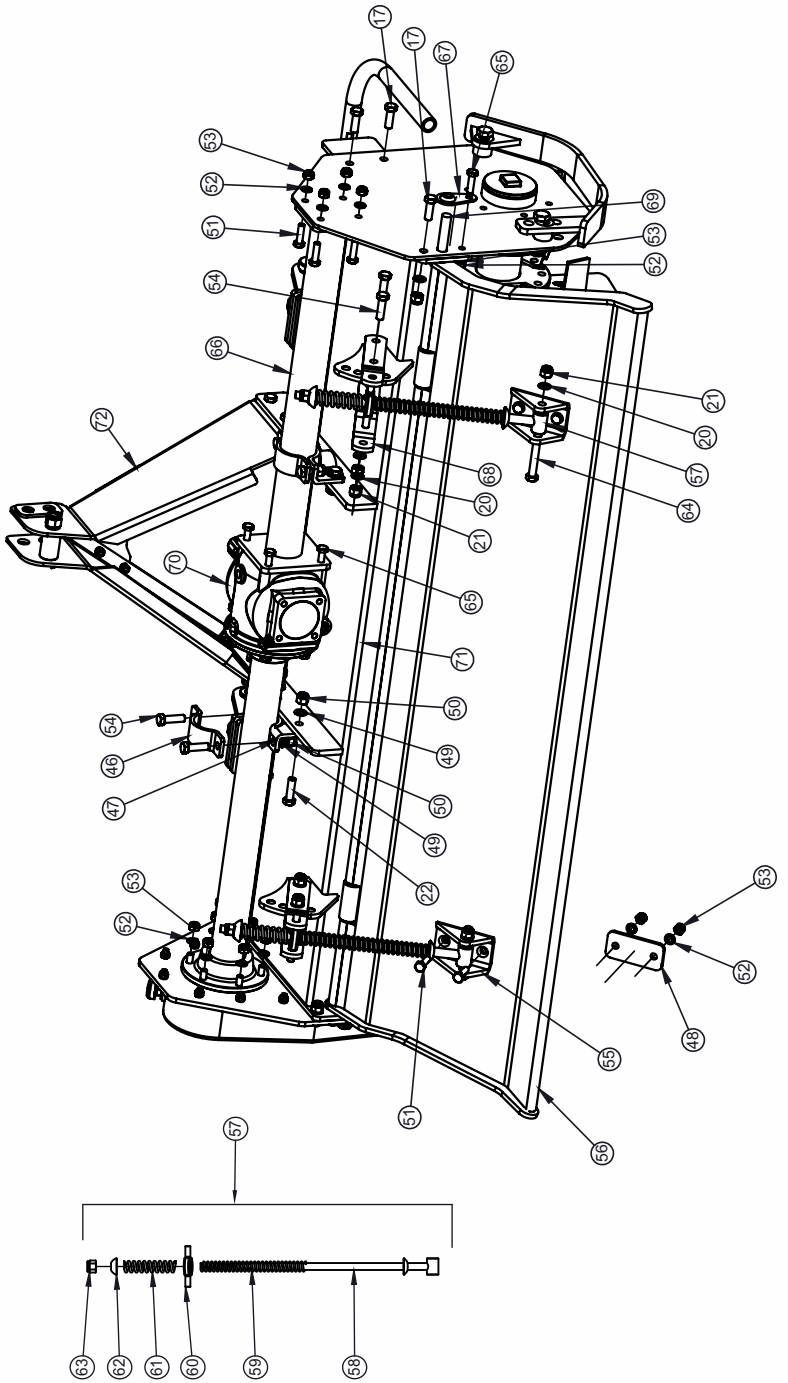
ROTARY TILLER COMPLETE ASSEMBLY			
SR. NO.	ITEM CODE	DESCRIPTION	QTY.
1	10260456	HEX HEAD BOLT M8X30X1.25P	2
2	10260001	HEX HEAD BOLT M8X25X1.25P	16
3	10150032	GEAR COVER	1
4	10280010	BREATHER NUT M22X1.5	1
5	10190001	BREATHER VALVE	1
6	10280011	DRAIN PLUG	1
7	10280093	CASTLE NUT M30X1.5	2
8	10020097	SPLIT PIN 1/8X2.5 INCH	2
9	10390022	INTERNAL CIRCLIP-72MM	1
10	10250069	SPUR GEAR 20T-14S	1
11	10250070	SPUR GEAR 40T	1
12	10250071	SPUR GEAR 34T-14S	1
13	10050100	BEARING 30207	2
14	20051687	SPACER 50 OD X 40 ID X 5 MM	1
15	10020145	IDLER PIN	1
16	10260353	HEX HEAD BOLT M10X35X1.5	18
17	10260362	HEX HEAD BOLT M12X35X1.75	6
18	10270002	SPRING WASHER 10MM	18
19	10280002	NYLOCK NUT M10X1.5	18
20	10270003	SPRING WASHER 12MM	12
21	10280025	NYLOCK NUT M12X1.75	12
