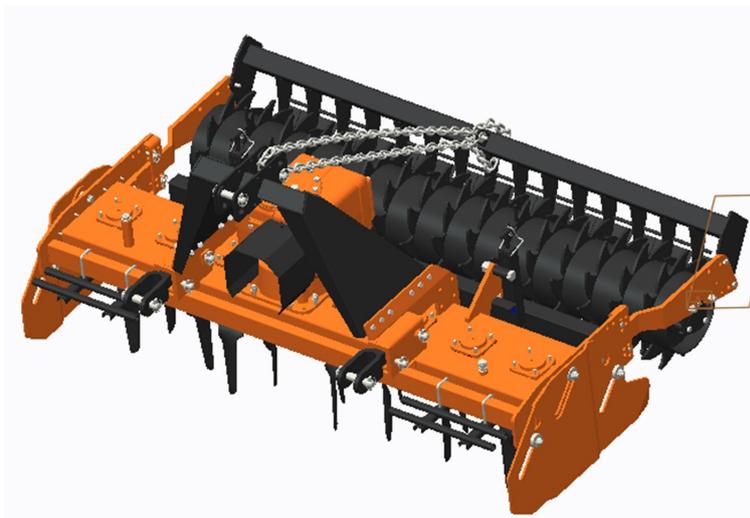




SRP POWER HARROW OPERATOR'S MANUAL



OM 1211/Rev.02/2015

To the Purchaser

This manual contains valuable information about your COSMO BUULY Power Harrow. It has been carefully prepared to give you helpful suggestions for operating, adjusting, servicing repair parts.

Keep this manual in a convenient place for quick and easy reference. Study it carefully. You have purchased a dependable and sturdy implement, but only with proper care and operation can you expect to receive the long life it has been designed and built for.

RIGHT-HAND AND LEFT-HAND sides are determined by watching from the tractor side.

Sometime in the future your implement may need new parts to replace those that are worn or broken. If so, go to your dealer and provide him with the model and part number.

Customer information

Name _____

Purchased from _____

Purchased date _____

Model No. _____

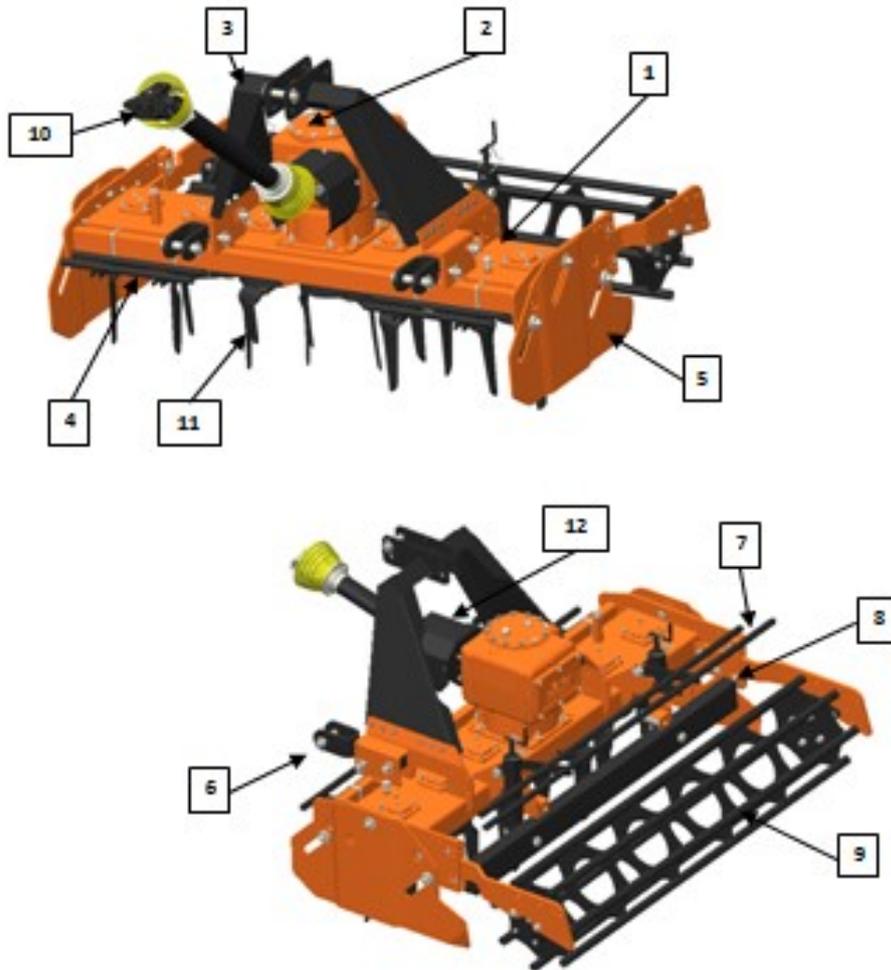
Serial No. _____

CUSTOMER RESPONSIBILITY

It is the purchaser and/ or operator's responsibility to:

- Read and understand the information contained in this manual.
- Operate, lubricate, assemble and maintain the equipment in accordance with all instructions and safety procedures in this manual.
- 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.
- The manufacturer declines all responsibility for damage to person or property or machine caused by negligence and failure to comply with these instructions.
- Return the equipment or parts to the authorized reseller (where it was purchased) for service. In the event the customer believes they have a case for warranty, ensure the dealer contacts the importer before any work is carried out.

MAIN PART OF THE MACHINE



1. Deck

4. Front Guard

7. Rear Guard

10. PTO Shaft

2. Gear Box

5. Side Plate (Side Guard).

8. Rear Levelling Bar

11. Blade

3. Tower

6. Lower Link

9. Roller (optional)

12. Input Shaft Cover

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2- INTRODUCTION

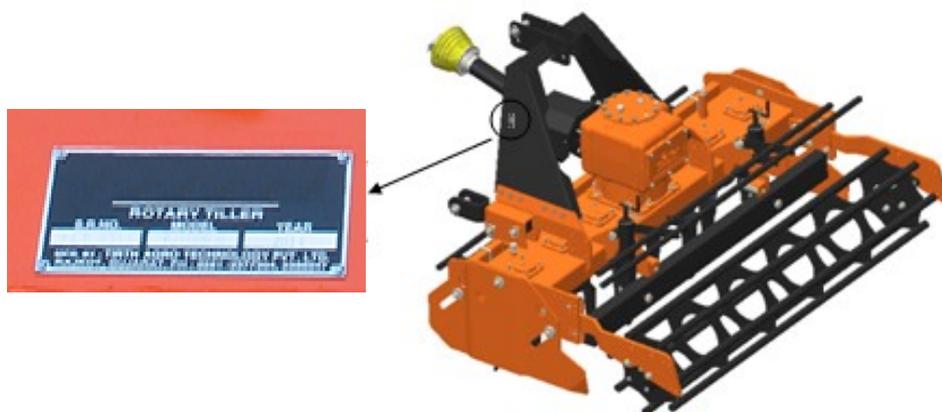
2.1 Introduction

- This Power Harrow has been specifically designed for primary tillage operation. It can till at greater depth, breaks massive clumps and level land in just one pass. It is also useful for converting barren land into cultivable land. It is available in working width of 150 cm, 175 cm and 200 cm.
- The machine can be operated with any tractor in the 60-90hp range that has PTO input of 540/1000 rpm with dual clutch.
- The Machine attaches to the tractor using the tractors three point linkage. Power is supplied by the tractor via a PTO shaft with a slip clutch.
- The design and position of the blade reduces load on tractor and minimize vibration which results in a highly productive implement.

