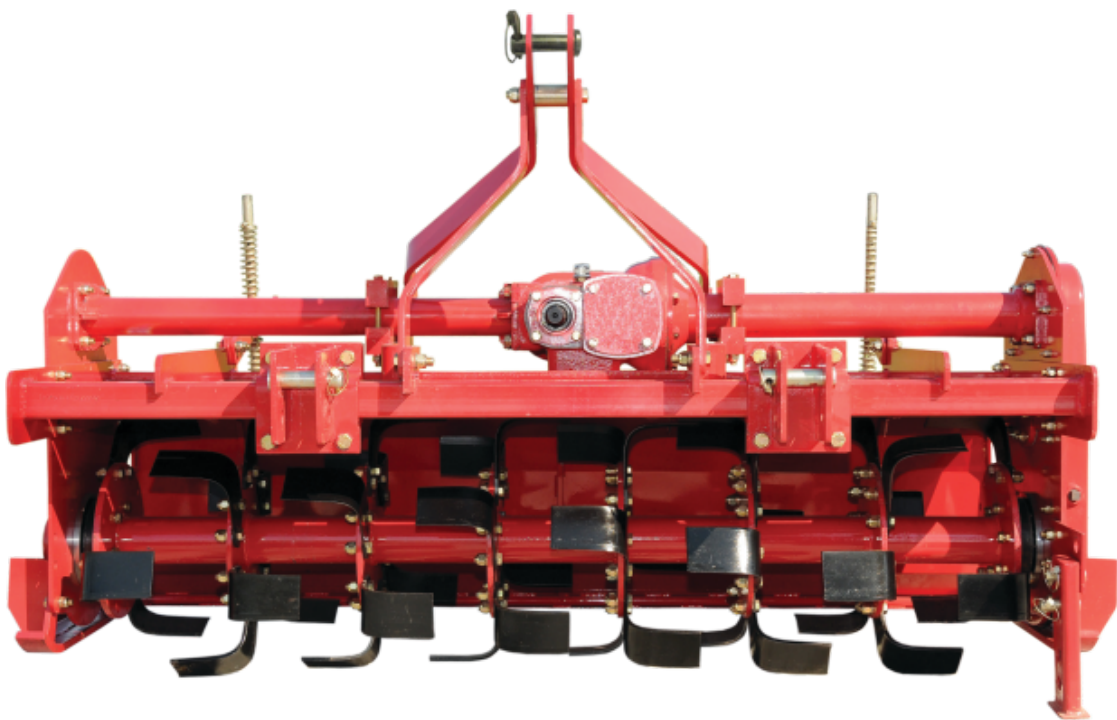
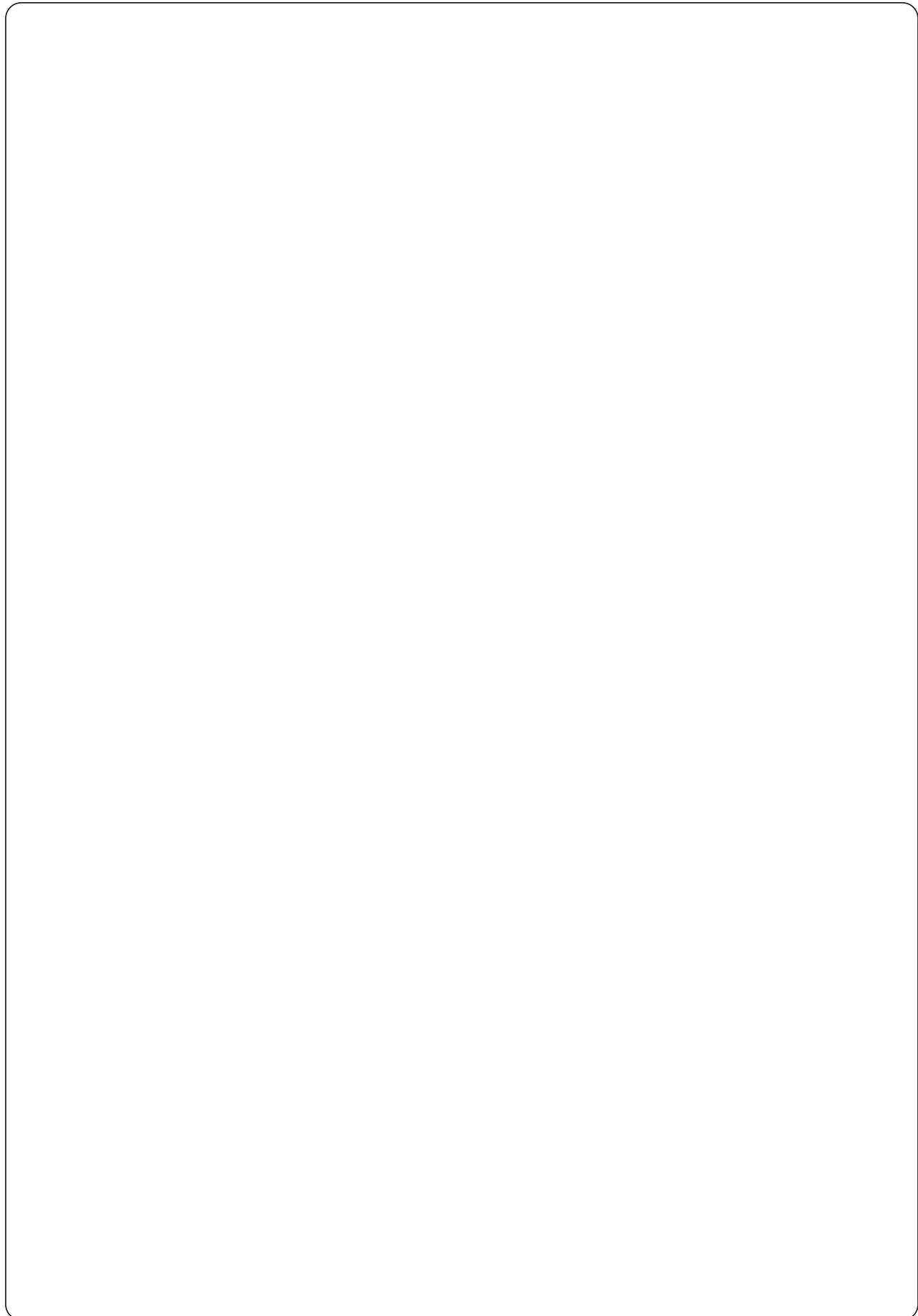
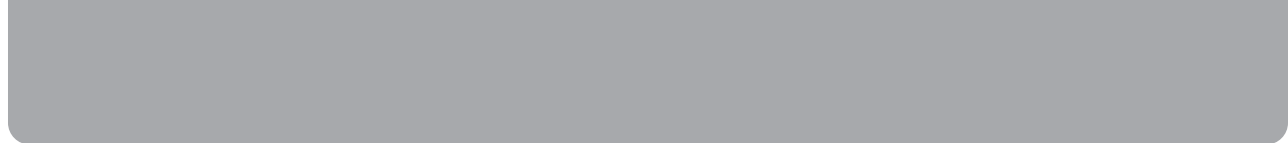


MAHINDRA GYROVATOR



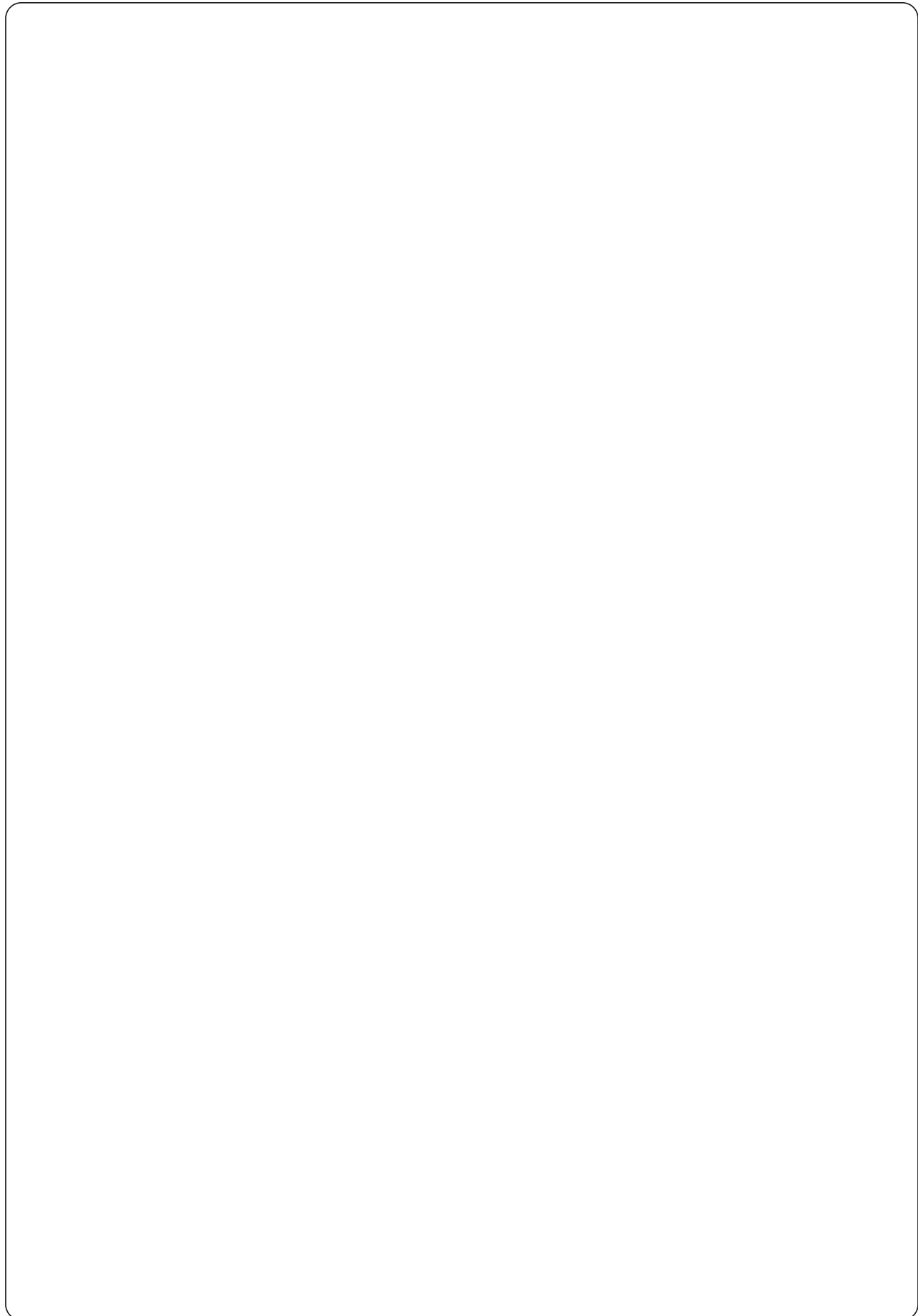
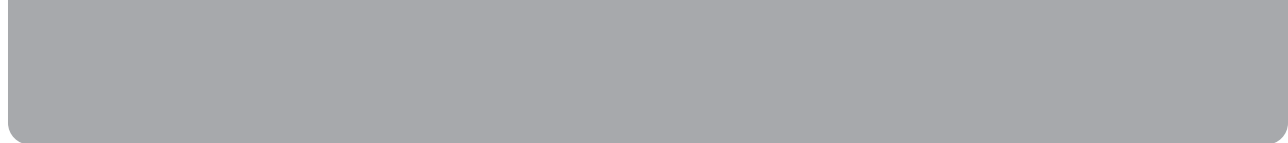
SLX Series
Owner Manual



Congratulations!

We as Mahindra & Mahindra congratulate you for becoming a prestigious customer of Mahindra family by purchasing **MAHINDRA GYROVATOR SLX**. This manual contains important informations on safety, operation & Maintenance. Please read it carefully and review it from time to time. Maintaining your Mahindra Gyrovator according to the schedule given in this manual to help you keep your Gyrovator trouble free. This manual contains the use and maintenance instructions along with the list of the parts supplied as spares for the Gyrovator . This booklet also contains the warranty policy for Mahindra Gyrovator SLX and its acknowledgment forms. The purchaser of this Mahindra Gyrovator SLX shall read and understand all the terms and conditions mentioned under warranty and sign the warranty acknowledgment forms. The purchaser of Mahindra Gyrovator SLX is also entitled for two free services after 50 hrs. and then after 400 hrs of operations for which coupons are already provided in this booklet. The free service has to be carried at our authorized service outlets only.

WELCOME TO MAHINDRA FAMILY.



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1.0 IDENTIFICATION

1.1 TECHNICAL DATA


Each individual machine has an identification plate (A Fig. 1) indicating the following details:

- 1) The Manufacturer's address.
- 2) Machine type.
- 3) Mass / Standard weight.
- 4) Serial number.
- 5) Machine model.
- 6) Year of manufacture.

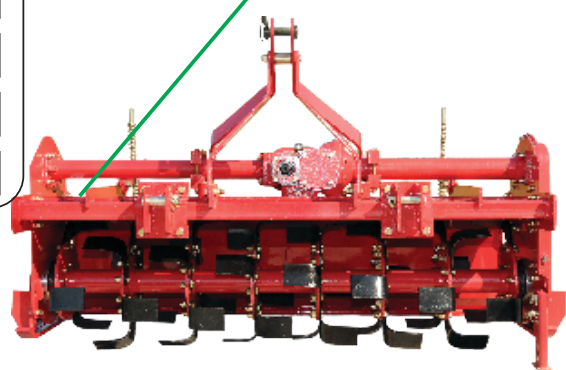
You are advised to note down your data on the form below, along with the date of purchase (7) and the dealer's name (8).