22	10260273	HEX HEAD BOLT M12X40X1.75	6
23	79780025	TPL PLATE RHS	1
24	79780026	TPL PLATE LHS	1
25	10070004	TOP LINK BUSH	1
26	79780024	MIDDLE SUPPORT PLATE	1
27	10260418	HEX HEAD BOLT M16X95X2P	1
28	10270005	SPRING WASHER 16MM	5
29	10280005	NYLOCK NUT M16X2P	5
30	10260456	HEX HEAD BOLT M8X30X1.25P	4
31	10270008	PLAIN WASHER 8MM	4
32	10120030	FRONT LINK BRACKET UPPER	2
33	10120029	FRONT LINK BRACKET LOWER	2
34	10260378	HEX HEAD BOLT M16X65X2	4
35	70010220	FRONT SAFETY GUARD RHS	1
36	70010226	FRONT SAFETY GUARD LHS	1
37	70010180	SUPPPORT FLAT	2
38	10020146	TILLER PIN 22X145 CAT-1	2
39	10020022	LINCH PIN 10	2
40	73460022	RT STAND	1
41	10260273	HEX HEAD BOLT M12X40X1.75	2
42	79370001	DEPTH SKID ASSEMBLY (RHS)	1
43	79370002	DEPTH SKID ASSEMBLY (LHS)	1
44	10260378	HEX HEAD BOLT M16X65X2	4
45	10070005	DEPTH SKID BUSH	4