2.2 Identification

Each individual machine has an identification plate that records the following details:

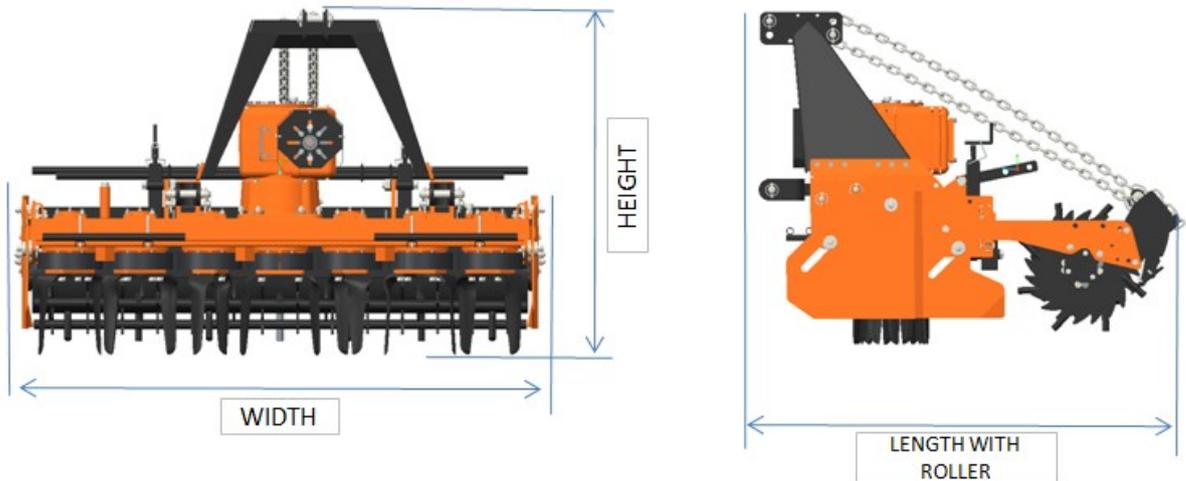
1. **Serial number**
2. **Model No.**
3. **Year**
4. **The manufacturer's address**



2.3 Technical specification

Model	 Total Width, cm	Working width	Working Depth				Overall Dimensions (W x L x H)
		cm	Inch	HP		KG	
SRP – 150		150	8-10	60+	12	545	1610 x 1500 x 1210
SRP – 175		175	8-10	65+	14	590	1855 x 1500 x 1210
SRP – 200		200	8-10	70+	16	640	2100 x 1500 x 1210

- Technical specifications do not allow for the weight of the PTO Shaft (approx. 20 kg).
- Working depth is adjustable from 4 inches to 8 inches for all models in optimum conditions.



STANDARDS EQUIPMENT	OPTIONAL EQUIPMENTS
➤ Lower Linkage brackets	➤ Cage roller
➤ PTO Shaft with slip clutch	➤ Packer roller
➤ Multi speed gear box (540/1000)	
➤ Adjustable side plates	
➤ 285 x 12mm blades	
➤ Adjustable Rear Leveling Bar	

3-SAFETY

3.1 Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended safe operating practices.



3.2 Understand Safety Decals

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol.

DANGER identifies the most serious hazards.

DANGER or WARNING safety labels are located near specific hazards.

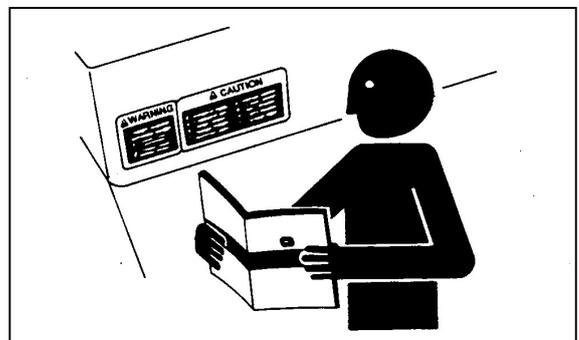
General precautions are listed as CAUTION. CAUTION also calls attention to safety messages in this manual.



3.3 Follow Safety Instructions

Carefully read all safety messages in this manual and safety labels on your machine. Keep safety labels in good condition. Replace missing or damaged safety labels. Be sure any options added later have safety labels along with any repaired parts. Replacement safety labels are available from your dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.



Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction. Only trained operator should use this product.

Keep your machine in proper working condition.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your dealer.

The manufacturer declines all and every responsibility for failure to comply with the safety and accident preventing instructions mentioned in this manual book.

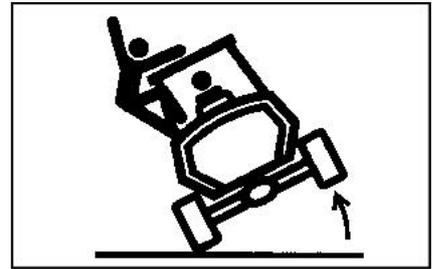
3.4 Operate Machine Safely

Thoroughly read all the instructions for safely operation of the Machine.

- Before starting the tractor and implement, always check all the safety devices are in perfect conditions.
- It is absolutely prohibited for those with little experience or those in precarious health conditions to drive the tractor with implement mounted.
- The implement may only be driven via the PTO shaft complete with necessary safety devices to prevent overloading.
- Keep clear of PTO when it's operating.
- Always take care of the centrifugal force exercised by the furthered position of the centre of gravity, when turning corners with the implement mounted.
- Before engaging the PTO, check the RPM rate prescribed. Never exchange the 540 RPM rate for 1000 RPM rate.
- Before leaving the tractor, lower the implement, stop the engine, engage the hand brake and remove ignition key from the control panel.
- It is absolutely prohibited to stand between the tractor and the implement where the engine is running and the PTO shaft is engaged.
- Always set the lift control lever to the locked position before coupling or releasing the implement from the three point coupling.
- The category of the implement coupling pins must correspond to that of lower linkage holes.
- It is absolutely prohibited to stand between the tractor and the implement when maneuvering the lower linkage arms into position.
- Set the control lever of the hydraulic lift to the locked position during road transport with the implement raised.
- Only use the PTO shaft supplied.
- Take great care of the PTO shaft and covers both in the transport and work positions.
- The PTO shaft must only be installed or dismantled whilst the engine is off.
- Take great care to ensure that the PTO shaft is correctly assembled and safe.
- Before engaging the PTO, ensure that there is no person and animals in the field you will be operating and that the selected PTO input on the tractor corresponds to that of the implement. Never exceed the recommended maximum rate.
- Only clean and grease the PTO shaft when the PTO is disengaged, the engine is off, the hand brake engaged and the ignition key removed.
- Refit the protective cover over the input shaft after connecting or disconnecting the PTO shaft.
- Never carry out maintenance or cleaning work unless the PTO has been disengaged, the engine switched off and the hand brake engaged and the tractor locked in position by a block or stone under the wheels.
- Always place adequate supports under the implement when it's raised for servicing or blade replacement.
- Before working on blades, disengage the PTO, switch off the tractor engine, engage hand brake and check all the blades are completely at a standstill.
- Operate the implement carefully to avoid injury. If the implement must be raised for work on or near the implement make sure the service locks are installed or that the implement is safely supported.
- Be careful when operating the implement on slopes; tractors can roll if you hit a hole, ditch or unstable terrain.
- Only one person, the operator, should be in the tractor seat when the tractor and the implement are in use.

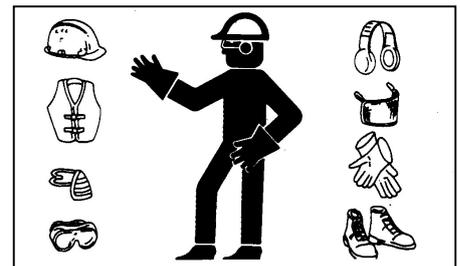
3.5 Keep Passengers off Machine

- Only allow the operator on the Tractor. Keep passengers off.
- Passengers riding on machine are subject to injury such as being struck by foreign objects and being thrown off of the tractor.
- Passengers also obstruct the tractor operator's view which may result in the implement operating in an unsafe manner.



3.6 Wear Personal Protective Equipment

- Wear close fitting clothing and safety equipment (picture to the right) appropriate to the job.
- Wear hearing protection as prolonged exposure to loud noise can cause impairment or loss of hearing.
- Operating equipment safely requires the full attention of the operator. Do not wear headphones or listen to loud music while operating the machine.



3.7 Transport Safety

- Ensure you are operating the tractor as outlined in the tractor manual.
- Engage a lower gear when going down steep hills or descents.
- Always operate at reasonable and safe speed for the operating conditions.
- Prevent collisions between other road users due to being a slow-moving machine.
- Frequently check for traffic from the rear, especially when turning.
- Keep other people away from the machine when operating.
- It is absolutely prohibited to carry passenger or animal on the implement.
- For better stability and operator safety, make sure the tractor is correctly ballasted.
- Your tractor must have ROPS fitted and your seatbelt should be fastened during operation.
- Be aware the machine's transport height and width.
- During transport, or whenever the implement must be raised, it is advisable to adjust the height until the implement itself is no more than 30 cm from the ground.