(1)

2. TYPE :	<input style="width: 80%;" type="text"/>
3. MASS :	<input style="width: 80%;" type="text"/>
4. SERIAL NO.:	<input style="width: 80%;" type="text"/>
5. MODEL :	<input style="width: 80%;" type="text"/>
6. YEARS OF MFD.:	<input style="width: 80%;" type="text"/>



The identification plate is black with white text. It reads: 'MAHINDRA & MAHINDRA LIMITED - MUMBAI', 'APPLI TRAC FARM EQUIPMENT SECTOR', 'MADE IN INDIA', and lists fields for TYPE, MASS, SERIAL NO., MODEL, and YEARS OF MFD. with corresponding lines for data entry. A CE mark is visible in the bottom right corner.



A red tractor harrow is shown from a side-on perspective. A green line points from the identification plate to the machine's frame.

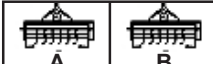
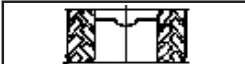



Fig. 1

Intended use of Machine :



1. Machine can be used for seedbed preparation and secondary tillage.
2. Machine can be used for dryland and wetland operation.
3. Machine is effective for puddling due to better churning of soil and less slippage as compared to puddler / disc harrow.

1.0 IDENTIFICATION

1.1 TECHNICAL DATA

MODEL	 A B				 cm	 KW HP		 nr.	 Kg
	cm	inch	cm	inch					
SLX-200	200	78.9	217	85.4	100	41-44	55-60	48	510
SLX-175	177	69.6	194	76.3	88	36-41	50-55	42	468
SLX-150	153	60.4	170	66.9	76	33-36	45-50	36	443

NOTE : Above weights are exclusive of propeller shaft weight. All weight approx to ± 5 kg.

		
A	B	Rotor RPM
17	21	179
18	20	199
20	18	246
21	17	274

MAHINDRA GYROVATOR SLX

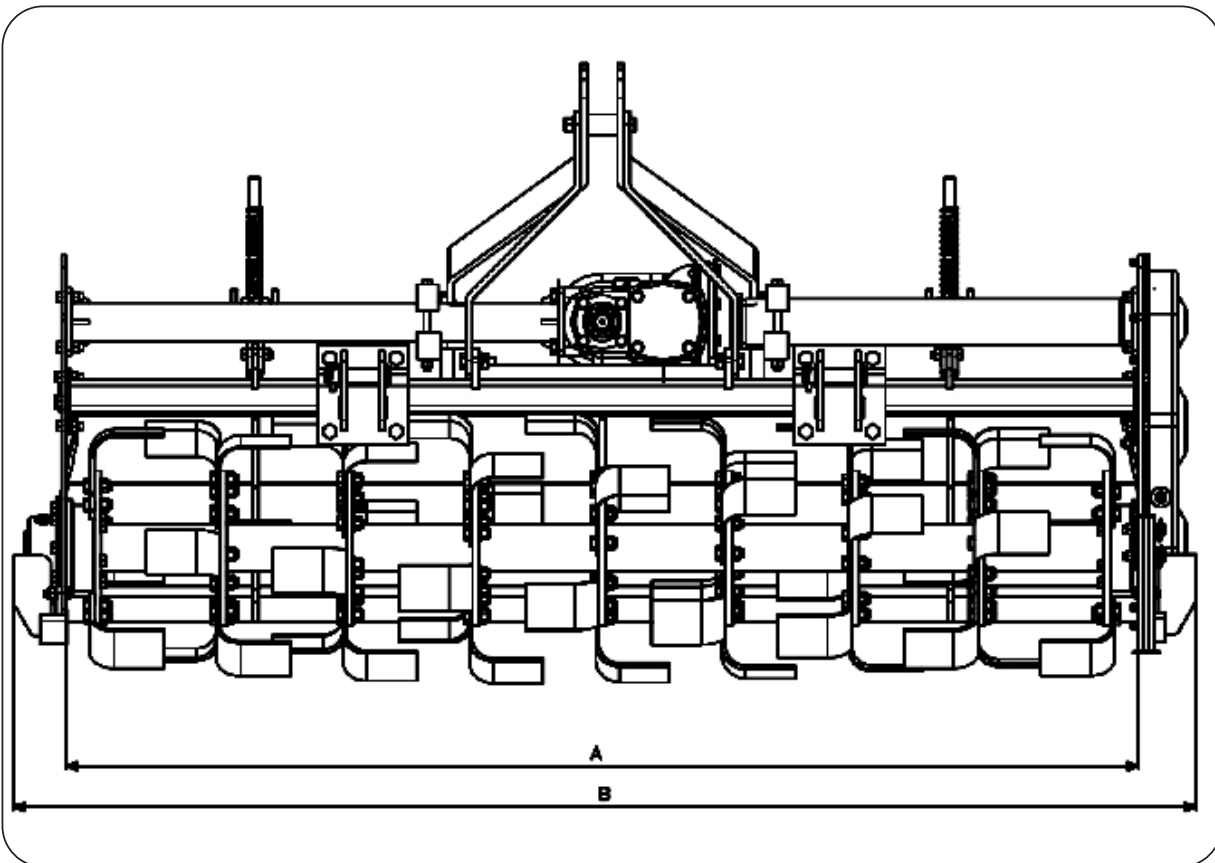


Fig. 2

1.0 IDENTIFICATION

1.1 TECHNICAL DATA

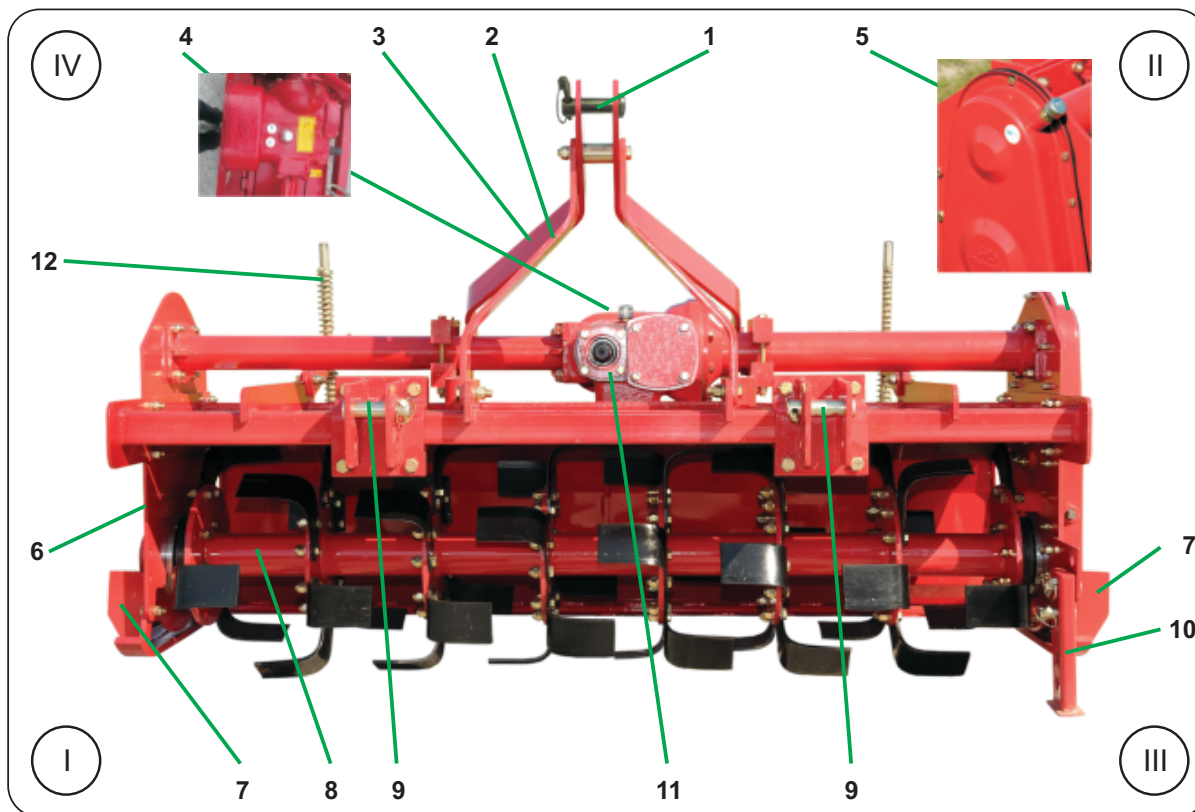


Fig. 3

- | | |
|-----------------------------|----------------------------------------|
| 1) Pin Top Link | 10) Stand |
| 2) Mast Bracket Front | 11) Pic Shaft (Power Input Connection) |
| 3) Lifting stirrup. | 12) Adjuster Rod |
| 4) Main Gearbox. | |
| 5) Side Cover Assembly | |
| 6) Skid Shoe Adjuster Plate | I = Front side |
| 7) Skid Shoe Adjuster | II = Back side / Rear side |
| 8) Rotor Shaft Assembly | III = Left side |
| 9) Lower Link Hitch Pin | IV = Right side |

1.1 TECHNICAL DATA

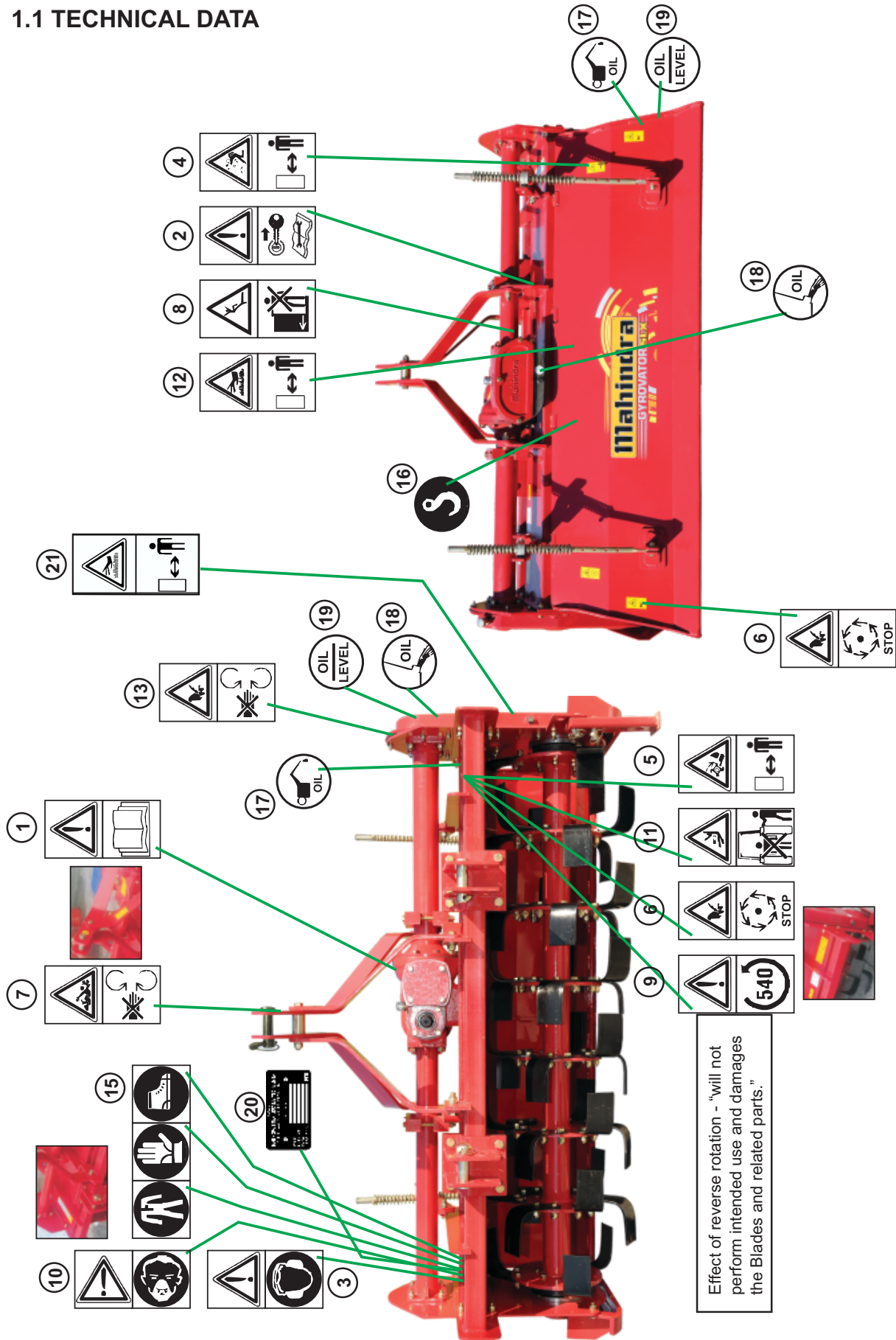


Fig. 4

1.0 IDENTIFICATION

1.2 WARNING SIGNALS

- 1) **Before operating machine**, carefully read the instruction book.
- 2) **Before any operation of maintenance a/o** adjustment, stop, brake the tractor on level ground, lower the machine to the ground and read the instruction book.
- 3) Loud noise. Wear adequate hearing protection, e.g. headphones.

1.3 DANGER SIGNALS

- 4) Danger. Sharp objects could be thrown up. Keep a safe distance from the machine.
- 5) Danger. Risk of injury to the legs. Keep a safe distance from the machine.
- 6) Danger of injury to the hands. Never remove the guards while the parts are mowing. Wait until all moving components have completely stopped.
- 7) Danger. Keep away from the propeller shaft. Keep away from the mowing parts.
- 8) Danger of dropping. Do not climb on to the machine.
- 9) Before engaging the pto, check that the rpm rate is that prescribed. Never exchange the 540 rpm rate for 1000 rpm.
- 10) Risk of inhaling harmful substances. Wear a dust mask if the tractor is used without cab and filters.
- 11) Danger of being crushed.
Do not get between the tractor and the machine.
- 12) Danger of burns. Do not touch these parts during or after use.
- 13) Danger of being crushed. Do not get rear the machine.
- 14) Danger of possible shearing of upper limbs. Keep a safe distance from the machine while it is working.