ROTARY TILLER



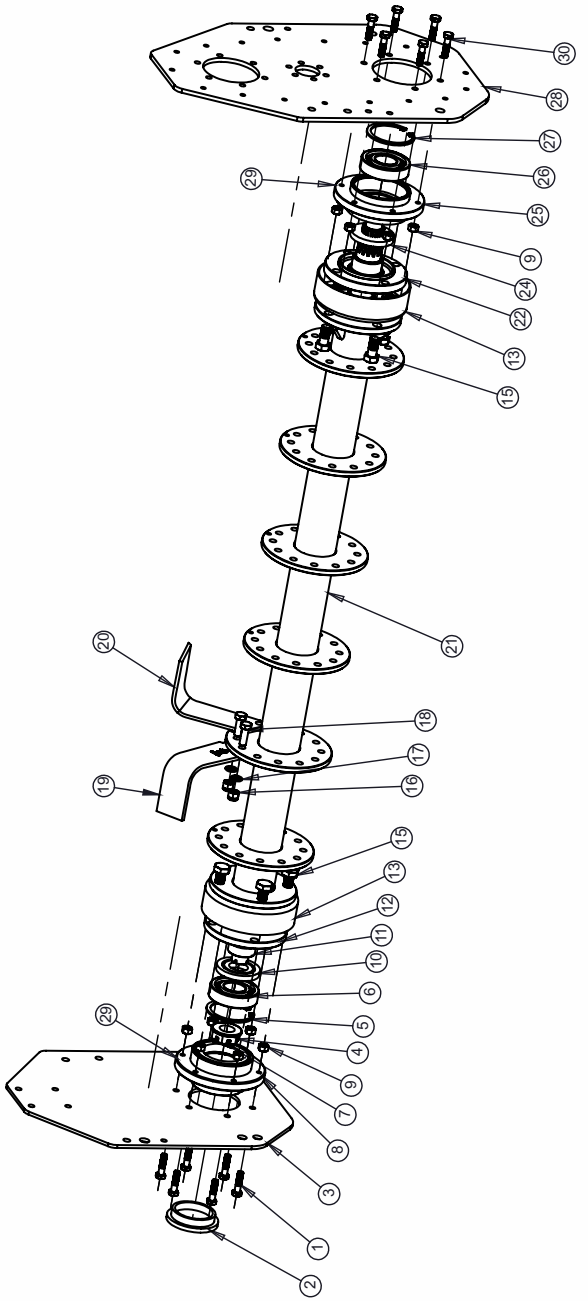
ROTARY TILLER COMPLETE ASSEMBLY			
SR.NO.	ITEM CODE	DESCRIPTION	QTY.
46	10220043	TRANSMISSION PIPE CLAMP LOWER MINI RT	2
47	10220044	TRANSMISSION PIPE CLAMP UPPER MINI RT	2
48	70020026	PLANK INNER SUPPORT FLAT	2
49	10270003	SPRING WASHER 12MM	4
50	10280025	NYLOCK NUT M12X1.75	4
51	10260353	HEX HEAD BOLT M10X35X1.5	4
52	10270002	SPRING WASHER 10 MM	10
53	10280002	NYLOCK NUT M10X1.5MM	10
54	10260373	HEX HEAD BOLT M12X50X1.75	8
55	10220051	SHOCKER PLANK ATTACHMENT U CLAMP	2
56	79670003	PLANK ASSEMBLY 1.20 MTR.	1
	79670004	PLANK ASSEMBLY 1.40 MTR.	
	79670005	PLANK ASSEMBLY 1.60 MTR.	
	79670006	PLANK ASSEMBLY 1.80 MTR.	
57	79820001	SHOCKER ASSEMBLY	2
58	10160061	SHOCKER ROD WITH LOWER CUP (MINI)	1
59	10210027	SOCKER BIG SPRING (MINI)	1
60	10070102	SHOCKER ROD BUSH (MINI)	1
61	10210026	SHOCKER SMALL SPRING (MINI)	1
62	10180040	SHOCKER SPRING CUP UPPER NEW	1
63	10280025	NYLOCK NUT M12X1.75 MM	1
64	10260364	HEX HEAD BOLT M12X90X1.75	2
65	10260353	HEX HEAD BOLT M10X35X1.5	4
66	74790038	GEARBOX SIDE SUPPORT PIPE ASSEMBLY-1.20 MTR	1
	74790039	GEARBOX SIDE SUPPORT PIPE ASSEMBLY-1.40 MTR	
	74790040	GEARBOX SIDE SUPPORT PIPE ASSEMBLY-1.60 MTR	
	74790041	GEARBOX SIDE SUPPORT PIPE ASSEMBLY-1.80 MTR	
67	70020050	PLANK ROD SUPPORT PLATE	2
68	70020012	FRAME SHOCKER HOLDING CLAMP	4
69	79630001	PLANK ROD 1.20 MTR	2
	10160063	PLANK ROD 1.40 MTR	
	10160059	PLANK ROD 1.60 MTR	
	10160060	PLANK ROD 1.80 MTR	
70	79770006	GEAR BOX ASSEMBLY 1.20 MTR	1
	79770007	GEAR BOX ASSEMBLY 1.40 MTR	
	79770008	GEAR BOX ASSEMBLY 1.60 MTR	
	79770009	GEAR BOX ASSEMBLY 1.80 MTR	
71	70010229	FRAME ASSEMBLY COMPLETE- 1.20 MTR	1
	70010230	FRAME ASSEMBLY COMPLETE- 1.40 MTR	
	70010231	FRAME ASSEMBLY COMPLETE- 1.60 MTR	
	70010232	FRAME ASSEMBLY COMPLETE- 1.80 MTR	
72	79780019	3-POINT LINKAGE ASSEMBLY COMPLETE	1