3.8 Comply with the Transport Speed Limit

Some tractors can operate at speeds higher than the maximum speed limit for this implement.

The maximum permissible travel speed for this implement is 20 km/h (12 mph).

Do not exceed the implement's transport speed limit. Exceeding the implement's maximum transport speed can result in:

- Loss of control of the tractor/implement combination
- Reduced stopping power or limit braking ability of the tractor
- Damage to the implement's structure or components

Be careful and slow down in adverse conditions, when turning and when operating on slopes.

3.9 Service Machine Safely

To help prevent personal injury caused by unexpected movement, be sure to service machine on level surface.

If the implement must be in a raised position while working on or near it, be certain service locks are installed or machine is adequately supported.

If implement is connected to tractor, engage parking brake and/or place transmission in “PARK”, shut off engine and remove key.

If the implement is detached from tractor, block wheels and use safety stands to prevent movement.

Operations and adjustments to the implement must always be carried out when the engine is off and tractor braked.

3.10 Practice Safe Maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust implement while it is moving. Keep hands, feet, and clothing from power-driven parts. Disengage all power sources. Lower implement to the ground. Stop the engine.

Remove the key. Allow implement to cool.

Securely support any implement elements that must be raised for service work.

Keep all parts in good condition and properly installed.

Fix damage immediately. Replace worn or broken parts.

Remove any buildup of grease, oil, or debris.

3.11 Dispose of Waste Properly

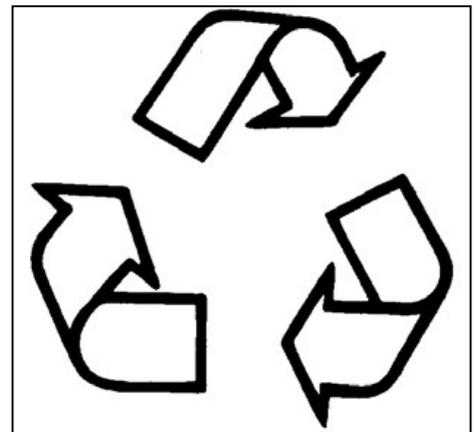
Improperly disposing of waste can threaten the environment and ecology.

Use leak proof containers when draining fluids.

Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling centre, or from your dealer.



4-SAFETY LABELS

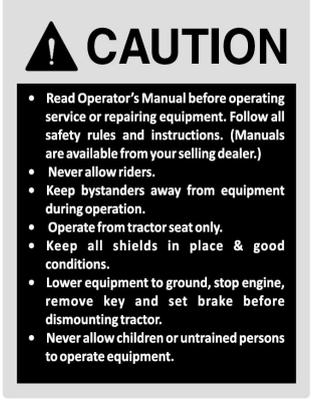
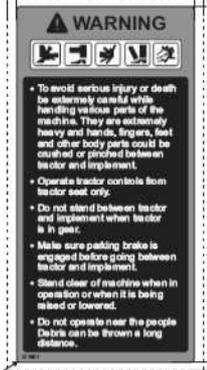
4.1 Safety Labels

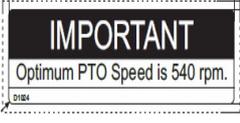
The types of Safety Sign and locations on the equipment are shown in the illustration below.

Good safety requires that you familiarize with the various safety labels, the type of warnings and the area or particular function related to that area that requires your safety awareness.

IMPORTANT: If Safety Labels have been damaged, removed, become illegible or parts replaced without labels, new safety labels must be applied.

New Safety labels are available from your authorized Dealer.

SN	DECAL NUMBER	DESCRIPTION	PICTURE
1	D1004	<p>Caution - Read Operator Manual</p> <ul style="list-style-type: none"> • Read operator’s manual before operating, servicing or repairing. Follow all safety rules and instructions. • Never allow passengers. • Keep bystanders away while operating. • Operate from tractor seat only. • Keep all shields in place and good condition. • Lower implement to ground, stop engine, remove key and set brake before dismounting tractor • Never allow children or untrained person to operate the implement. 	 <p>CAUTION</p> <ul style="list-style-type: none"> • Read Operator’s Manual before operating service or repairing equipment. Follow all safety rules and instructions. (Manuals are available from your selling dealer.) • Never allow riders. • Keep bystanders away from equipment during operation. • Operate from tractor seat only. • Keep all shields in place & good conditions. • Lower equipment to ground, stop engine, remove key and set brake before dismounting tractor. • Never allow children or untrained persons to operate equipment.
2	D1002	<p>Danger - Rotating Drive Line</p> <ul style="list-style-type: none"> • Entanglement or Interference in rotating drive lines can cause serious injury or death. • Keep all shields in place. Avoid contact with rotating parts 	
3	D1054	<p>Danger-Crushing</p> <ul style="list-style-type: none"> • Risk of entanglement and crushing of body due to moving parts. • Never open or remove protective equipment, while the tractor engine or PTO is operating. • Avoid contact with rotating parts 	
4	D1001	<p>Warning - Crush Hazard-</p> <ul style="list-style-type: none"> • Be extremely careful while handling various parts of the implement. Some may be heavy, other sharp and it could result in injury. • Operate tractor controls from tractor seat only. • Do not stand between tractor and implement when tractor is in gear. • Make sure parking brake is engaged before going near implement. • Stand clear of the machine when in operation or when it is being raised or lowered. • Do not operate near the people. Debris can be thrown a long distance. 	 <p>WARNING</p> <ul style="list-style-type: none"> • To avoid serious injury or death be extremely careful while handling various parts of the machine. They are extremely heavy and hands, fingers, feet and other body parts could be crushed or pinched between tractor and implement. • Operate tractor controls from tractor seat only. • Do not stand between tractor and implement when tractor is in gear. • Make sure parking brake is engaged before going between tractor and implement. • Stand clear of machine when in operation or when it is being raised or lowered. • Do not operate near the people. Debris can be thrown a long distance.

5	D1005	<p>Warning - Transport Safely</p> <ul style="list-style-type: none"> • Do not exceed maximum transport speed. Exceeding this speed may result in loss of control during transport or braking and result in serious injury or death. • Transport only with a properly ballasted tractor and Reduce speed when cornering or on speed terrain 	
6	D1055	<p>Warning – Safety cover</p> <ul style="list-style-type: none"> • Do not remove this safety cover 	
7	D1056	<p>WARNING</p> <ul style="list-style-type: none"> • Do not stand on the machine 	
8	D1057	<p>LIFTING POINT</p> <ul style="list-style-type: none"> • Lift the machine from lifting point only 	
9	D1024	<p>Optimum PTO speed</p> <ul style="list-style-type: none"> • 540 RPM or 1000 RPM 	

5-PREPARING THE TRACTOR

5.1 Use Your Tractor Operator's Manual



Note: Ensure the tractor you are using is suitably rated for the implement. See technical specification

- Always refer to YOUR tractor operator's manual for specific detailed information regarding operation of YOUR equipment.
- The following tractor related information uses tractors to illustrate preparation, attachment and operational procedures.
- For information specific to your tractor, please refer to your tractor manual.

5.2 Front Counterweight



CAUTION: The front counterweight may not be able to maintain tractor stability if the tractor is driven at excessive speed on rough ground with the implement raised. Drive slowly and carefully in these conditions.

A minimum of 20 % of tractor and implement weight must be on the tractor front wheels. Install the appropriate amount of weight on the tractor front end. The weight may be attained with a front wheels weight, ballast in the tires or front tractor weight. For more detail see the tractor operator manual.

6-PREPARING THE IMPLEMENT

- Tighten all bolts and nuts. See the bolt torque tables in the maintenance section.
- Before starting the implement check that the machine is perfectly in order, that the lubricants are at the correct level and all parts subjected to wear and deterioration are fully efficient.
- Replace any damaged guards

7-ATTACHING AND DETACHING THE IMPLEMENT

7.1 Refer to your Tractor Operator's Manual

- Always refer to YOUR tractor operator's manual for specific detailed information regarding operation of YOUR equipment.
- Following tractor related information uses tractors to illustrate preparation, attachment and operational procedures.
- Use your tractor manual for detailed information, as procedures will vary by equipment

7.2 Attaching implement to the Tractor

Implement can be attached to the suitable category tractor.
Follow below procedure for attaching the implement to the tractor



Warning: If you have not attached or detached an implement before, please seek assistance. Failure to do so may result in major injury to operator and severe damage to equipment and tractor.