1.4 INDICATOR SIGNALS

- 15) Wear safety clothing.
- 16) Coupling point for lifting.
- 17) Oil fill plug.
- 18) Oil drain plug.
- 19) Oil level plug.
- 20) Identification Plates.
- 21) Heat Protection Sticker.

1.5 WARRANTY

When the machine is delivered, check that it has not been subjected to damage during transport and that the accessories are in a perfect condition and complete. **ANY CLAIMS FOLLOWING THE RECEIPT OF DAMAGED GOODS SHALL BE PRESENTED IN WRITING WITHIN 8 DAYS FROM RECEIPT OF THE GOODS THEMSELVES FROM YOUR LOCAL DEALER.**

The purchaser may only make claims under guarantee when he has complied with the warranty conditions in the supply contract.

1.6 WHEN THE WARRANTY BECOMES VOID

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

- Should there have been a manoeuvring error, use of an inadequate safety screw (on the propeller shaft).
- When the implement has been used beyond the specified power limit, as given in the technical data chart on page 7.

1.0 IDENTIFICATION

- When, following repairs made by the customer without authorization from the Manufacturer or owing to installation of spurious spare parts, the machine is subjected to variations and the damage can be ascribed to these variations.
- When the user has failed to comply with the instructions in this handbook.

2.0 SAFETY AND ACCIDENT PREVENTING PROVISIONS

Pay great attention to the danger signal where indicated in this handbook.



There are three types of danger signal:

DANGER: This signal warns when serious injuries, death or long-term health risks would be caused by failure to correctly carry out the described operations.

WARNING: This signal warns when serious injuries, death or long-term health risks could be caused by failure to correctly carry out the described operations.

CAUTION: This signal warns when damage to the machine could be caused by failure to carry out the described operations.

In order to complete the various levels of danger, the following describe situations and specific definitions that may directly involve the machine or persons.

- **DANGER ZONE:** any area inside a/o near a machine in which the presence of an exposed person constitutes a risk for the safety and health of that person.
- **EXPOSED PERSON:** Any person who happens to be completely or partially in a danger zone.
- **OPERATOR:** The person/s charged with installing, starting up, adjusting, carrying out maintenance, cleaning, repairing or transporting a machine.
- **USER:** The user is the person or the organization or the firm which has purchased or rented the machine and intends to use it for the purposes it was conceived for.
- **SPECIALIZED PERSONNEL:** Those persons who have been specially trained and qualified to carry out interventions of maintenance or repair requiring a particular knowledge of the machine, its functioning, safety measures, methods of intervention - and who are in a position to recognize the potential dangers when using the machine and are able to avoid them.
- **AUTHORIZED SERVICE CENTER:** The authorized Service Center is a structure legally authorized by the manufacturer which disposes of personnel specialized and qualified to carry out all the operations of assistance, maintenance and repair - even of a certain complexity - found necessary to keep the machine in perfect working order.

Become thoroughly familiar with all the instructions before using the machine. Contact the technicians of the Manufacturer's concessionaires in case of doubt.

The Manufacturer declines all and every responsibility for failure to comply with the safety and accident-prevention regulations described herein.

- 1) Comply with the instructions given by the danger symbols in this handbook and affixed to the machine itself.
- 2) Never ever touch any moving part.
- 3) Operations and adjustments to the implement must always be carried out when the engine is off and the tractor braked.

2.0 SAFETY AND ACCIDENT PREVENTING PROVISIONS

- 4) Disconnect the hydraulic pipes from the tractor taps when the machine is serviced.
- 5) Before proceeding with any work under the machine, make sure that the driveline has been detached from the PTO and secure the machine itself with supports to make sure that it is unable to accidentally drop.
- 6) It is absolutely forbidden for persons without a driving license, inexpert persons or those in precarious health conditions to drive the tractor with the machine mounted.
- 7) Strictly comply with all the recommended accident preventing measures described in this handbook.
- 8) Assembly of a implement on the tractor will shift the weights on the axles. It is therefore advisable to add weights to the front part of the tractor in order to balance the weights on the axles themselves.
- 9) The coupled implement may only be controlled through the propeller shaft complete with the necessary safety devices for overloads and with the guards fixed with the relative latch. Keep away from the propeller shaft while it is turning.
- 10) Before starting the tractor and implement, always check that all safety devices guarding transport and use are in a perfect condition.
- 11) The instruction labels affixed to the machine give useful advice on how to prevent accidents.
- 12) Always comply with the highway code in force in your country when travelling on public roads.
- 13) Transport on roads takes place under the total responsibility of the user, who is obliged to verify the adequacy of the machine to the rules of the road traffic code in force in that country.
Comply with the maximum permissible weight on the axle of the tractor, the total adjustable weight, transport regulations and the highway code.
- 14) Always become familiar with the controls and their operation before starting work.
- 15) Always wear suitable clothing. Never ever wear loose garments or those with edges that could in some way become caught up in rotating parts or moving mechanisms.
- 16) As indicated, couple the implement to a tractor of adequate power and configuration, using a device (lift) conforming to the prescriptions.
- 17) Take the utmost care during the implement coupling and release phases.
- 18) Any accessories for transport must be equipped with adequate signals and guards.
- 19) Never ever leave the driving seat whilst the tractor is moving.
- 20) It is very important to remember that the road holding, steering and braking capacity may be even notably influenced by the presence of a towed or mounted implement.
- 21) Always take care of the centrifugal force exercised by the furthered position of the center of gravity, when turning corners with the implement mounted.
- 22) Before engaging the pto, check that the rpm rate is that prescribed. Never exchange the 540 rpm rate for 1000 rpm.
- 23) It is absolutely forbidden to stand within the operative range of the machine where there are moving parts.

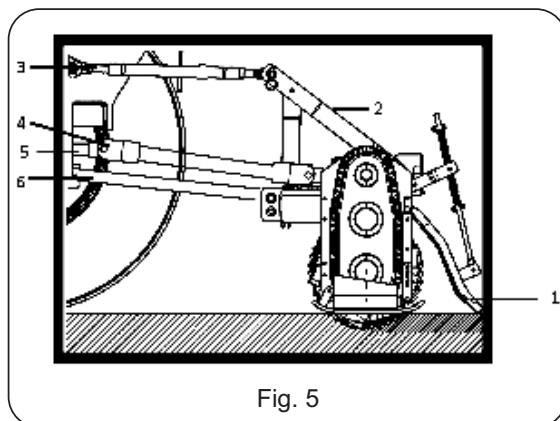


Fig. 5

- 1) Trailing Board.
- 2) Mast Bracket Front.
- 3) Top Link Tilting Adjusting Rod.
- 4) Propeller shaft.
- 5) Tractor pto coupling.
- 6) Lower tractor coupling links.

2.0 SAFETY AND ACCIDENT PREVENTING PROVISIONS

- 24) Before leaving the tractor, lower the implement coupled to the lift unit, stop the engine, engage the hand brake and remove the ignition key from the control panel.
- 25) It is absolutely forbidden to stand between the tractor and the machine (Fig. 5) when the engine is running and the propeller shaft is engaged without having first engaged the hand brake. Keep a safe distance from the rotating/moving parts at work to avoid being hit by possible flying stones, etc.
- 26) Always set the lift control lever to the locked position before coupling or releasing the implement from the three-point coupling.
- 27) The category of the implement coupling pins must correspond to that of the lift coupling.
- 28) Take care when working near the lift links. This is a very dangerous zone.
- 29) It is absolutely forbidden to stand between the tractor and the implement when manoeuvring the lift control from the outside (Fig. 5).
- 30) Fix the side lift links with the relative chains and idlers during the transport phase.
- 31) Set the control lever of the hydraulic lift to the locked position during road transport with the implement raised.
When hoisting from the ground, the joints of the propeller shaft are bent to more than 40° (power takeoff turned off). Detach the shaft from the power takeoff of the tractor.
- 32) Only use the propeller shaft recommended by the Manufacturer.
- 33) Frequently and periodically check the propeller shaft guard.
It must always be in an excellent condition and well-welded.
- 34) Take great care of the the propeller shaft guard, both in the transport and work positions.
- 35) The propeller shaft must only be installed or dismantled whilst the engine is off.
- 36) Take great care to ensure that the propeller shaft is correctly assembled and safe, and carefully check the locking both on the P.T.O. of the machine and on the P.T.O. of the tractor.
- 37) Use the supplied latch to prevent the propeller shaft guard from turning both on the machine's and on the tractor's side.
- 38) Before engaging the pto, ensure that there are no persons or animals in the field of action of the machine and that the selected running rate corresponds to the permissible value.
Never exceed the recommended maximum rate.
- 39) Never engage the pto when the engine is off.
- 40) Always disengage the pto when the propeller shaft is set at an excessively open angle (never beyond 10 degrees - Fig. 6) and when it is not in use.

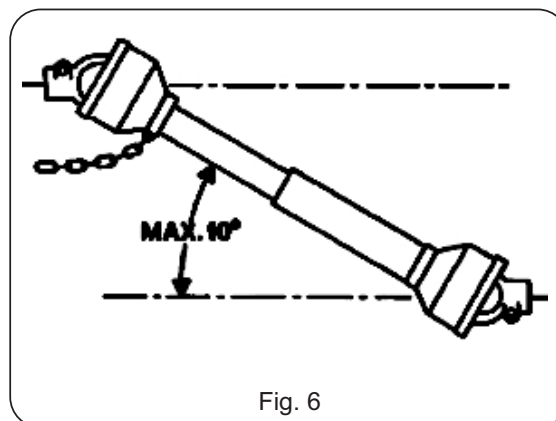


Fig. 6

- 41) Only clean and grease the propeller shaft when the pto is disengaged, the engine off, the hand brake engaged and the ignition key removed.
- 42) Rest the propeller shaft on its stand when the machine is disconnected.
- 43) Refit the protective cap on the pto shaft after having dismantled the propeller shaft.

2.0 SAFETY AND ACCIDENT PREVENTING PROVISIONS

- 44) Lengthy use of the machine can, as secondary effect, overheat the overdrive and parts of the hydraulic circuit.
Never touch these parts immediately after use as they are very hot and can cause burns.
- 45) Never carry out maintenance or cleaning work unless the pto has been disengaged, the engine switched off, the hand brake engaged.
Periodically check the state and condition of the protection bars and the protection flap bar.
- 46) Periodically check that all nuts and bolts are fully tightened. Re-tighten them if necessary.
- 47) Always place adequate supports under the implement when servicing the machine or replacing the hoe blades with the implement raised.
- 48) Before working on the cutting tools, disengage the pto, switch off the tractor engine, engage the hand brake and check that the blades are completely at a standstill.
- 49) Only use the recommended oils.
- 50) The spare parts must correspond to the requirements established by the manufacturer. Only use genuine spare parts.
- 51) The safety transfers must always be perfectly visible. They must be kept clean and should be replaced if they become illegible. Replacements are available on request from your local dealer.
- 52) The instruction manual delivered together with the machine by the dealer must be kept for as long as the machine lasts.



ATTENTION

In the event a tractor is used that has no pressurized, soundproof cabin the operator must use individual methods of protection.

- Protective headphones for noise in case the standard levels of exposure are exceeded.
- Anti-dust mask, if a considerable quantity of dust is raised caused by the type of product cut, by very dusty earth, or by the use of an open machine.

3.0 USE INSTRUCTIONS

3.1 TRANSPORT

If it becomes necessary to transport the machine for a long distance, it can be loaded onto a railway wagon or a truck. For this purpose, consult «Technical Features» for weight and specific dimensions. The latter are very useful to check the possibility of driving along all types of roads.

The machine is generally supplied in a horizontal position with no packing material. It is therefore necessary to use a system of hoisting with a crane and cables, or chains of adequate capacity, hooking onto the machine at the hoisting points marked with the «hook» symbol (S-12).



CAUTION

Before proceeding to the hoisting operations, make sure that any any mobile elements of the machine (wheels, 3rd point hitch...) are blocked.

Make sure to use a crane with an adequate hoisting capacity to lift the machine.

Hoist the machine with extreme caution and transfer it slowly, without jerks or abrupt movements.



DANGER

The operations of hoisting and transport can be very dangerous if not carried out with the maximum caution; persons not directly involved should be moved away. Clean, evacuate the area and delimit the transfer zone.

Check the state, condition and suitability of the means at disposition.

Do not touch suspended loads, keeping them at a safe distance.

During transport, the loads should not be raised more than 35 cm. from the ground.

It must be further ascertained that the operational area is free of obstacles and that there is sufficient «escape space», meaning an area which is free and secure into which one could move rapidly in case a load should fall.

The surface on which the machine is to be loaded must be horizontal in order to prevent possible shifting.

Once the machine is positioned on the vehicle, make sure that it remains blocked in its position.

Fasten the machine on the platform of the vehicle by means of cables suitable for the mass which must be blocked (see «Technical Features» for the weight).

The cables must be firmly fastened to the machine and pulled tight to the anchorage point on the platform.

Once transport has been carried out and before freeing the machine from all its fastenings, make sure that its state and position are such as not to constitute danger.

Remove the cables and proceed to unloading with the same means and methods used for loading.

Transit and transporting on the public highways

When driving on the public roads, fit on the rear reflector triangles, side lights and flashing beacon and always make sure that you comply with the Highway Code and any other applicable regulations.



ATTENTION

Before driving on to the public roads with the machine hitched to the tractor, make sure that the devices listed above and/or the slow vehicle signal and/or the projecting load signal operate correctly.

These indicators must be affixed to the rear of the implement in a position where they can be clearly seen by any other vehicle that drives up behind.