ROTARY TILLER



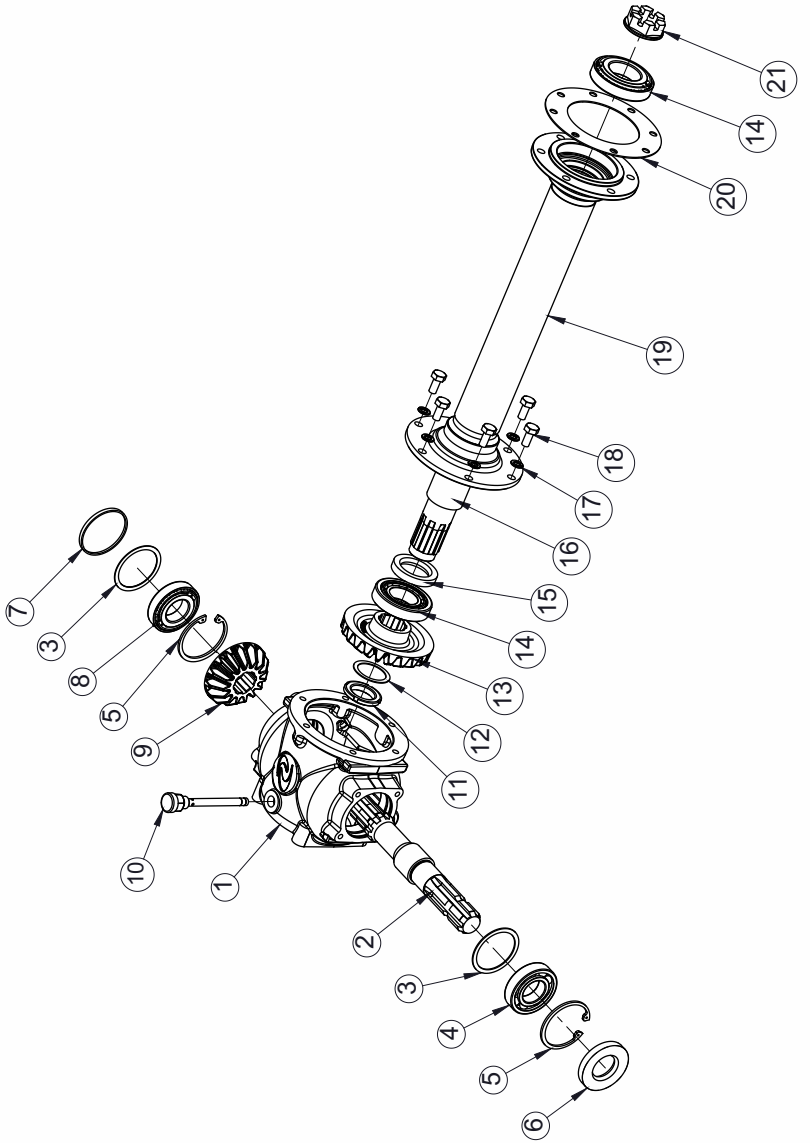
SIDE PLATE & ROTOR ASSEMBLY			
SR. NO.	**ITEM CODE**	**DESCRIPTION**	**QTY.**
1	10260005	HEX HEAD BOLT M10X1.5PX45	6
2	10150122	DEAD HUB COVER	1
3	70040013	RT SIDE PLATE DEAD SIDE 514X400X6 MM	1
4	10280093	CASTLE NUT M30X1.5P	1
5	10390005	INTERNAL CIRCLIP B80	1
6	10050090	BEARING 6307	1
7	10020074	SPLIT PIN 1/8"X2.5 INCH	1
8	10090098	DEAD HUB	1
9	10280036	PLAIN NUT M10X1.5P	6
10	10010004	OIL SEAL 50X75X15	1
11	10070043	DEAD SHAFT BUSH	1
12	10110007	DEAD AXLE SHAFT	1
13	10150003	ROTOR COVER	2
14	10270005	SPRING WASHER	8
15	10260369	HEX HEAD BOLT M16X1.5PX35 (12MM THREAD)	8
16	10280025	NYLOCK NUT M12X1.75P	12 PER FLANGE
17	10270003	SPRING WASHER 12MM	12 PER FLANGE
18	10260362	HEX HEAD BOLT M12X35X1.75P	12 PER FLANGE
19	10060036	HOE LHS (L TYPE)	3 PER FLANGE
20	10060037	HOE RHS (L TYPE)	3 PER FLANGE
21		**ROTOR ASSEMBLY COMPLETE**	1
	79700009	ROTOR ASSEMBLY COMPLETE 1.20 MTR.	
	79680001	ROTOR ASSEMBLY COMPLETE 1.40 MTR.	
	79690001	ROTOR ASSEMBLY COMPLETE 1.60 MTR.	
	79700001	ROTOR ASSEMBLY COMPLETE 1.80 MTR.	
22	10290013	RD SHAFT 14S	1
23	10070002	RD SHAFT BUSH	1
24	10010136	OIL SEAL 65X85X16	1
25	10090032	RD HUB	1
26	10050042	BEARING 6309	1
27	10390007	CIRCLIP 100 MM	1
28	70040012	RT SIDE PLATE DRIVE SIDE 600X400X8 MM	1
29	10040025	GASKET RD HUB	3
30	10260353	HEX HEAD BOLT M10X1.5PX35	6