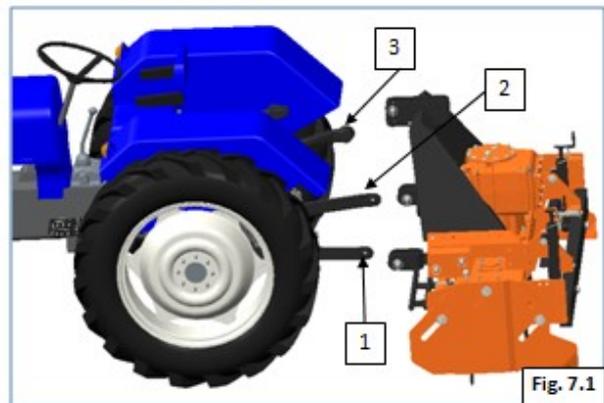


Caution:

Implement should always be park on level ground when attaching and disconnecting from tractor.

Before attaching equipment to the tractor, check for any accessories already fitted to the tractor like drawbar, quick hitch etc. Failure to remove these hindrances may restrict the proper function of the tractor and cause damage to the equipment or injury to operator. If required remove all accessories before attaching equipment.

1. Bring the tractor back and insert LH lower link (1) of the tractor to the corresponding hitch pin of the equipment and lock it with the help of the clip.
2. Similarly attach RH lower link (2) of the tractor to the corresponding hitch pin of the implement.
3. Attach top link (3) of tractor to top hitch point of the equipment. Adjust length of top link if required to reach and align to the required hole on the top hitch point.
4. Make sure implement is level by adjusting the tractors lower linkage arms.



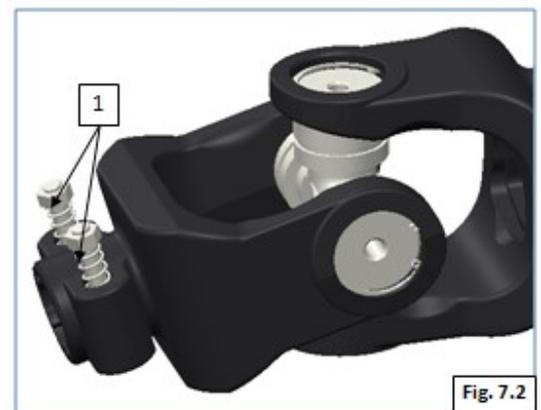
7.3 Universal PTO shaft Attachment



Warning: Length of PTO shaft is very important and required length varies from tractor to tractor. Please read the section Universal PTO shaft length adjustment and make sure your shaft is the correct length for the tractor being used.

To attach the PTO shaft at the tractor end you will need to compress the spring pin (1) in and slide in onto the output shaft of the tractor. To lock the shaft onto the shaft the pin must lock into the angular groove on the tractors output shaft. Slide the shaft on until the pin returns to its original extended position and check that the shaft (give it a push and a pull) cannot slide off.

At the other end (implement end) you will need to fit the clutch end of the PTO shaft. Most clutch setups have two (2) bolts. Remove the bolts and slide the clutch onto the input shaft of the implement. Line up the bolt holes in the



clutch with the angular groove in the input shaft and refit bolt. Tighten bolts as per the Torque Table in this manual.

NT – You may need to remove the Input Shaft Cover to make it easier to fit the clutch. Please ensure that this cover is replaced. NEVER operate this implement without the Input Shaft Cover fitted.

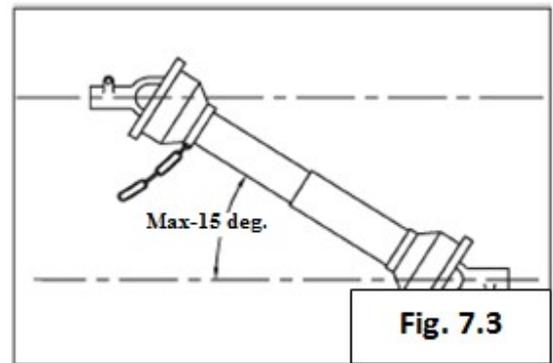


Note: The angle of a PTO shaft must not exceed 15°. (Fig. 7.3)

7.4 Detaching Implement from the Tractor

Detaching the equipment from tractor is reverse procedure of attaching the equipment.

- Lower the implement to the ground and lower the support stand (if fitted).
- Remove PTO shaft, followed by top link, then LH lower link and RH lower link of tractor.



7.5 Universal PTO Shaft Length Adjustment



IMPORTANT:

- The PTO shaft must have protective covers fitted.
- Replace any damaged cover immediately.
- NEVER operate a PTO shaft with damaged or missing covers.
- NEVER have the tractor engine running when connecting or disconnecting PTO shaft.
- There is NO reason anyone needs to be near the PTO shaft while it is operational.

Attention: The universal PTO shaft supplied, with the machine, is of standard length. Therefore it is the OPERATORS RESPONSIBILITY to check and modify (if required) the PTO shaft for their situation to ensure it is the correct length.

Make sure the PTO shaft length has been checked to accommodate all the different positions (working and transport) of the implement.

Remember to check this for EVERY different tractor that you fit the implement too.

If the PTO shaft is too long it might bend the PTO shaft, damage the implement gearbox and in extreme cases may even damage the internal mechanics of the tractor.

Each PTO shaft manufacturer provides instructions for calculating the required length of the PTO shaft. If there are instructions with the PTO supplied, it is our suggestion that you follow those instructions.

If no instructions have been provided please contact the place of purchase and they will be able to provide you with the information required.

If it is outside business hours, please refer to YouTube... “How to measure and cut a PTO Shaft”.

8-TRANSPORTING

8.1 Transport Safely



CAUTION: When transporting on a public road or highway it is the operators responsibility to comply with the relevant State and Federal laws and ensure they strictly adhere to all road traffic regulations in force in their particular state. .

Contact with electrical cables can cause severe injury or death. When transporting or operating the machine, make sure to avoid contact with electrical lines.

When transporting the implement, always travel at a speed that allows adequate control of steering and stopping.



CAUTION: When transporting the implement on a smooth surface road, do not operate the tractor at more than 20 km/h (12 mph). Reduce speed considerably when traveling over uneven ground. Make sure there is no one near the implement.

Once the implement is in the transport position it is a good idea to measure the depth of the implement (i.e. how far it is out from the back of the tractor) so you know how much room you have when turning corners.

Be aware of width and height limits to avoid collisions with bridges and other vehicles and we advise operators to comply with the following recommendations:

- Use tractor with sufficient capacity to maintain control. Install adequate ballast on the tractor.
- Ensure ROBS is securely locked into place and that you are wearing your seatbelt.
- Engage a lower gear when going down steep hills or grades; never coast down hills.
- Always use warning lights (day and night) when operating near or on public roads and ensure reflectors are clean and visible.
- Remember you are a slow moving vehicle and take appropriate action to prevent collisions with other road users.
- Be respectful of others. Frequently check for traffic and use indicators.
- Stopping distance increases depending on speed, weight of the implement and weather/road conditions. Observe the recommended maximum travel speeds or if in doubt travel at a slower speed. NEVER travel faster than the max. recommended 20 km/h (12 mph).
- Be especially careful when transporting the machine in adverse conditions (weather or terrain), when turning and when operating on slopes.

8.2 Transporting

IMPORTANT: Always disengage PTO before raising the implement to transport position.



CAUTION: When travelling on public roads whether at night or during the day, use accessory light and devices for adequate warning for operators of other vehicles.

- When raising the machine to the transport position, be sure that PTO shaft does not contact with tractor or machine.

- Set a stop so the max. height on the tractors linkage control only allows the implements blades to be no more than 30 cm off the ground to prevent damage to the PTO shaft.
- Be sure to tractor ground speed when turning and leave enough clearance so the implement does not contact obstacles such as building, trees and fences.
- Select a safe level ground speed when transporting from one area to another. When travelling on roadways, transport in such a way that faster moving vehicles may pass you safely.
- When travelling on rough or hilly terrain, shift tractor to lower speed.