3.2 MACHINES SUPPLIED PARTLY BROKEN-DOWN

Owing to their size, the machines may be supplied with detached parts, **always fixed in the same pack.**

Normally, the parts that are detached and subsequently assembled by the customer are the 3rd point mounting which, depending on the type, weighs.

Execute these installation operations with the utmost care.

Refer to the list of parts in the Spare Parts Catalogue. In particular, apply the screw tightening torques as listed in the Chart on page 22.

3.3 BEFORE USE

Before starting the machine, check that:

- The machine is perfectly in order, that the lubricants are at the correct levels (see «Maintenance» chapter) and that all parts subject to wear and deterioration are fully efficient.



WARNING

The accident prevention guards are delivered dismantled for shipping volume needs. Before commissioning the machine, check to be certain that all accident prevent guards are in place and correctly installed.

- The protection unit, consisting of the coupling (8 Fig. 3) that acts as a clamp (7 Fig. 3) locked by the bracket and by the screws, is fixed to the square front pipe by the bolts and should be positioned on the Front and Rear Brackets on the body frame, one on the Front and Rear Brackets on the body frame.

Strictly comply with the following instructions to achieve the best performances.



WARNING

None of the following servicing, adjustment and preparation operations must be carried out unless the pto is disengaged, the machine is on the ground, the tractor engine is off and the tractor itself is safely at a braked.

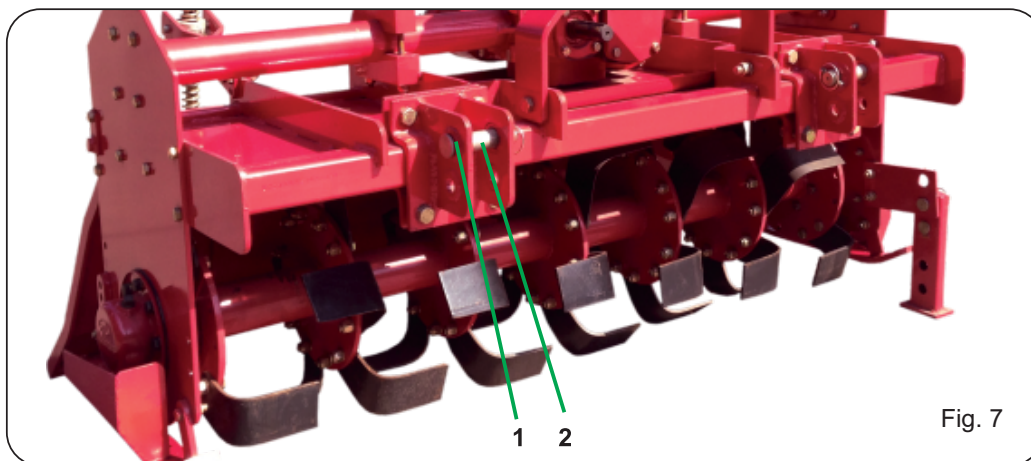
3.4 HITCHING TO THE TRACTOR

The machine is coupled to the tractor with the machine on the ground. The ground area should be flat.

All the machine can be attached to any tractor with a class 1 or 2 universal 3-point hitch.

Depending on the precise dimensions of these two types of hitches, find the best position for the machine by moving the plates (1 Fig. 7) along the square tubular and inserting the pin (2 Fig. 7) in the holes corresponding to the correct diameter for the tractor's parallel arms.

3.0 USE INSTRUCTIONS



IMPORTANT

The plates (1 Fig. 7) must always and only be mounted as shown in Fig. 7 with the holes towards the front of the square tubular.

The Manufacturer declines any liability for damage to the machine or the tractor if this essential installation requirement is not observed.



DANGER

Application of any implement to a tractor is a very dangerous operation and must only be carried out with the utmost care in compliance with the instructions.

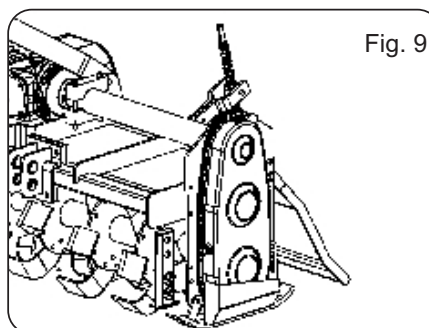
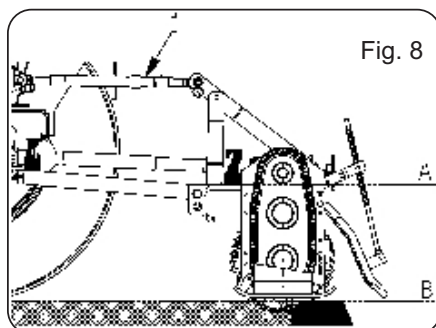
The correct tractor/machine position is established by setting the implement at such a distance from the tractor that the universal coupling remains 5-10 cm from its maximum closing position. Now proceed in the following way:

- 1) Near the lift bars, setting them in the most suitable plates (2 Fig. 7). Insert the pin (1 Fig. 7) into the relative hole and lock in place with the snap-in split pins.
- 2) Lock the lift links using the relative chains and couplings parallel to the tractor.
This operation must be carried out to prevent the machine from moving in a horizontal direction.
- 3) Engage and check that it is perfectly locked on the pto. Check that the guard is free to turn and tight the guard with suitable chain.
- 4) Connect the upper third-point and correctly regulate by means of the adjuster (1 Fig. 8), checking that the upper surface of the machine (A Fig. 8) is parallel to the ground (B Fig. 8).

This is very important since it achieves parallelism between the axis of the machine and that of the tractor pto.

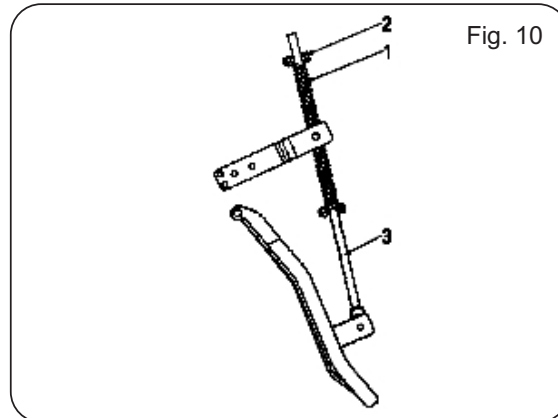
When the implement operates in these conditions, there will be less stress on the pto itself while the propeller shaft and implement will be much less subject to wear.

- 5) Position the support foot as shown in the figure 9.



3.0 USE INSTRUCTIONS

- 6) Besides supporting the Levelling bonnet and acting as a shock absorber for it during road transport, the spring ram (Fig. 10) prevents the steerage hoe from overturning when parking. The effect of the levelling bonnet on the soil can be increased or decreased depending on the position, established by the split pin, Nut and bolts (Fig. 10) in the various holes in the ram tube (Fig. 10).

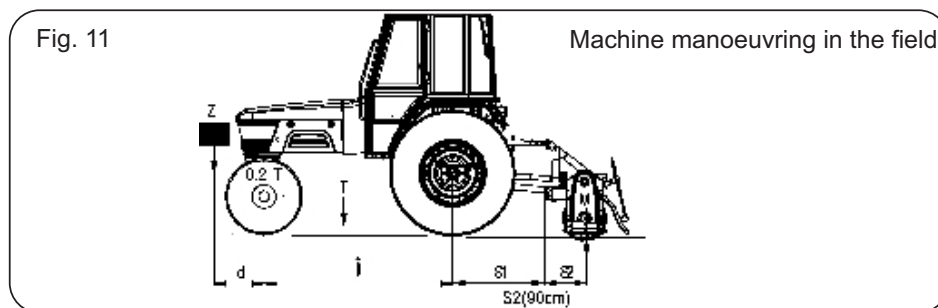


3.5 CHECK THE LIFTING CAPACITY AND STABILITY OF THE TRACTOR TO WHICH THE MACHINE IS HITCHED

Assembly of a implement on the tractor will shift the weights on the axles (Fig.11).

It is there fore advisable to add weights to the front part of the tractor in order to balance the weights on the axles themselves.

The ballast required is calculated by means of the following formula:



$$\frac{Z > M \times S - 0.2 \times T \times i}{d + i}$$

$$S = S1 + S2$$

If the implement is hitched to approved agricultural tractors registered before 6th May 1997, also check to make sure that the following relation has been complied with:

$$M < 0.3 \times T$$

- I = Tractor wheelbase (cm).
- d = Distance between front axle and center of gravity of ballast (cm).
- T = Weight of tractor + operator (75 kg)
- Z = Weight of ballast (kg)
- M = Weight of implement (kg)

3.0 USE INSTRUCTIONS

- S = Overhang from rear axle of the machine (cm).
S1 = Distance of rear axle from parallel hitch (cm).
S2 = Distance between bar hitch hole and center of gravity of machine (cm) (Fig. 11).

3.6 PROPELLER SHAFT

Propeller shaft adaption

The Propeller shaft, supplied with the machine, is of standard length. Therefore it might be necessary to adapt the Propeller shaft.

In that case, before doing anything, consult the Manufacturer for the eventual adaptation.

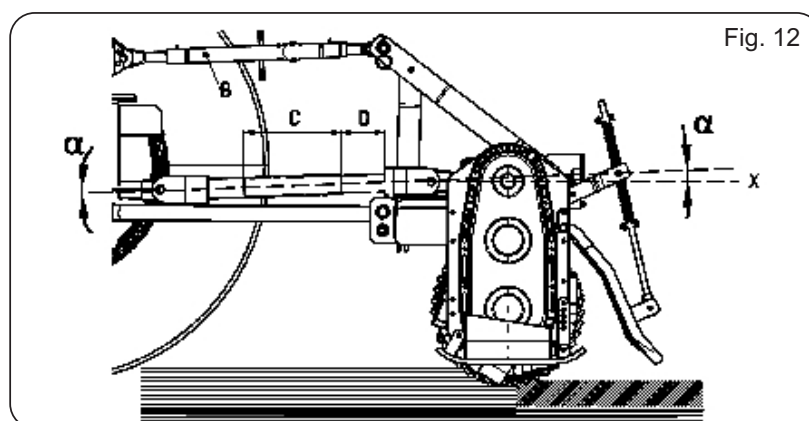
Hitch the machine to the tractor and stabilize the tractor's third point with the device installed for that purpose (bar, chain, etc.).

Disengage the tractor's PTO and turn off the engine.

Connect the driveline shaft to the tractor's PTO.

Connection is correct when the machine is horizontal in the operating position.

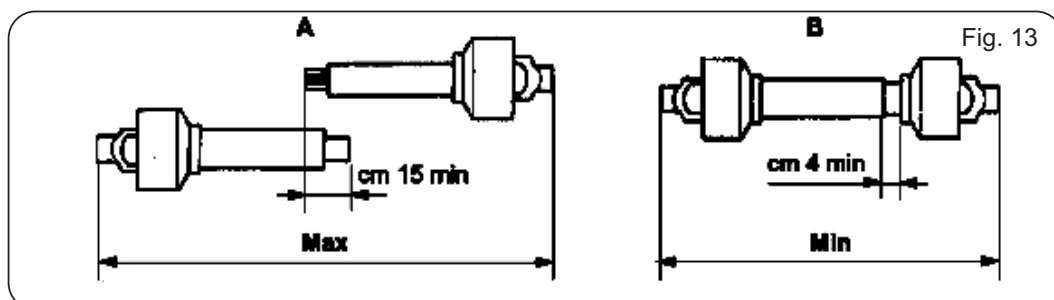
To achieve this, increase or decrease the length of the top bar of the hitch (B Fig. 12) so as to set the axis (X Fig. 12) of the housing's grooved ring nut parallel to the ground.



Inspections at work:

- The two angles formed by the fork axes and the axis of the sliding tubes will be equal and must not exceed 10° .
- The sliding tubes (A Fig. 13) must overlap by at least 15 cm (Fig. 13).

Inspections in the raised position:



- Proceed with a lifting action (tractor PTO disengaged).
- The two tubes of the driveline shaft must not fully overlap. There must always be a safety travel (B Fig. 13) of at least 4 cm.
- The angles of the drivelines must not exceed 40° .

If these two results are not obtained:

3.0 USE INSTRUCTIONS

- Shorten the sliding tubes by the same extent (Fig. 14 and 15), deburr and trim, then grease the inside of the outer tube.
- Make sure that the upper hitch bar is as parallel as possible to the lower bars of the hitch.
If this is not sufficient, correct the way the top link of the hitch couples to the tractor or machine, as necessary, or at least considerably attenuate, the jolts to which the driveline shaft is subjected during the lifting phase.
- If errors have been committed, disengage the tractor's PTO before lifting the machine.
Repeat these inspections when the machine is hitched behind another tractor.



CAUTION

When the propeller shaft is fully extended, the two tubes must overlap by at least 15 cm.

When fully inserted, the minimum play must be 4 cm. (A Fig. 13).



CAUTION

If the implement is used on another tractor, always check the before and that the guards completely cover the rotating parts of the propeller shaft.