SIDE PLATE & ROTOR ASSEMBLY

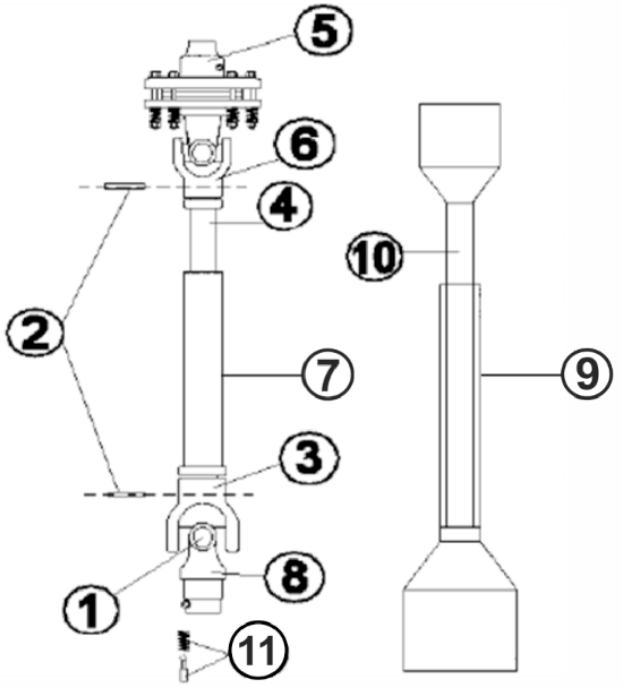


RT GEAR BOX ASSEMBLY			
SR.NO.	**DESCRIPTION**	**ITEM NO.**	**QTY.**
1	GEAR BOX HOUSING	10080019	1
2	PINION SHAFT	10290098	1
3	SHIM 71 MM	10410041	2
4	BEARING 6207	10050086	1
5	CIRCLIP 72 MM	10390022	2
6	OIL SEAL 35x72x10	10010001	1
7	CUP SEAL 72X10	10301289	1
8	BEARING 30207	10050100	1
9	PINION GEAR 15T	10250051	1
10	DIP STICK	10300317	1
11	RING NUT M30x1.5	10280119	1
12	SHIM 40MM	10300026	1
13	BEVEL GEAR 22T	10250052	1
14	BEARING 30208	10050087	2
15	OIL SEAL 40x62x10	10010073	1
16	TRANSMISSION SHAFT 1.20 MTR.	10290085	1
	TRANSMISSION SHAFT 1.40 MTR.	10290104	
	TRANSMISSION SHAFT 1.60 MTR.	10290105	
	TRANSMISSION SHAFT 1.80 MTR.	10290106	
17	SPRING WASHER 10MM	10270002	6
18	HEX HEAD BOLT M10x20x1.5MM	10260390	6
19	TRANSMISSION PIPE ASSEMBLY 1.20 MTR.	79560003	1