9-OPERATING THE IMPLEMENT

9.1 Usage

The Power Harrow is specially designed for primary tillage. It can till, break up clumps and ensure the worked ground behind is level, in one pass. It is also useful for converting barren land into cultivable land.

The uses of Power Harrow for the purposes other than mentioned above are not recommended and failures under such conditions will not be covered under warranty even if the product is in warranty period.

9.2 Field Operation

Before using the implement the following should be performed:

- Check oil level in gearbox and central transmission.
- Check that all plugs have been replaced properly in the gearbox and central transmission.
- Ensure all blades, bolts and nuts are tight.
- Check all guards and shields are in place and free of damage. Replace if damaged.
- Apply grease to all grease points. Remember to grease the PTO as well.
- Clear the area of rocks, branches and any objects that may cause injury or damage.
- Tall grass and weeds should be mowed before the use of a power harrow.
- Operate implement and tractor at the same PTO RPM.

9.3 Parking

The following steps should be done when preparing to store the implement or unhitch it from the tractor.

- Park the implement on level and fined ground.
- Shut off tractor engine and engage parking brake.
- Unhitch from tractor.
- Remove PTO shaft.

9.4 Starting Operation

- Attach the implement to the tractor as per the procedure given. See section “Attaching and Detaching Implement”.
- Make sure the PTO shaft is locked properly into the angular groove(s).
- Rest the implement on ground and engage tractor PTO.

- Do not engage PTO at full throttle.
- Adjust throttle to get 540/1000 PTO RPM.
- Operate the tractor and check the RPM drop. It should be around 200 RPM.
- It will depend on ground conditions but in our experience the optimum performance of the Power Harrow is achieved when the tractor is operating at 2.5 to 3.0 kmph.
- Implement should be operated with levelling bar properly leveled in dry soil tilling.
- Do not engage the PTO to the implement when the tractor is at full throttle.

10-ADJUSTMENTS

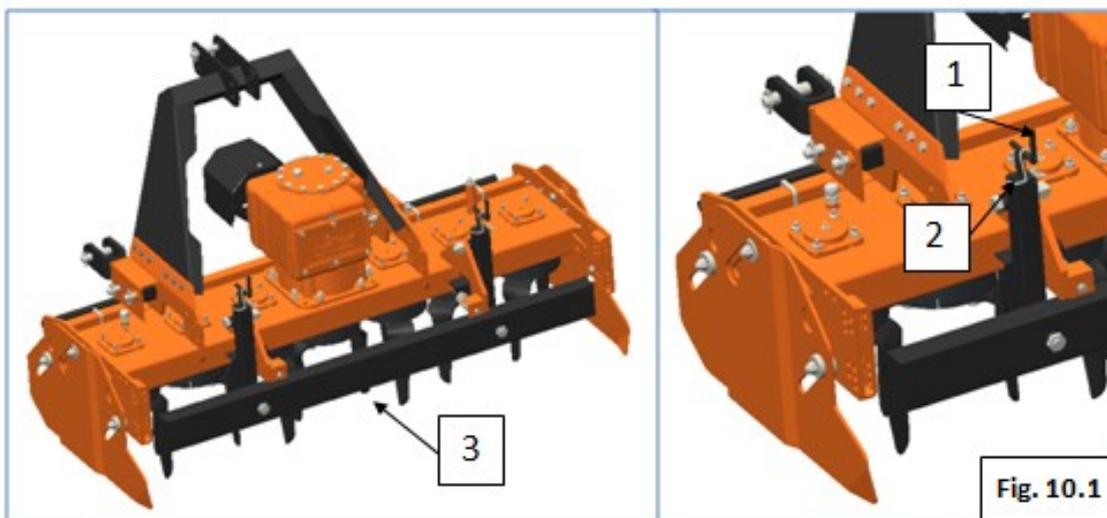
10.1 Levelling Bar Adjustment

IMPORTANT: Be sure both skids are adjusted to the same height.

- Put the implement on the level ground.
- Unlock the levelling bar adjusting handle (1) by pulling the hook (2) away from its position.
- Rotate the handle in clockwise direction till the required position of the levelling bar (3) has been reached.
- Lock the handle with the hook.



Note: Rotate both the handle in same amount so that the levelling bar should be in horizontal position.



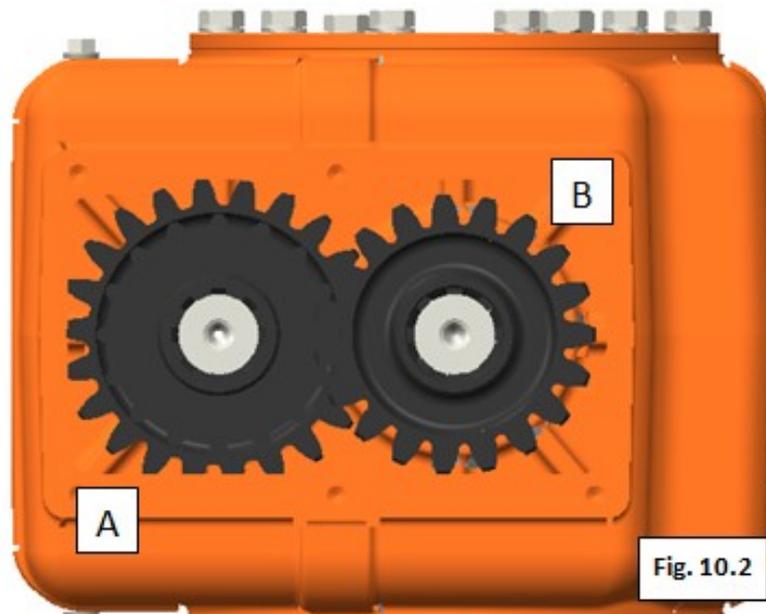
10.2 Multi Speed Gear Drive Adjustment

This implement has been manufactured with a gearbox that has a pair of gears. It is possible to achieve two (2) different rotor speeds by interchanging these gears.

If an extra set of gears was not provided with the gearbox then simply interchange the position of the two (2) gears.

To carry out this operation:

- Make sure that the gearbox is cool enough to work in safety without scorching the hands. Wear adequate gloves if necessary.
- Unscrew its bolts and remove the rear cover of the gearbox.
Watch out: oil will come out.
We suggest leaning the implement slightly forward providing it is securely supported.
- Remove the two gears (A & B) from the shaft and invert (swap) their positions.



Note: The manufacturer does offer different gear combinations as optional extra. If you require a customized rotor speed please consult your nearest dealer so further information can be obtained.



Note: If you end up with a couple of sets of gears please make sure you keep a record so you only use the matching gears. Some gears are not interchanged.

OPTIMUM PERFORMANCE DEPENDS ON THE TWO FACTORS

- 1) Ground speed of the tractor.
- 2) Rotational speed of the blade.

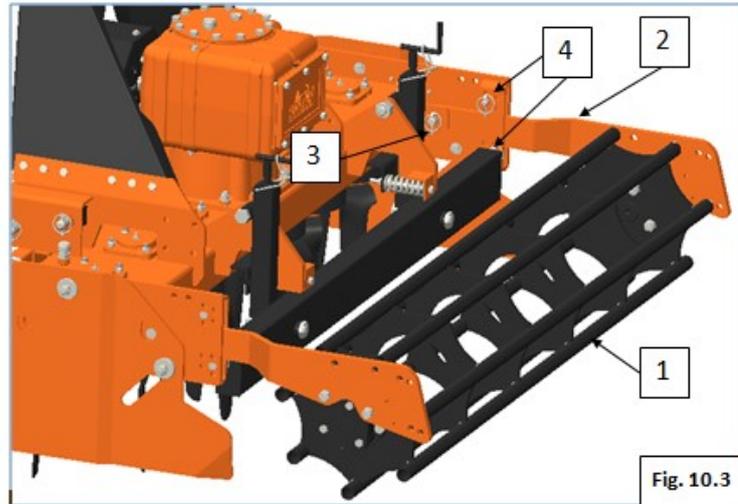
The faster the blades rotate, the finer the soil will be.