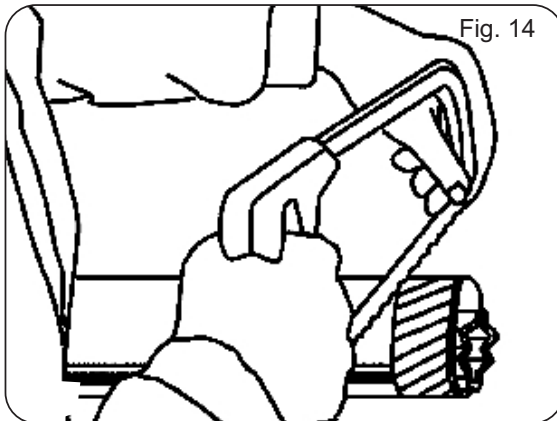


Fig. 14

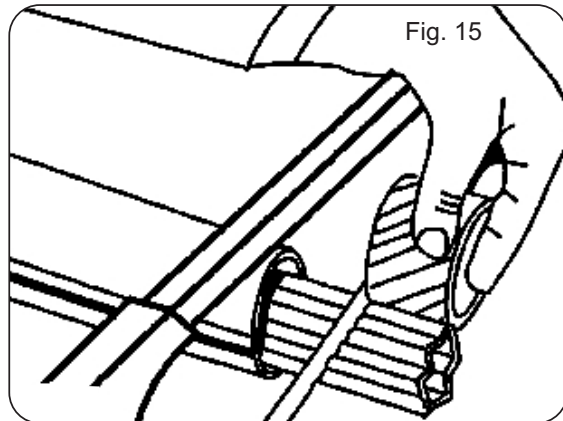


Fig. 15

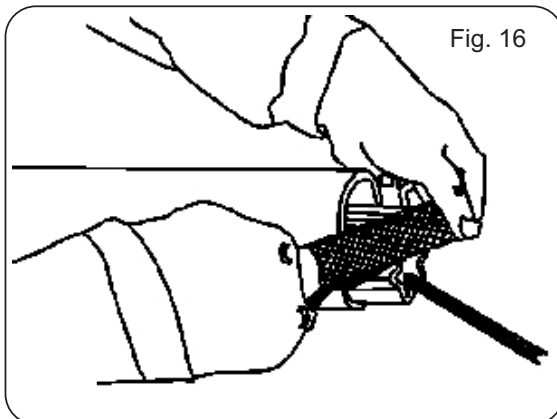


Fig. 16

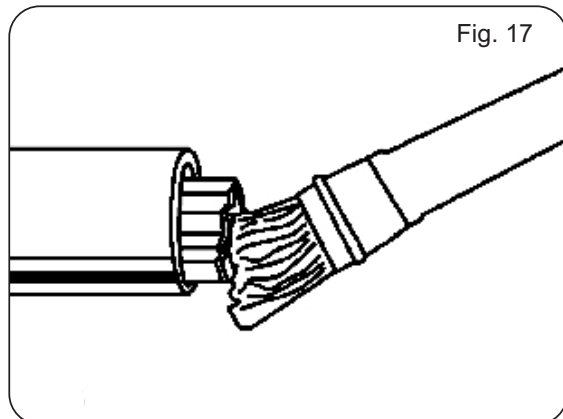


Fig. 17

3.0 USE INSTRUCTIONS



CAUTION

This inspection must be performed at the beginning of each new working season.

Driveline with safety limiter and shear bolt

The limiter, inserted in the cardan joint, is equipped with a safety bolt that is set for an average force.

Whenever unduly resistant obstacles cause the bolt to shear, it must be replaced by a new bolt, of the same size and material and grade.

If the bolt, inserted in hole, shears repeatedly, then we recommend using the higher grade bolt (Fig. 18).

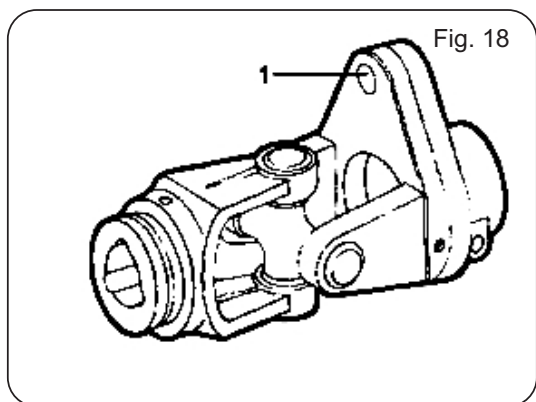


CHART: SCREW TIGHTENING TORQUES
(settings given in Nm)

Bolt Grade	Torque N-m	
Bolt M8	8.8	25
Bolt M10	8.8	50
Bolt M12	10.9	120
Bolt M 14	10.9	17.0
Bolt M 16	10.9	295



CAUTION

Avoid frequent and lengthy overloads.

The driveline is supplied calibrated by the Manufacturer.

Do not tamper with the device if operational faults occur.

Contact the driveline supplier or a specialized center if necessary.

3.7 WORK DEPTH

Machine work depth is regulated on the basis of the different possible configurations by the position of the following devices:

- Side Adjuster Skids.
- Draft and Position Lever on Tractor.



DANGER

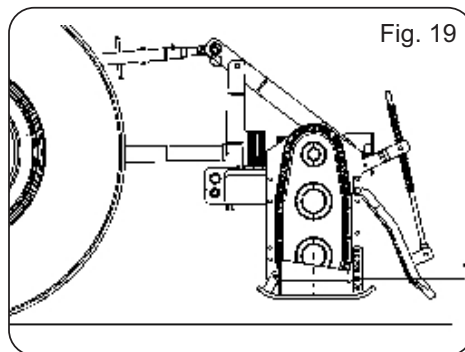
Turn the adjustment handle only when the tractor is at a standstill and with the power take-off disconnected.

Do not carry out this adjustment by operating from the tractor.

Machine with skids

To adjust working depth on this type of machine you must loosen the adjustment screw (1 Fig. 19) and raise or lower the skid the desired amount. Then retighten the screw.

Both skids should be subjected to this operation which will vary according to the type of soil.



3.8 SIDE TRANSMISSION

Side gears drive

The rotor can be operated by a set of side gears (5 Fig. 3) housed in a special casing with thick walls able to give the transmission considerable sturdiness.

3.9 HOE BLADES

The hoe blades with which the machine is equipped can work soils of normal conformation.

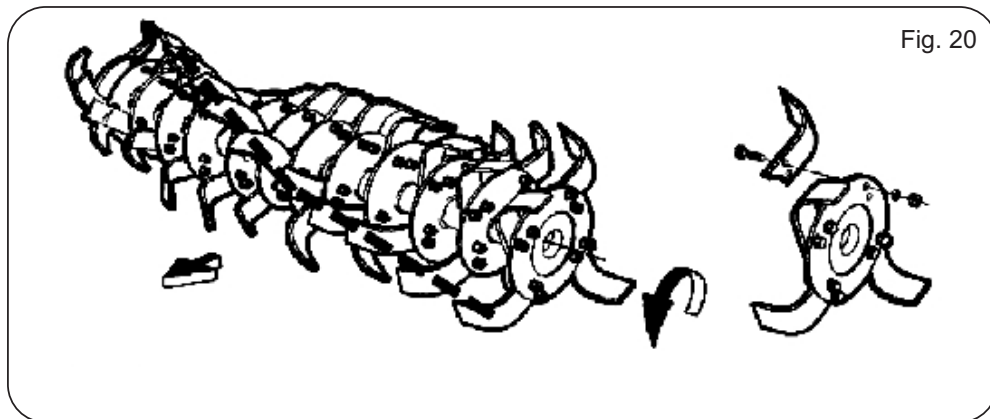
Check the degree of wear and condition of the hoe blades each day.

If the blades should accidentally bend (or break) during work, they must be immediately replaced.

3.0 USE INSTRUCTIONS

Remember to mount the new hoe blade in exactly the same position as the old one (Fig. 20).

If several hoe blades must be replaced, it is advisable to remove and assemble one hoe blade at a time in order to prevent positioning errors.



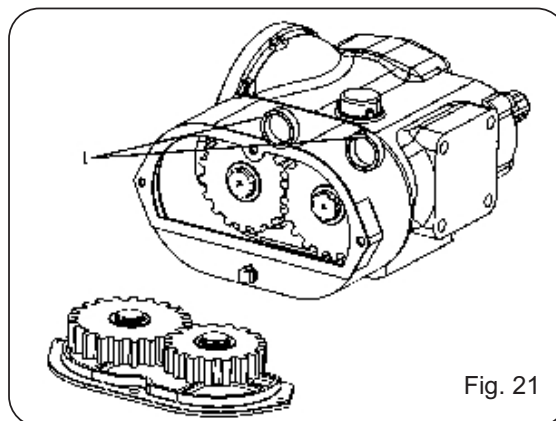
The heads of the bolts fixing the hoe blades in place must be on the side of the hoe blades themselves, while the nut with relative washer must be on the flange side (Fig. 20).

Apply the tightening torques as listed in the Chart on page 22.

If the hoe blades must be changed, remember to set the new blades in the same positions as the demounted ones (Fig. 20).

3.10 GEARSHIFT

Machine are equipped with a gearshift (Fig. 21), with one pair of gears.



A variety of rotation speeds of the rotor can be obtained so that the needs of the operator can be better met.

It is very useful for land which is uneven in that it makes rotary hoeing easy and at the same time allows the tractor to be maintained at a constant speed.

Invert the gears or change their positions to change speed.



WARNING

To carry out this operation:

- 1) Make sure that the gearbox is cool enough to work in safety without scorching the hands. Wear adequate gloves if necessary.
- 2) Unscrew its bolts and remove the rear cover of the gearbox.



CAUTION

Watch out: oil will come out.

- 3) It is advisable to bend the rotary Gyrovator forwards.
- 4) Slip the two gears from the drive shafts and invert their position.
Alternatively, replace the pair of gears with the spare set.



IMPORTANT

- **While changing gears pay attention that the spacers (Fig. 21) fitted behind the gears do not fall in the gearbox.**
- **The falling of the spares (Fig. 21) inside the gearbox can cause the braking of the gears.**

The name-plate on the cover gives the number of teeth of the gear pair originally installed by the Manufacturer, furthermore, as on page 7 of this handbook, there are the speeds pertaining to the pairs of gears mounted on purchase, plus of the spare pairs.

Each machine with gear change has a label which indicates the gear couple mounted as first equipment.

The label is attached to the third-point.



CAUTION

Be very careful and ensure to use the right gears, since some gear pairs cannot be inverted, and gears from different pairs cannot be interchanged.

Strictly comply with the pairs of gears indicated, in the chart on page 7.

Optimum tilling depends on two factors:

- 1) Forward speed of the tractor.
- 2) Rotation speed of the blade-carrying rotor.

The faster the rotor rotates, the more chopped up the soil will be.



CAUTION

Detach the machine from the tractor or turn off the tractor engine and rest the machine on the ground before subjecting the gearbox to any adjustments or inspections.

3.0 USE INSTRUCTIONS

3.11 IN WORK

Start work with the pto at running rate, gradually lowering the machine into the soil.

Never excessively press down on the accelerator pedal when the pto is engaged.

This could be very harmful for both the machine and the tractor itself.

When choosing how much to break up the soil which is to be rotary hoed the following points must be considered:

- the type of soil (mixed, sandy, clay etc.);
- how deep to hoe;
- the forward moving speed of the tractor;
- the optimal position of the machine.

The earth is best broken up and machine with a slow forward moving speed of the tractor, with the levelling bonnet lowered and a blade-carrying rotor rotation speed of about 200 rpm.

As well as holding the earth that has already been hoed by the hoe blades the levelling bonnet helps to produce a well levelled and smooth surface after hoeing. If the levelling bonnet is raised the sods are no longer broken up and there will not be a smooth, level finish.

3.12 HOW IT WORKS

Position the levelling bonnet according to how finely broken up the soil should be.

Position the depth of the two skids which are on the sides of the machine

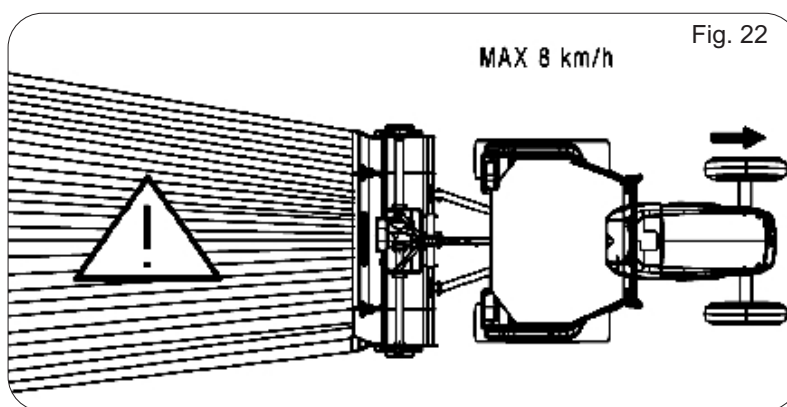
Engage the P.T.O. and start to move the tractor forward gradually lowering the machine.

After a short distance check to see whether the earth is being hoed to the depth required, broken up finely enough and leveled enough.



CAUTION

In order to prevent breakages or damage, the speed of the tractor must never exceed 8 Km/hour when the implement is working (Fig. 22).



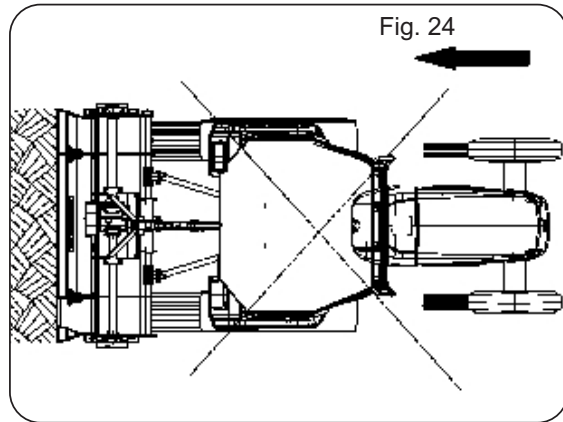
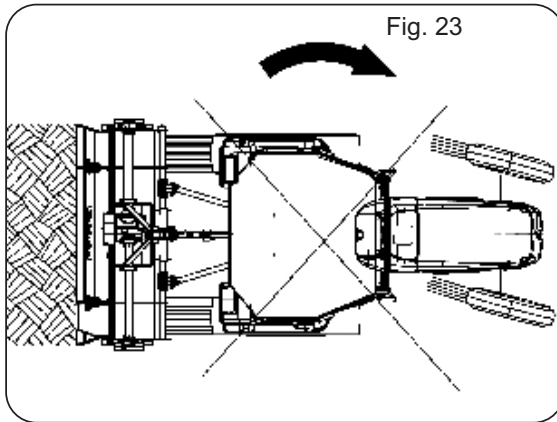
CAUTION

Never allow the machine to operate out of the soil.