	TRANSMISSION PIPE ASSEMBLY 1.40 MTR.	79790004	
	TRANSMISSION PIPE ASSEMBLY 1.60 MTR.	79790005	
	TRANSMISSION PIPE ASSEMBLY 1.80 MTR.	79790006	
20	SMALL FLANGE GASKET TRANSMISSION PIPE	10040005	1
21	CASTLE NUT M30x1.5	10280093	1

GEAR BOX ASSEMBLY

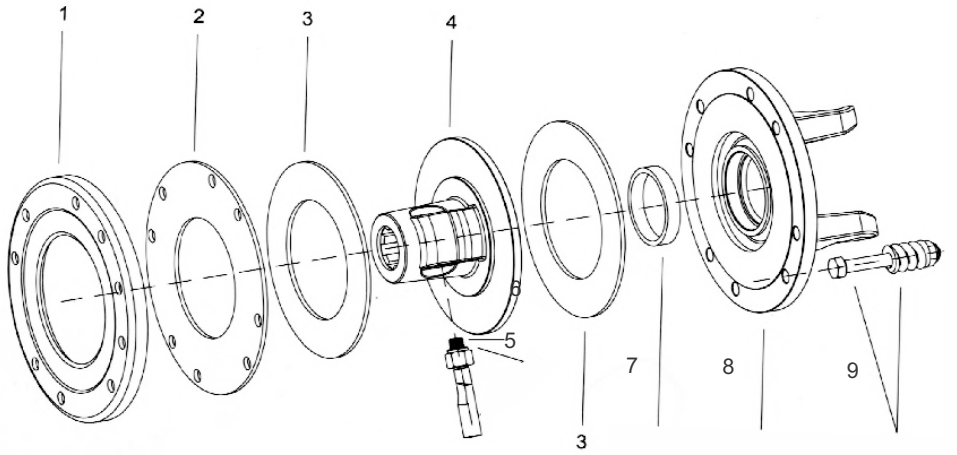


PTO SHAFT ASSEMBLY - SLIP CLUTCH TYPE



S.No.	DESCRIPTION	T06X560	T04X510	QTY
	COMPLETE PTO SHAFT	10310062	10310124	1
1	CROSS JOURNAL SET	10310064	10310100	2
2	SPRING DOWEL PIN SET (SLIP CLUTCH PTO)	10210031	10210194	2
3	OUTER TUBE YOKE	10310079	10310101	1
4	INNER TUBE	10310066	10310105	1
5	SLIP CLUTCH ASSEMBLY	10310127	10310135	1
6	INNER TUBE YOKE	10310080	10310113	1
7	OUTER TUBE	10310155	10310103	1
8	PUSH PIN YOKE WITH PIN (6 SPLINES)	10310072	10310099	1
9	HALF FEMALE GUARD ASSEMBLY	10310156	10310119	1
10	HALF MALE GUARD ASSEMBLY	10310157	10310118	1
11	PUSH PIN SET	10301282	10310152	1