10.3 Depth Adjustment

The working depth of the implement is determined by the lowest pivot point of the roller attached (1).

The depth is controlled by the position of roller mounting plates (2).

This mounting plate is hinged with the help of pin (3) and lock with the help of clip.



The positioned of roller is maintained by placing the pins (4) in the desired hole on the plate and locking it is place with the clips.

11-LUBRICATION AND MAINTENANCE

11.1 Safe Lubrication and Maintenance of the Machine



CAUTION: To avoid serious injuries or death from unexpected machine movement, make sure the machine is on a level surface before performing any maintenance work. Lower the machine to the ground or is raising the machine, make sure it is secure on stands that are rated for the weight of the machine before commencing maintenance work. If the machine is connected to the tractor, apply the park brake and/or place the transmission in PARK, shut off the engine and remove the key.

11.2 Lubrication and Maintenance Procedures



CAUTION: Do not clean, lubricate or adjust the implement while it is moving.

IMPORTANT: The recommended maintenance intervals are based on normal operating conditions. In severe or unusual conditions it may be necessary to lubricate more frequently.

Perform the lubrication and maintenance procedures indicated in this section every three (3) months:

- Clean the grease nipples before using a grease gun.
- Replace any missing or damaged grease fittings immediately.
- If the new grease nipple is not transferring grease into the machine, remove the grease nipple and check adjacent parts for failures.
-

- Lubricate the implement as per the schedules outlined in:

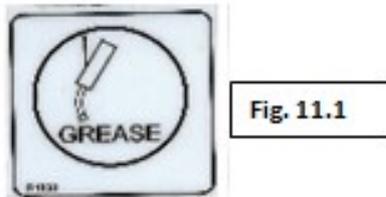
- i. **11.4 Lubrication of Implement +**
- ii. **11.5 PTO Shaft**
- iii. **11.6 Greasing Point**

Failure to lubricate may result in failures as well as loss of time and money.

11.3 Lubrication Symbols

Lubricate with grease at the hourly intervals indicated on symbol.

Lubricate with SAE140/CL140 oil at hourly interval indicated on symbol.



11.4 Lubrication of Implement



CAUTION: Before greasing, maintaining or adjusting the implement, switch off the tractor PTO and engine and wait for all parts to come to a complete stop.
In the case of gearboxes and moving parts, wait for parts and fluids to cool.

Daily or Every 8 Hours of Operation

1. Grease the PTO shaft cross.
It is essential that the lubricant is forced out of all four universal cups.
Grease all other parts indicated in this manual book.
2. Separate the two halves of the PTO shaft clean and re-grease.
3. Check all blades and blade bolts. Replace are damaged or bent blades.
4. Check all hardware (bolts, pins, clips, etc.) are tighten and in good condition.

Weekly or Every 50 Hours of Operation

1. Check the oil level in the gearbox with the machine positioned horizontally.
2. Check the oil level in the central transmission case.
3. Grease the PTO shaft cross.
4. It is essential that the lubricant is forced out of all four universal cups.
5. Grease all other parts indicated in this manual book.
6. Separate the two halves of the PTO shaft clean and re-grease.
7. Check all blades and blade bolts. Replace are damaged or bent blades.
8. Check all hardware (bolts, pins, clips, etc.) are tighten and in good condition.

Every 200 Hours Work

1. Change oil in the gearbox. Refill with SAE 140 / EP 140 gear oil.
2. Change oil in the central transmission case. Refill with SAE 140 / EP 140 gear oil.

Every 400 Hours Work

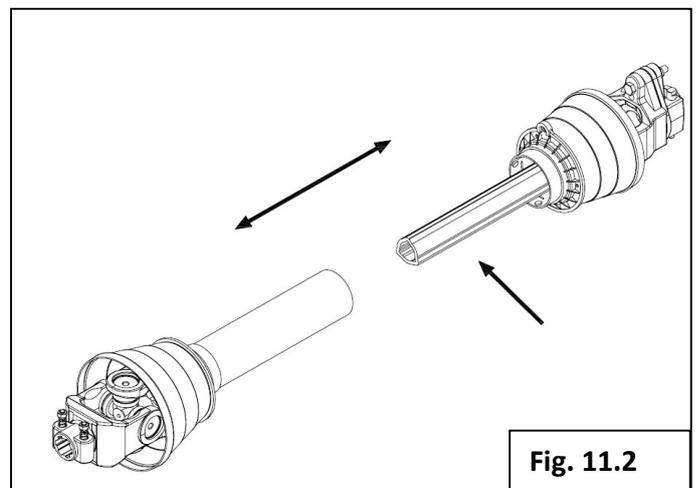
Carefully dismantle, clean and re-grease (with new grease) any and all parts with a grease nipple.

11.5 PTO Shaft

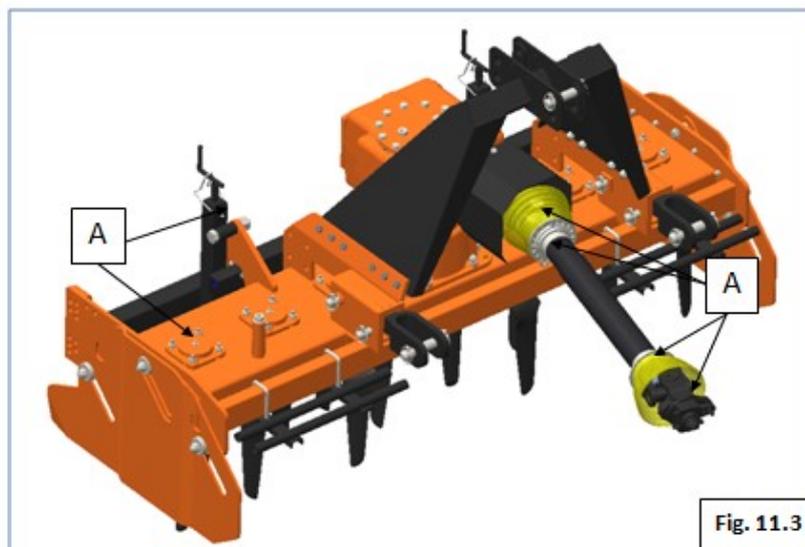
While the ‘crosses’ and ‘cups’ of a PTO shaft are easy to assess and grease many operators forget to grease the male and female tube.

Without grease these tubes can bind (when the implement is raised and lowered) and over time this binding put excessive loads through the implements input shaft and/or the tractors output shaft.

To prevent damage to these shafts (which are costly to repair/replace) operators **MUST** separate the PTO shaft (Fig. 11.2) and grease the telescopic tubes on a daily basis or at a maximum - every 8 hours of operation.



11.6 Greasing Point



A—Greasing Point

11.7 Practice Safe Maintenance

- Understand service procedure before commencing work and keep area clean and dry.
- Never lubricate, service, or adjust machine while parts or machine is moving.
- Keep hands, feet, and clothing from moving parts.
- Disengage all power and wait for all parts to come to a complete stop and are cool.
- Lower equipment to the ground. Stop the engine. Remove the key. Allow Oil to cool. Securely support machine and/or any parts that have been raised for service work.
- Keep all parts in good condition and properly installed. Fix or replace any damaged parts immediately. Replace worn parts. Remove any buildup of grease, oil, or debris.

11.8 Metric Bolt and screw torque values								
Bolt or Screw size	class 4.8		class 8.8 or 9.8		class 10.9		class 12.9	
	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry
	Nm	Nm	Nm	Nm	Nm	Nm	Nm	Nm
M6	4.7	6	8.9	11.3	13	16.5	15.5	19.5
M8	11.5	14.5	22	27.5	32	40	37	47
M10	23	29	43	55	63	80	75	95
M12	40	50	75	95	110	140	130	165
M14	63	80	120	150	175	220	205	260
M16	100	125	190	240	275	350	320	400
M18	135	170	265	330	375	475	440	560
M20	190	245	375	475	530	675	625	790
M22	265	330	510	650	725	920	850	1080
M24	330	425	650	820	920	1150	1080	1350
M27	490	625	950	1200	1350	1700	1580	2000
M30	660	850	1290	1630	1850	2300	2140	2700
M33	900	1150	1750	2200	2500	3150	2900	3700
M36	1150	1450	2250	2850	3200	4050	3750	4750

 **Note:** Torque values listed are for general use only, based on the strength of the bolt or screw.

Do not use these values if a different torque value or tightening procedure is given for a specific application.