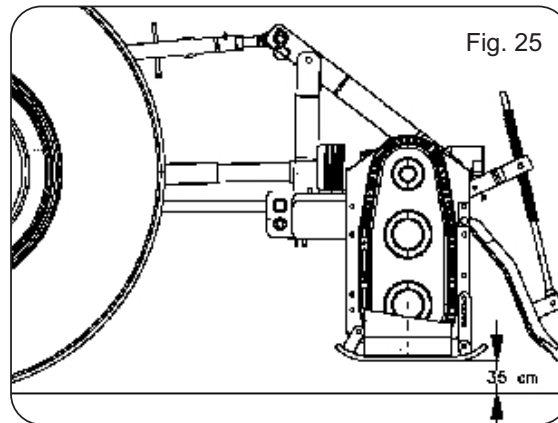
During work, avoid turning corners while the implement is soil working. Never work in reverse (Fig. 24).

Always raise the implement in order to reverse or change direction.

3.0 USE INSTRUCTIONS



During transport, or whenever the implement must be raised, it is advisable to adjust the lift unit of the tractor so that the implement itself is not raised more than about 35 cm from the ground (Fig. 25).



Do not drive on public highways if the machine is dirty with soil, grass or anything else that could dirty and/or hamper the road traffic.

Lower the machine slowly to allow the blades to gradually penetrate the soil. Do not allow it to drop violently on to the ground.

To do this would strongly stress all the machine components and could damage them.



Stones or other sharp objects may be thrown up by the turning tines during the soil working phase. Always constantly check that there are no persons, children or domestic animals in the field of action of the machine. The operator must also pay attention to the above.

3.13 PARKING



Comply with the following instructions in order to ensure that the implement remains stable when released from the tractor:

- 1) Position the support foot as shown in the figure 26.
- 2) Besides supporting the levelling bonnet and acting as a shock absorber for it during road transport, the spring ram

3.0 USE INSTRUCTIONS

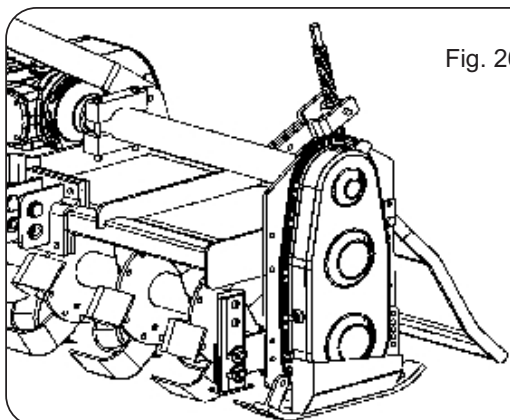


Fig. 26

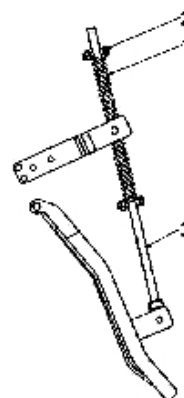


Fig. 27

(Fig. 27) prevents the steering hoe from overturning when parking.

- 3) Hold the propeller shaft with a suitable support.
- 4) The rod (Fig. 27) should be positioned as shown in the figure when parking the machine.

3.14 TROUBLESHOOTING HINTS FOR THE TRACTOR OPERATOR/DRIVER

The following are some useful suggestions for problems which might arise during work.

Insufficient depth

- a) Check the positioning of the two depth skids.
- b) Move forward more slowly as the power of the tractor may be insufficient.
- c) If the earth is too hard a second or third hoeing may be necessary.
- d) If the hoe blades are rotating on top of the earth instead of cutting into it proceed more slowly.

The earth is too finely broken up

- a) Raise the levelling bonnet.
- b) Increase the forward moving speed of the tractor.

The earth is not broken up finely enough

- a) Lower the levelling bonnet.
- b) Reduce the tractor speed.
- c) Don't work earth that is too wet.

Clogging up of the rotor

- a) The earth is too wet for hoeing.
- b) Raise the levelling bonnet.
- c) Reduce the tractor speed.
- d) Reduce the number of hoe blades perflange from 6 to 4.
- e) Avoid chocking where there is long grass and carefully clean whatever debris has gathered on the supports on the sides of the rotor to avoid overheating.

The machine bounces over the earth or vibrates

- a) There are foreign bodies caught between the hoe blades.
- b) The hoe blades have been incorrectly assembled thereby not forming the helix shape or with the blunt edge placed to cut into the earth first instead of the cutting edge.
- c) Worn or broken hoe blades.
- d) The rotor is deformed because of blows to the central part caused by foreign bodies present during hoeing.

3.0 USE INSTRUCTIONS

Other problems

The machine does not hoe to the same depth over the whole width e.g. if it hoes too deeply on the right side shorten the right arm of the lift bars and regulate the position of the right-hand skid.

Working a hill/slope

Where possible always try to «work up» the slope. If this is not possible avoid hoeing along the contours of the hill and hoe up and down the slope to avoid a terracing effect.

Practical notes

The hoed earth should be on the right of the driver.

The best system is to hoe alternate strips.

4.0 MAINTENANCE

The various routine servicing operations required are listed below along with a Maintenance table (which should be complied with) that briefly illustrates the operations, points and inspection frequencies.

Lower running costs and longer machine life depend on constant and methodical compliance with these operations.



CAUTION

The given frequencies are indicative and refer to normal conditions of use. They may therefore be subject to variations in relation to the type of service, a more or less dusty environment, seasonal factors, etc.

In the case of heavy-duty conditions, the maintenance operations should obviously be more frequent.

All operations must be carried out by expert personnel, wearing the proper safety clothing in a clean, not dusty environment.

All maintenance operations must be strictly carried out with the implement coupled to the tractor, hand brake engaged, engine off, ignition key removed, and implement lying firmly on the floor.

- **Before injecting grease into the lubricators, the greasing points must be thoroughly cleaned to prevent mud, dust or foreign bodies from mixing with the lubricant, 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.**



WARNING

Always keep oils 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 hands after use.

The utilized oils should be treated in compliance with the current anti-pollution laws.

4.1 FIRST 8 HOURS

SERVICE

- Carefully check the general condition of the machine after the first 8 hours service.
- In particular, you are advised to fully tighten all the screws and bolts on the machine after having checked the hoe blades for wear.

4.2 EVERY 8 WORK HOURS

- Grease the propeller shaft cross journals.
- Check that the bolts fixing the hoe blades are well tightened.

4.3 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 (Fig. 28).
- Transmission latéral par chaîne: check the level of the oil in the side casing of the transmission unit, unscrewing the level/drain plug (Fig. 28) and checking that oil flows out.

Add oil through the fill plug if necessary (1 Fig. 28). It should flow from the level plug.

- Side transmission gears: check the level of the oil in the side casing of the transmission unit, unscrewing the level plug (5 Fig. 28) and checking that oil flows out.

Add oil through the fill plug if necessary (3 Fig. 28). It should flow from the level plug.

4.4 EVERY 400 WORK HOURS

- Change the oil in the gearbox or in the reduction unit and transmission casing by completely draining off the old oil through the drain plug under the reduction unit and through the transmission drain plug (4 Fig. 28).

4.5 STORAGE

Proceed in the following way at the end of the season or if the harrow is to remain unused for a long period of time:

- Wash the machine and dry it. Make sure that all fertilizer and chemical products have been removed.
- Carefully check the implement and replace any damaged or worn parts.
- Fully clamp all screws and bolts, particularly the ones that fix the tines.
- Thoroughly grease the implement and protect it with a plastic sheet. Store it in a dry place.

It is advisable to proceed with the following inspections before the machine is set at work again:

- Check the oil levels in the gearbox and transmission unit.
Top up if necessary.
- Check the greasing points and add grease if required.
- Check all bolts and tighten them if necessary.

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.

The laws of the country where the machine is used, and particularly anti-pollution laws, must be observed if the machine should be scrapped.

Remember that the Manufacturer is always at your disposal for any assistance or spare parts as may be required.

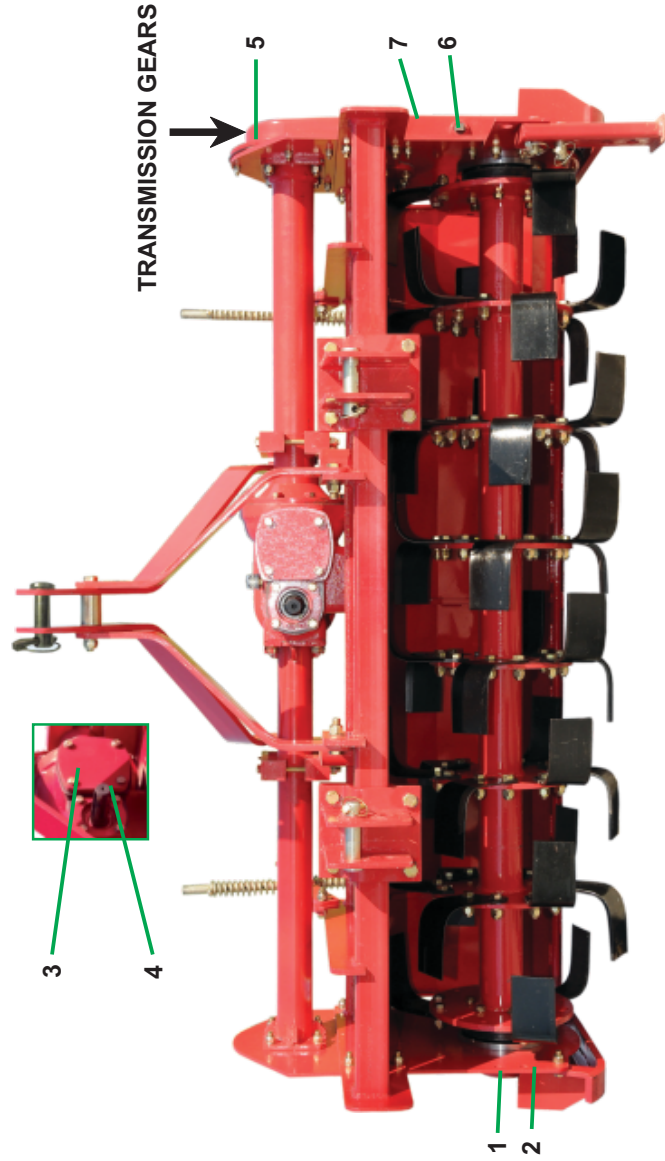
4.6 DISMANTLING AND ELIMINATION OF USED OILS





In case of dismantling of the Machine, it must be eliminated in the suitable dumps, according to the current regulations. Before proceeding with the dismantling of the machine it is necessary to separate the rubber parts from the metal parts.

Recover the exhausted oils and eliminate them in the suitable collection points.

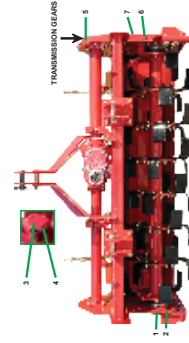
Customers are reminded that parts constituted by plastic, aluminum, steel, can be recycled if gathered in the proper centres.

4.7 LUBRICATION



OIL QUANTITY	
OIL	Qty. (Lt.)
	4
 	2.5
	0.3

Note: do not exceed the prescribed quantity of oil.