SLIP CLUTCH ASSEMBLY



S.No.	DESCRIPTION	T06X560	T04X510	QTY
1	PRESSURE PLATE	10310128	10310136	1
2	INTERNAL DISC	10310129	10310137	1
3	FRICTION LINING	10310130	10310138	2
4	HUB	10310131	10310139	1
5	HUB BOLT M12X70X1.75P	10260407	10260407	2
6	NYLOCK NUT M12X1.75P	10280025	10280025	2
7	BUSHING	10310132	10310140	1
8	FLANGED SPLINE	10310133	10310141	1
9	COMPLETE BOLT AND SPRING	10310134	10310142	8

DELIVERY CHECKLIST

Dealer Pre-Delivery (Please Tick)

1. Dealer Pre-Delivery Checklist

1. The customer or person responsible has been given the operator's manual.
2. The customer undertakes to read the complete operator's manual and understands all aspects of the manual before operation of the machine.
3. All safety, operational and maintenance information have been explained and demonstrated.
4. All greasing and oil points, stickers, guarding and ID plate have been identified and physically pointed out.
5. The customer agrees that it is his responsibility to read and carry out the safety, maintenance and operation as per this operator's manual.

Please Complete all Dealer information Below

Dealer Information

Dealer's Name.....

Address.....

.....

State..... Postcode.....

Phone..... Fax.....

Email.....

Service Person.....

I confirm that the pre-delivery service was performed on this machine.

Signature.....

Date.....

Comments.....

.....

.....

Customer Delivery (Please Tick)

2. Customer Delivery Checklist

1. The customer or person responsible has been given the operator's manual.
2. The customer undertakes to read the complete operator's manual and understands all aspects of the manual before operation of the machine.
3. All safety, operational and maintenance information have been explained and demonstrated.
4. All greasing and oil points, stickers, guarding and ID plate have been identified and physically pointed out.
5. The customer agrees that it is his responsibility to read and carry out the safety, maintenance and operation as per this operator's manual.

Please Complete all Customer Information Below

Customer Information

Customer's Name.....

Address.....

.....

State..... Postcode.....

Phone..... Fax.....

Email.....

Delivery Person.....

I confirm that all of the delivery checks were explained and performed.

Signature.....

Delivery Date.....

Comments.....

.....

.....

BIG BEE

WARRANTY CARD

Customer Copy

CUSTOMER NAME Mr./ Mrs	:	
ADDRESS	:	
MOBILE NO.	:	
Email	:	
NAME OF IMPLEMENT	:	
MODEL NO.	:	
YEAR OF Mfg.	:	
SERIAL NO.	:	
REGISTRATION NO.	:	
DATE OF PURCHASING	:	
NAME OF DEALER	:	

Customer`s Signature

Dealer`s Signature

DARRELL HARP ENTERPRISES

Inc.819 4th Street NW, PO Box 140, Red Bay,
AL 35582, USA 256.356.4670
dheparts@bellsouth.net. www.darrellharp.com

BIG BEE

WARRANTY CARD

Company Copy

CUSTOMER NAME Mr./ Mrs :	
ADDRESS :	
MOBILE NO. :	
Email :	
NAME OF IMPLEMENT :	
MODEL NO. :	
YEAR OF Mfg. :	
SERIAL NO. :	
REGISTRATION NO. :	
DATE OF PURCHASING :	
NAME OF DEALER :	

Customer`s Signature

Dealer`s Signature

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BIG BEE

WARRANTY CARD

Dealer Copy

CUSTOMER NAME Mr./ Mrs	:	
ADDRESS	:	
MOBILE NO.	:	
Email	:	
NAME OF IMPLEMENT	:	
MODEL NO.	:	
YEAR OF Mfg.	:	
SERIAL NO.	:	
REGISTRATION NO.	:	
DATE OF PURCHASING	:	
NAME OF DEALER	:	

Customer`s Signature

Dealer`s Signature

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