11.9 Maintenance of Implement



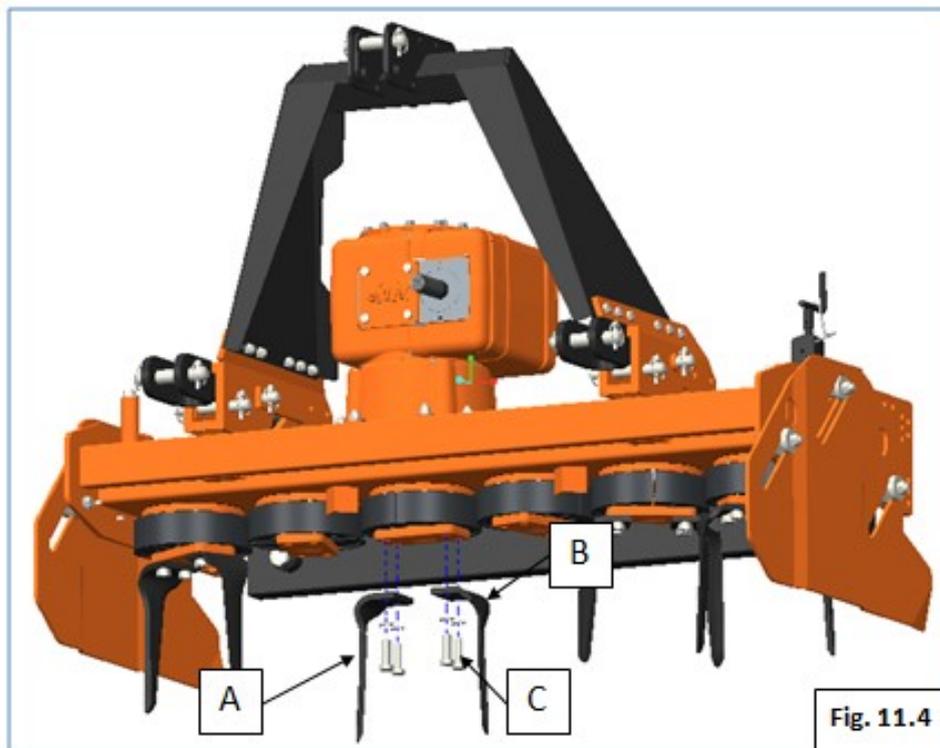
CAUTION: For safety reasons, each maintenance operation must be performed with the tractor's PTO disengaged; the implement lowered completely to the ground or on rated safety stands, tractor engine shut off and ignition key removed.

Proper servicing and adjustment is a requirement if you expect a long life of any piece of farm machinery. With careful and systematic inspections, you can avoid costly maintenance, lost time and expensive repairs.

After using your implement for several hours, ensure all the bolts are tight.

Replace any worn, damaged or illegible safety labels by obtaining new labels from your dealer.

11.10 Blade Replacement



A-Blade (RH)

B-Blade (LH)

C-Bolt

IMPORTANT: Always install blade with cutting edge facing direction of rotor shaft rotation. When ordering replacement blades, be sure to order both right (A) and left (B) hand blades.

1. Remove bolts from flange to be replaced.
2. Remove blade.
3. Install new blade of same orientation as removed.
4. Replace bolts and tighten to proper torque.

IMPORTANT: Replace blades with genuine blades available at dealership.

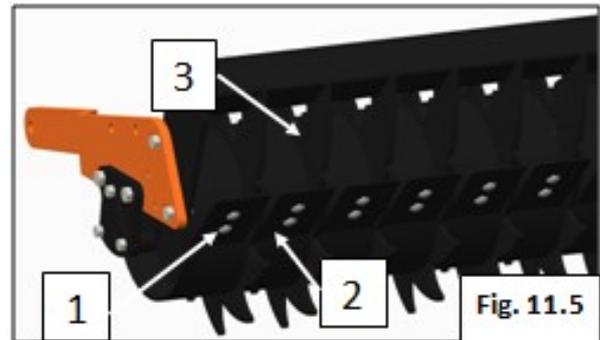


NOTE: Note orientation and type of blade i.e. L.H. or R.H.

11.11 Packer Roller scrapper blade adjustment & replacement

Whenever the scrapper blade has worn out or it is damaged it must be replaced with a new blade. To change these blades please follow the following steps:

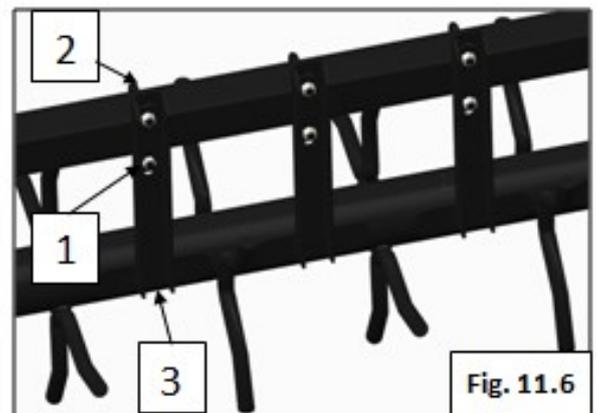
- Unbolt the nut and remove the bolt (1).
- Remove the scrapper blade (2) and replaced with the new blade
- Rotate the roller pipe (3) to ensure that it does not touch the scrapper blade
- Check that the clearance between scrapper blade and the pipe of roller is 5-10 mm.
- If not then move the blade through the slots so that the proper clearance is achieved.
- Fully tightened the bolts.



11.12 Spike Roller scrapper blade adjustment & replacement

Whenever the scrapper blade has worn out or it is damaged it must be replaced with a new blade. To change these blades please follow the following steps:

- Unbolt the nut (1) and remove the U clamp (2).
- Remove the scrapper blade and replaced with a new blade (3).
- Rotate the roller pipe to ensure that it does not touch the scrapper blade
- Check that the clearance between scrapper blade and the pipe of roller is 10-20 mm.
- If not then move the blade through the slots so that the proper clearance is achieved.
- Fully tightened the U clamps.



11.13 Storage

At the end of a season or if the implement is not going to be used for a period of time it is good practice to clean off any dirt or grease that may have accumulated on any of the moving parts. Things to be inspected are checked are:

- Check the blades for wear and replace as required.
- Inspect the implement for loose, damaged or worn hardware/working parts. Adjust and/or replace as required.
- Touch-up any areas of worn or damaged paint (to prevent rust).
- Drain gearbox and central transmission of oil and then refill. NEVER leave you implement stored for a long period WITHOUT oil in the gearbox or central transmission.
- Store implement under cover OR cover with a plastic sheet in a clean, dry place.

12-TROUBLESHOOTING

Symptom	Cause	Solution
Gearbox over heating	Low Lubricant	Fill to proper level.
	Improper Lubricant	Replace with proper lubricant
Gearbox noisy	New and worn out gear	Run in or change gear
	Worn Bearings	Replace bearings.
	Low oil in gear box	Check level and add oil
Gearbox leakage	Damaged oil seal	Replace seal
	Bent Shaft	Replace shaft.
	Oil level too high	Drain oil to proper level.
	Gasket Damaged	Replace gasket.
PTO vibrates	Worn universal joint	Replace universal joint.
	Implement lift too high	Lower Implement.
	Bent PTO driveline	Replace PTO driveline.
Soil Clogging the blade	Improper blade installation	Install correctly.
	Tractor speed too fast	Reduce ground speed.
	Soil too wet	Wait until soil dries.
Rotor not rotating	PTO not engaged	Engage PTO.
	Broken drive chain	Repair drive chain.
	Driveline shear bolt sheared	Use of genuine Shear bolt in case Damage.
Not leaving the soil level.	Levelling bar not in proper position	Keep it horizontal with spring properly tensioned.
Rear tractor wheels	Tractor not taking load	Reduce depth of operation

slipping		Reduce the working width by reducing the number of blades from one side.
The earth is too finely broken up	Levelling bar too low	Raise the levelling bar
	Forward speed is too slow	Reduce the forward speed of tractor
The earth is not broken up finely enough	Levelling bar raised too high	Lower the levelling bar
	Tractor forward speed is more	Reduce the tractor forward speed

13-WARRANTY

Tirth Agro Technology Pvt. Ltd. offer the following warranty to the purchaser of COSMO BULLY POWER HARROW mentioned herein above subject to the conditions set out herein after provided the COSMO BULLY POWER HARROW shall be in the possession of and used by such purchaser as from the date of delivery.