LUBRICANTS

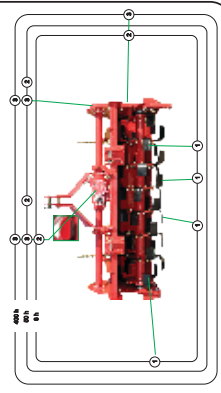
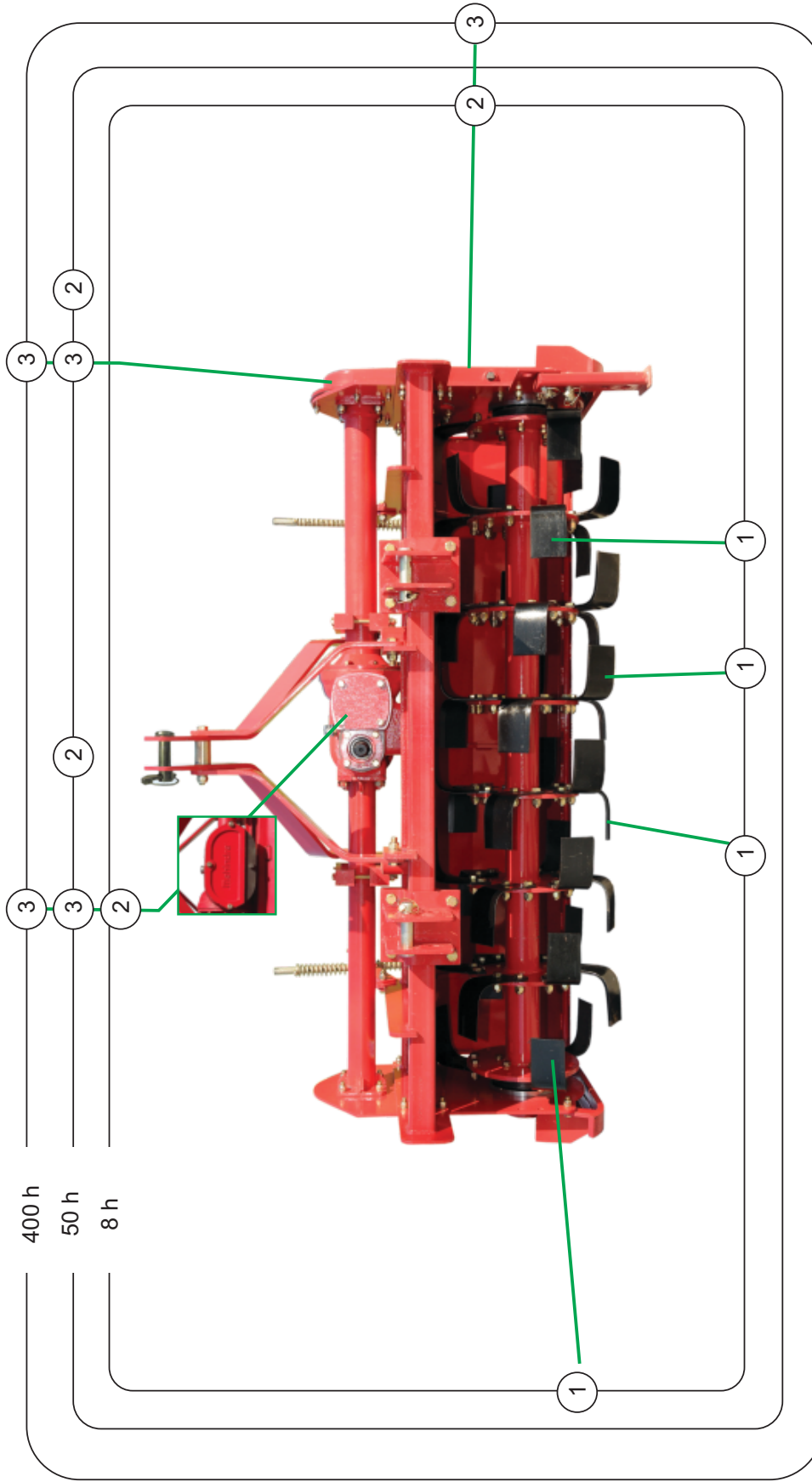
- It is advisable to use EP 140 GL4 OIL or equivalent for the reduction unit (or gear box) and side transmission.
- Consult the last cover page for the relative specifications.
- It is advisable to use AGIP GR MU EP 2 GREASE or equivalent for all greasing points.
- Consult the last cover page for the relative specifications.

MAHINDRA GYROVATOR SLX

- 1) Rotor bearing oil fill plug.
- 2) Rotor bearing oil drain plug.
- 3) Gearbox oil fill & check plug.
- 4) Gearbox oil fill & drain plug.
- 5) Side Transmission oil fill plug.
- 6) Side Transmission oil drain plug.
- 7) Side Transmission oil level check plug.

Fig. 28

4.8 MAINTENANCE RECAPITULATORY CHART



1. Check nut bolts for loose
2. Check oil level
3. Change oil

Fig. 29

4.0 MAINTENANCE

4.9 INCONVENIENCES, CAUSES AND REMEDIES

Inconveniences	Causes	Remedies
Noise from the transmission near the lifting devices.	Unsuitable lifting couplings.	Set the third point hitch parallel to the lower lifting links.
	Lifting height too high.	Limit the lifting travel. If the fault persists, disengage the PTO as the machine starts to lift.
Noise from the rotary cultivator as it works.	The rotary cultivator tilts to far forward or backwards as it works.	Lengthen or shorten the third point hitch so that the upper surface of the rotary cultivator is parallel to the ground worked (the PTO connections of the tractor and rotary cultivator must be parallel).
	Rotary tiller with insufficient side stability.	Ensure that the rotary cultivator remains stable by means of the rods of the lower lift links.
Power draw too high on dry ground.	Too much soil worked.	Reduce the work depth by adjusting the rotary tiller depth skids.
	Soil working too deep.	Replace the complete set of rotary tiller blades to ensure that the rotor is stable.
Too much soil thrown up from the rear part of the rotary tiller.	Worn rotary tiller blades.	Reduce the speed of the gearbox.
	Rotor speed too fast (versions with gearbox). Levelling bonnet incorrectly positioned.	Change the position of the levelling bonnet.
Power draw too high on wet ground.	Too much soil worked.	Reduce the work depth by adjusting the rotary tiller depth skids.
	Soil working too deep.	Raise the levelling bonnet to make the soil shift more easily.
Soil crumbled to an excessive extent.	Levelling bonnet clogged.	Reduce the speed of the gearbox.
	Rotor speed too fast (versions with gearbox). Levelling bonnet closed to an excessive extent.	Raise the levelling bonnet to prevent the clods from begin broken up too much.
Soil broken into excessively large clods.	Ground speed too low.	Increase the ground speed.
	Rotor speed too fast (versions with gearbox). Levelling bonnet open to an excessive extent.	Reduce the speed of the gearbox.
Rotor clogged.	Ground speed too high.	Lower the levelling bonnet to break up the soil clods to a greater extent.
	Soil too wet.	Reduce the ground speed.
	Low rotor speed (versions with gearbox). Soil too wet.	Do not work soil that is too wet.
	Levelling bonnet closed to an excessive extent.	Increase the speed of the gearbox. Do not work soil that is too wet. Raise the levelling bonnet.

4.9 INCONVENIENCES, CAUSES AND REMEDIES

Inconveniences	Causes	Remedies
	Ground speed too high.	Reduce the ground speed.
	The rotary tiller retain the worked soil.	Reduce the number of rotary tiller blades from 6 to 4 each rotor flange.
The rotary tiller jolts over the ground or vibrates.	Very tall grass and/or excessively long plant cuttings.	Do not work when the grass is too high or the plant cuttings are very long. If necessary, remove the clogged plants from the supports at the sides of the rotor to prevent them from overheating.
	Foreign bodies wedged between the cultivator blades.	Free the rotor from foreign bodies.
	Rotary tiller blades assembled incorrectly without respecting the helical positions or with blunt edges penetrating the soil first.	Disassemble the set of cultivator blades and fit them back in place correctly.
Soil working depth too shallow.	Worn or broken cultivator blades.	Replace the complete set of cultivator blades.
	Rotor warped due to blows received in the central part from foreign bodies during work.	Replace the rotor.
	Depth skids adjusted incorrectly.	Adjust the depth skids again.
	Insufficient tractor power.	Reduce the ground speed.
	Soil too hard.	Reduce the run several time.
The rotary cultivator does not work the soil at the same depth all along its width.	Cultivator blades dig into the soil to an insufficient extent.	Reduce the ground speed.
	Depth skids adjusted incorrectly.	Adjust the depth skids again.
	Lower lifting links adjusted incorrectly.	Adjust the lower lift links again.

5.0 MANUFACTURER'S WARRANTY

1. Mahindra & Mahindra Limited, Farm Equipment Sector – APPLITRAC (“the Company”) warrants to the retail purchaser of the Mahindra Gyrovator SLX that subject to the limitation specified here in below, the Company’s Authorized dealer will repair or replace any part thereof found, in its opinion, to be defective in materials or workmanship. The warranty shall be for a period of 15 months from the date of manufacturing and 12 months from the date of purchase of New Mahindra Gyrovator SLX by the original purchaser (“retail purchaser”).
2. This warranty is limited to the delivery to the retail purchaser, free at the Authorized Dealer’s workshop or Company’s works, of the part or parts whether repaired or replace in exchange for those acknowledge by the Company to be defective.
3. The purchaser of Mahindra Gyrovator SLX are advised strictly to follow the instructions given in the operator manual, provided by the company along with the Mahindra Gyrovator SLX at the time of delivery. Changes if any in the Rotary Tiller, resulting in improper usage will not be covered by the warranty. This warranty will automatically get terminated on the expiry of warranty period even if the Mahindra Rotary Tiller may not be in use for any time during the warranty period for any reason whatsoever including any technical reasons, and, time taken for such repairs / replacements of parts and in transit, whether under this warranty or otherwise shall not be excluded from the warranty period.
4. This warranty shall not apply to the following:
 - Blades
 - Propeller Shaft and Universal cross joints
 - Paint
 - Bearing
 - Rubber parts/ Gaskets
 - Fasteners
5. The retail purchaser shall be required to make a thorough examination of the Products prior to the purchase. The Authorized Dealer are in no way the legal agent of the Company and have no right or Authority to give any warranty or assume any obligation on behalf of the Company or bind the Company in any manner whatsoever.
6. For the purpose of this warranty, the term “product” means and includes only new Mahindra Gyrovator SLX, manufactured by or for the Company to the Company’s design and drawing and sold and installed by the Authorized Dealer.
7. The Company’s responsibility is limited to the terms of this Warranty and it shall not be liable for personal injuries or consequential or resulting liability, damage or loss arising from any defect.
8. The Company’s Liability under this Warranty is dependent upon the strict observance by the retail Purchaser, of the following provisions:
 - The Retail purchase at the time of delivery shall sign, complete and return the Authorized Warranty and Dealer’s Delivery Report form.
 - All the parameters should be thoroughly checked as per the scheduled maintenance as mentioned in the operator manual. The customers are also bound to use the genuine spares for Mahindra Rotary Tillers purchased from authorized Mahindra dealers.
 - Repair or replacements will be performed by the facility of the Authorized Dealer/its branch dealer/its Authorized Service Center only, following delivery of the Product by the retail surcharge to the facility of the Authorized Dealer/its branch dealer/its Authorized Service Center.
 - This Warranty shall not apply if the Product or any part thereof repaired or altered not in accordance with our standard repair procedure or by any person other than an Authorized Dealer/its branch dealer/its Authorized Service Center.
 - The Retail Purchaser shall at all times use only those brands of lubricating oils, lubricants or fuel which are approved in writing by the Company, for operating the products.
 - The decision of the Company or the concerned Authorized Dealer in regard to the warranty shall be final and conclusive and the retail Purchaser hereby agrees to unconditionally accept their decision on all.

5.0 MANUFACTURER'S WARRANTY

- This warranty does not cover any applicable taxes payable on any parts which the company may supply or repairs free of cost of during the warranty period. This warranty also does not cover the cost of packaging to and fro freight and transportation charges etc. on the defective Mahindra Gyrovator SLX or other parts of the Mahindra Gyrovator SLX sent to Mahindra Dealers locations
 - Claims arising from this warranty will be considered only if they are notified in writing to the concerned
 - Authorized Dealer or to the Company promptly after the defect has been ascertained.
 - The Company reserves the right to make changes in design or introduce any improvement or add any parts on the Products at any time without incurring any obligation to install the same on Products previously sold.
- 9 This contract will be ineffective and incorporative if :
- The dully filled warranty card is not presented during the repairs.
 - The Mahindra Gyrovator SLX or any parts thereof is subjected to negligence, Under Natural Climates/disaster and any social riots if in the company's opinion any damage has caused to the Mahindra Gyrovator SLX during trans portation.
 - The original numbers are removed, obliterated or altered from the unit.
 - Any attempt is made to have the repairs executed by a person, other than the company's or its authorized representatives. · Any defect is not informed immediately to the company or its authorized representative, any alterations in the warranty card is made.
 - The use of replacement parts not manufactured or supplied by the company will automatically invalidate this warranty. This warranty shall not apply to defect/damages caused by normal wear and tear, accident, transportation, misuse or neglect, usage in non agric applications, defect in the products which have been altered outside the Company's work or which have been let out on hire or the identification marks on which have been altered or removed. Company's decision in this respect will be final and binding on all.
10. The warranty will become void when:
- 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 propeller shaft or when the propeller shaft has been damaged through improper maintenance.
 - When the implement has been used beyond the specific power limit as given in the technical data chart.
 - When the defects gets arise due to the Rotary tiller operations in conjunction with unauthorized attachments.
 - When following repairs made by the customer without authorization from the manufacturer or owing to installation of spurious spare parts, the machine is subject to variations and the damage can be ascribed to theses 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 operator's handbook.
11. The above Warranty is in lieu of all other Warranties express or implied, and no person, agent or representative of the Company is authorized to give any other Warranties on the Company's behalf or to assume for it any other liability in connection, with the Product.
12. The court at Mumbai shall have exclusive jurisdiction to try, entertain and dispose of all proceeding relating to any dispute arising between the Company and the retail purchaser on the liability of the Company under this Warranty.

Acknowledgement

The blank spaces have been filled in and are correct, and I acknowledge that I have read and I accept this warranty and limitation of liability.