Tirth Agro Technology Pvt. Ltd. warrants its products for a period of twelve (12) months against defective parts. This warranty shall not apply to implements or parts that have been subjected to negligence, of accident, or that have been altered or repaired or used with non-genuine parts.

CONDITIONS

If you wish to make a warranty claim you must first contact the supplier of your goods to begin the claim process.

The following are the warranty terms and conditions for new goods sold in Australia by Farm Implements P/L in conjunction with the manufacture Tirth Agro Technology Pvt. Ltd (“We”, “Our” or “Us”), both of 16 Cahill Street, Dandenong, Victoria, Australia, 3175.

1. To the extent that any goods or services supplied by Us are supplied to a ‘consumer’ as defined in the Australian Consumer Law, We will comply with any applicable consumer guarantees and the following statement will apply: “Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.”
2. ‘Australian Consumer Law’ means Schedule 2 of the Competition and Consumer Act 2010 (Cth).
3. The warranties provided in this document are in addition to any other rights or remedies available to you under the law, and do not limit the consumer guarantees for ‘consumers’ under the Australian Consumer Law.
4. Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair the goods.
5. Any warranty claim that is the result of operator abuse, neglect or unauthorised modifications being made to the good will not be considered valid, subject to the Australian Consumer Laws. The warranty does not cover costs of claiming under this warranty; depreciation, damage, malfunction or failure caused by normal wear and tear; lack of reasonable maintenance or improper servicing; failure to follow operating instructions; misuse or lack of proper protection during storage. The expected normal working conditions and maintenance requirements are outlined in the relevant operator’s manual.
6. All new Implements are provided with a 12 month comprehensive warranty from the date of invoice against faulty workmanship or materials, under normal working conditions and service, as outlined in the relevant operational manual for the particular good. Your warranty

for those goods will be considered void if any damage to the implement is caused by operator abuse, neglect, or if any unauthorised modifications have been made.

7. If you wish to make a warranty claim, you must immediately report the defect to the supplier within the warranty or consumer guarantee claim period, including a written statement of your claim, along with photos of the current condition of the goods by mail (or if possible, email) to the address of the place from which you purchased the good. You will be required to present valid proof of purchase, and at your expense promptly provide the goods to the supplier immediately after notification of a service issue.
8. Please note that We require an assessment of the condition of the goods to be conducted by either the supplier, Us or the manufacturer, as well as obtaining a history of use of the good, before We can determine whether a consumer guarantee or manufacturer's warranty is applicable. We are not responsible for any transportation cost incurred in the repair or replacement of parts not covered by the warranty.
9. To the maximum extent permitted by law, and except in circumstances where the consumer guarantee provisions under the Australian Consumer Law apply and are inconsistent with the following, Our liability for the supply of the goods is limited, at Our discretion, to 1) replacement of the goods or the supply of equivalent goods; 2) repair of the goods; 3) payment of the cost of replacing the goods or acquiring equivalent goods; or 4) payment of the cost of having the goods repaired.
10. You acknowledge that use of the goods is inherently dangerous and agree that to the maximum extent permitted by law, We are not liable in any event for consequential loss, damage or injury, including loss of crops, loss of profits, or personal injury or death howsoever caused.
11. Farm Implements Dealers have no authority to make any representation, promise or admission on behalf of Us or to modify the terms or limitations of these Warranty Conditions in any way. Nothing in these Warranty Conditions constitutes a partnership between Us and any Farm Implements Dealer, or constitutes any Authorised Dealer as an agent or employee of Ours for any purpose at all. Our Dealers have no authority or power to bind Us, to contract in the name of Farm Implements P/L or to create a liability against Us in any way or for any purpose at all, including but not limited to representations regarding performance or fitness for any purpose of the goods.

If you have specific queries regarding the warranties or consumer guarantees provided by Farm Implements P/L in conjunction with the manufacture Tirth Agro Technology Pvt. Ltd please send details of your claim to Our attention at 16 Cahill Street, Dandenong, Victoria, Australia, 3175, or via email at kanga@farmimplements.com.au or phone 03-9706-5166.

THIS CONTRACT WILL BE INEFFECTIVE AND INOPERATIVE IF:

- a. The COSMO BULLY ROTARY HOE has not been delivered, assembled, started and put into operation by the company or it's Authorized Representative.
- b. The warranty card has not been returned within 30 days of date of purchase.

- c. The COSMO BULLY POWER HARROW parts thereof is subjected to neglect, fire, flood or other acts of God or if in the company's opinion any damage has caused to the COSMO BULLY POWER HARROW in transportation.
- d. The original numbers are removed, obliterated or altered from the unit.
- e. Any attempt is made to have the repairs executed by a person or persons, other than the company or its authorized representative.
- f. Any defect is not informed immediately to the company or its authorized representative, any alteration in warranty card is made.
- g. Any change in the location of the COSMO BULLY POWER HARROW or in its ownership during the warranty period must be intimated in writing to the company or its Authorized Representative ten days before the change. Failure to do so will absolve the company from the obligation under this warranty.
- h. Damage to the COSMO BULLY POWER HARROW or any part thereof caused, during shifting or transportation is not covered by this warranty.
- i. This warranty is given in lieu of all other guarantees and condition expressed or implied by law or by any person purporting to act on behalf of the COMPANY and excludes every condition, warranty or guarantee not herein expressly set out.

NT – Parts/materials that are not covered by the warranty are as follows:

1. **Blade**
2. **Universal Joint Cross**
3. **Paint**
4. **Bearing**
5. **Rubber Parts**
6. **Gaskets**
7. **Fasteners**

❖ **WHEN THE WARRANTY BECOMES VOID**

Besides the cases specified in the supply agreement, the warranty shall in any case become void:

- Should there have been a maneuvering error, use of an inadequate safety bolt on the cardan shaft torque limiter or when the cardan shaft clutch has been damaged through improper maintenance.
- When the implement has been used beyond the specified power limit as given in the technical data chart.
- When following repairs made by the customer without authorization from the manufacturer or owing to instillation of spurious spare parts, the machine is subjected to variations and the damage can be ascribed to these variations.
- Whenever the user or anyone else on his behalf applies equipment to the machine that has not been expressly approved by the manufacturer.
- When the user failed to comply with the instructions in this manual book.

14. EC DECLARATION OF CONFORMITY

In accordance with the EC Machinery Directive 2006/42/EC

The company

COSMO S.r.L. in conjunction with **Tirth Agro Technology Pvt. Ltd.**

(An ISO 9001:2008 Certified Company)

National Highway – 27, Nr. Bharudi Toll Plaza,
Gondal Road At.: Bhunava – 360311 Ta. Gondal,
Dist.: Rajkot. State: Gujarat- INDIA.

hereby declares that the machine:

Type: COMSO BULLY Power Harrow
Model: SRP 75 – SRP 300

satisfies the basic safety and health requirements established by European Directive 2006/42/EC.

Harmonized standards used:

EN ISO 12100:2010

Safety of machinery - General principles for design - Risk assessment and risk reduction

EN ISO 4254-1:2009

Agricultural machinery - Safety - Part 1: General requirements

EN ISO 4254-5:2009

Agricultural machinery - Safety - Part 5: Power-driven soil-working machines

Other technical standard used:

ISO 11684:1995

Tractors, machinery for agriculture and forestry, powered lawn and garden equipment -
Safety labels and hazard pictorials - General principles

Rajkot,

Ashwin Gohil / Hasmukh Gohil
Chairman / Managing Director



Manufactured by:

Tirth Agro Technology Pvt. Ltd.
“COSMO BULLY”, Survey No.-108/1,
Plot No. B, NH-27, Nr. Bharudi Toll Plaza,
Bhunava (Village), Taluka: Gondal,
Dist.: Rajkot – 360311,
State: Gujarat- INDIA

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