Purchaser _____

Address _____

City _____ State _____ Pin _____

Model/ Type _____ Serial no. _____

Retail date _____ / _____ / _____

Purchaser _____ Date _____
Signature

Dealer _____ Code _____

Address _____

City _____ State _____ Pin _____

Basic warranty expires on _____ / _____ / _____

Dealer _____ Date _____
Signature

Area Office

Acknowledgement

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Purchaser _____

Address _____

City _____ State _____ Pin _____

Model/ Type _____ Serial no. _____

Retail date _____ / _____ / _____

Purchaser _____ Date _____
Signature

Dealer _____ Code _____

Address _____

City _____ State _____ Pin _____

Basic warranty expires on _____ / _____ / _____

Dealer _____ Date _____
Signature

Dealer



Acknowledgement

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Purchaser _____

Address _____

City _____ State _____ Pin _____

Model/ Type _____ Serial no. _____

Retail date _____ / _____ / _____

Purchaser _____ Date _____
Signature

Dealer _____ Code _____

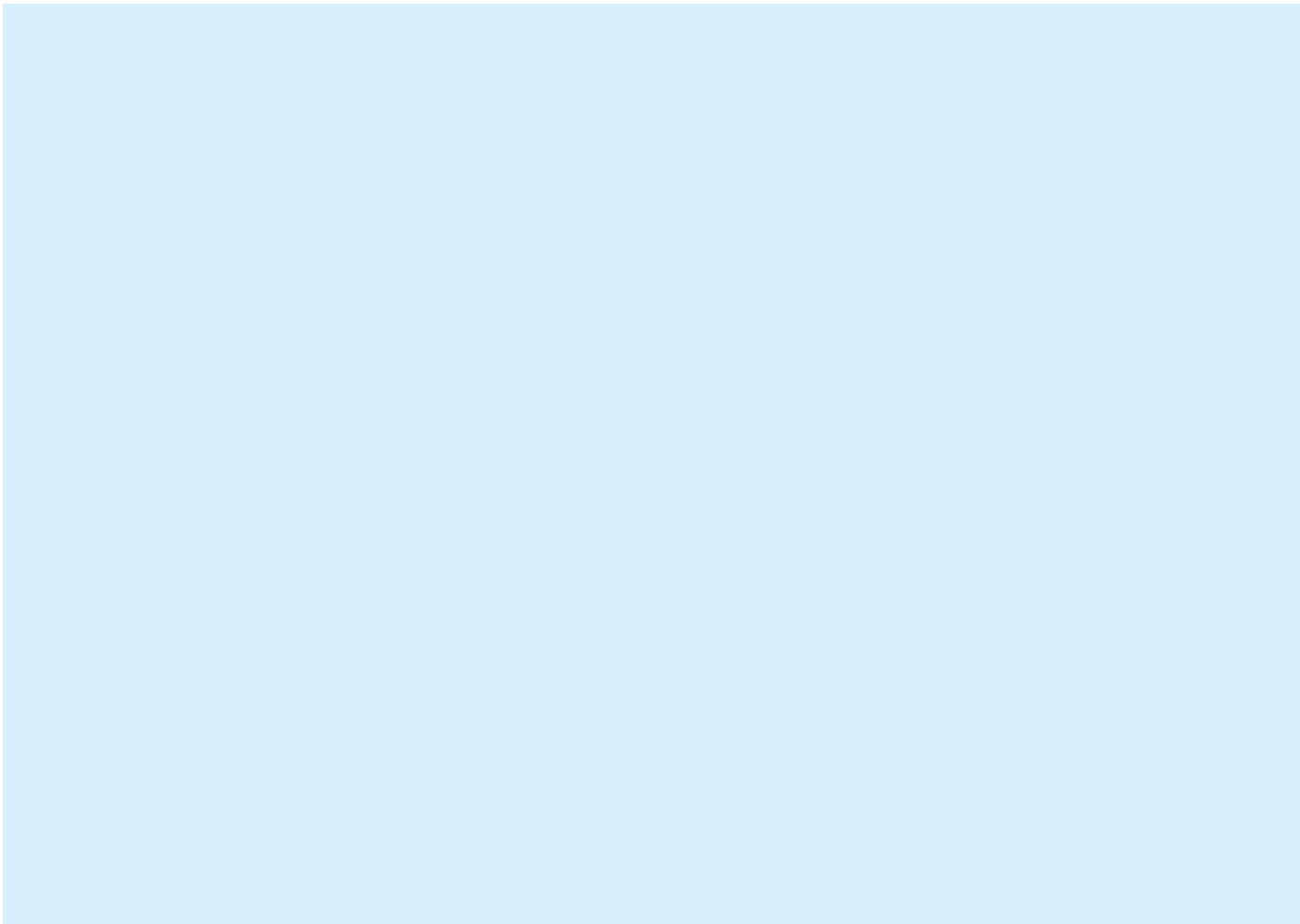
Address _____

City _____ State _____ Pin _____

Basic warranty expires on _____ / _____ / _____

Dealer _____ Date _____
Signature

Dealer



PRE DELIVERY INSPECTION (PDI) REPORT

First time buyer
(Write Yes/No)

Job Card No. : _____

Model / Type : _____

Dealer Code : _____

Sr. No. : _____

Dealer Location : _____

PDI done by : _____

Date Received : _____

Gyrovator Invoice No. : _____

Date : _____

Dealer Copy

PRE DELIVERY INSPECTION (PDI) REPORT

First time buyer
(Write Yes/No)

Job Card No. : _____

Model / Type : _____

Dealer Code : _____

Sr. No. : _____

Dealer Location : _____

PDI done by : _____

Date Received : _____

Gyrovator Invoice No. : _____

Date : _____

Area Office Copy

Points to be checked during PDI

- ❖ Please check that the Gyrovator is properly installed.
- ❖ Operator manual cum parts catalogue along with warranty booklet is provided at the time of delivery.
- ❖ All oil i.e. transmission, gearbox and rotor bearing should be changed & then checked for level.
- ❖ All nut bolts checked for loose.
- ❖ Cardon shaft is properly arcaded, filed and greased.
- ❖ Center to center distance between two lower links is maintained as per the details.
 - SLX 150 = 82.5 cm
 - SLX 175 = 82.5 cm
 - SLX 200 = 82.5 cm
- ❖ Category-II pins are provided with the implement.
- ❖ Depth adjuster is set as per required depth.
- ❖ Rotor rpm is set according to the field condition and required pulverization.
- ❖ Trail board is fitted at a proper angle as explained in Operator Manual/ Installation copy

1. List if any shortages parts :

2. Any damage to parts / assembly :

3. Any problem in fittment :

4. Any problem noticed while operating :

5. Any other feedback :

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1. List if any shortages parts :

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3. Any problem in fittment :

4. Any problem noticed while operating :

5. Any other feedback :

INSTALLATION REPORT

First time buyer
(Write Yes/No)

Job Card No. : _____

Model / Type : _____

Dealer Code : _____

Sr. No. : _____

Dealer Location : _____

Installation done by : _____

Date Received : _____

Gyrovator Invoice No. : _____

Date : _____

Dealer Copy

INSTALLATION REPORT

First time buyer
(Write Yes/No)

Job Card No. : _____

Model / Type : _____

Dealer Code : _____

Sr. No. : _____

Dealer Location : _____

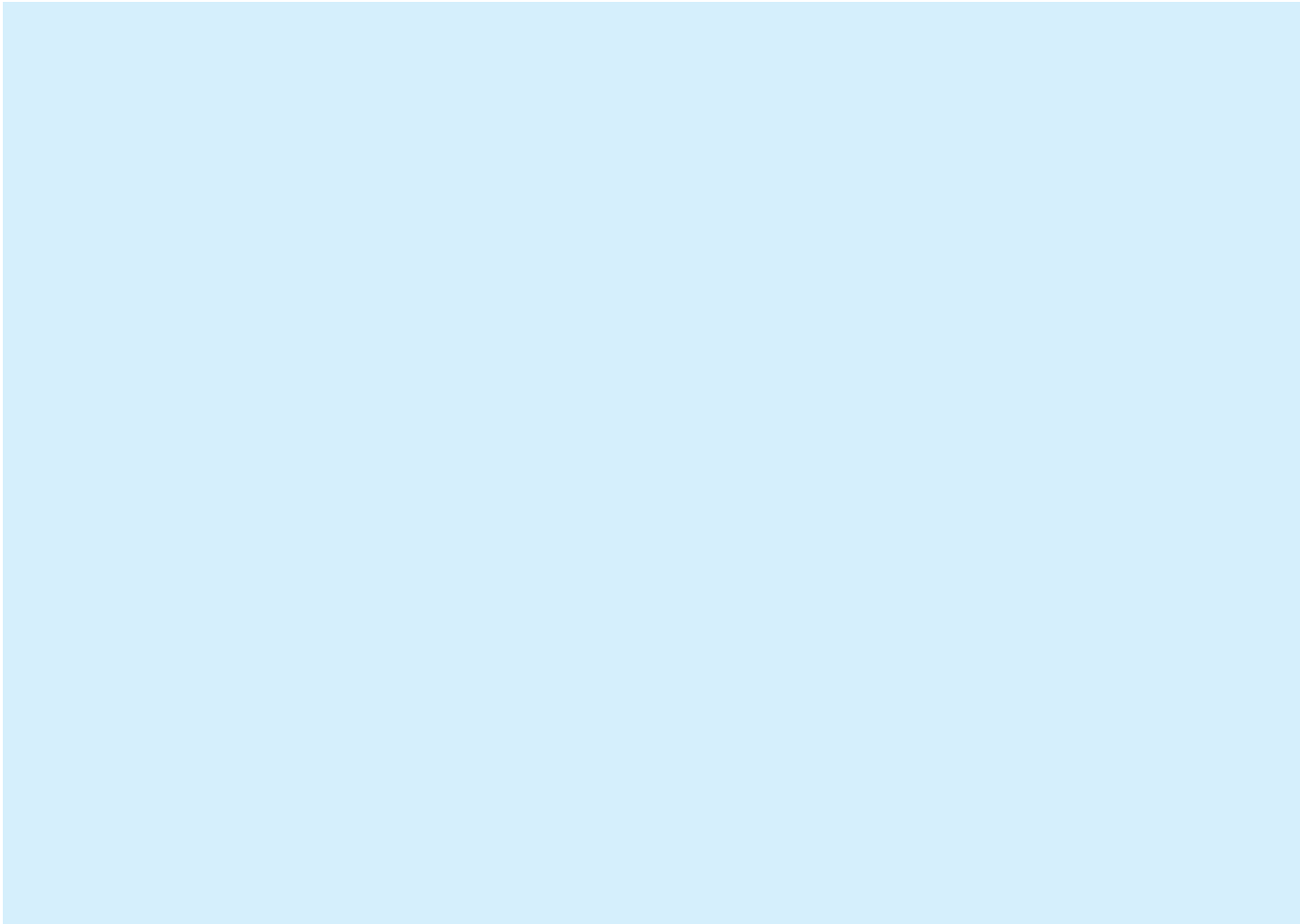
Installation done by : _____

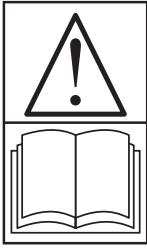
Date Received : _____

Gyrovator Invoice No. : _____

Date : _____

Area Office Copy





MAHINDRA GYROVATOR



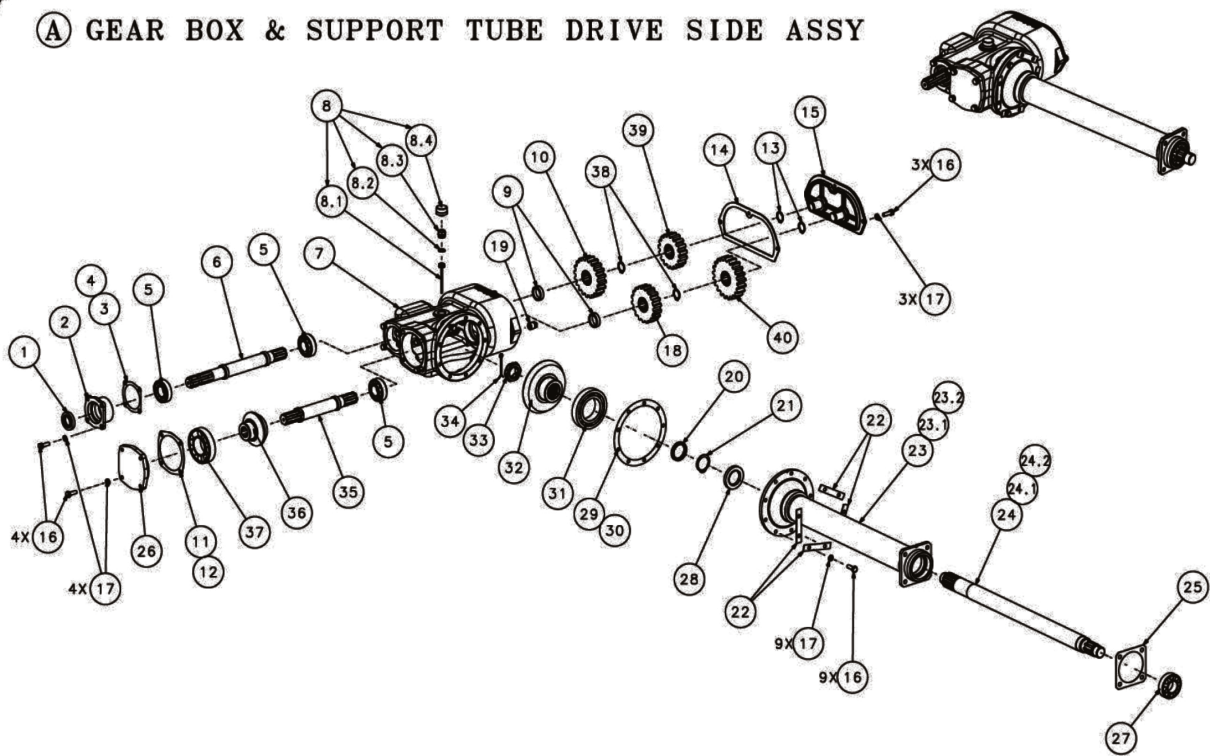
SLX Series
Parts Catalogue

Spare parts should be ordered from your Dealer and should always include the following indications:

- **Type and serial number of the machine.** These data are punched on the data plate with which every machine is equipped (A Fig. 3).
 - **Part number of the required spare part.** This will be found in the spare parts catalogue.
 - **Description of the part and required quantity.**
 - **Table number.**
 - **Means of dispatch.** If this item is not indicated, the Manufacturer, while dedicating particular care to this service, shall not be held responsible for delays in delivery caused by cases of force majeure.
- Transport expenses shall always be at the consignee's charge. The goods travel at the purchaser's risk and peril even when sold ex destination.

A) GEAR BOX & SUPPORT TUBE DRIVE SIDE ASSEMBLY

Ⓐ GEAR BOX & SUPPORT TUBE DRIVE SIDE ASSY



Cont.

MAHINDRA GYROVATOR SLX

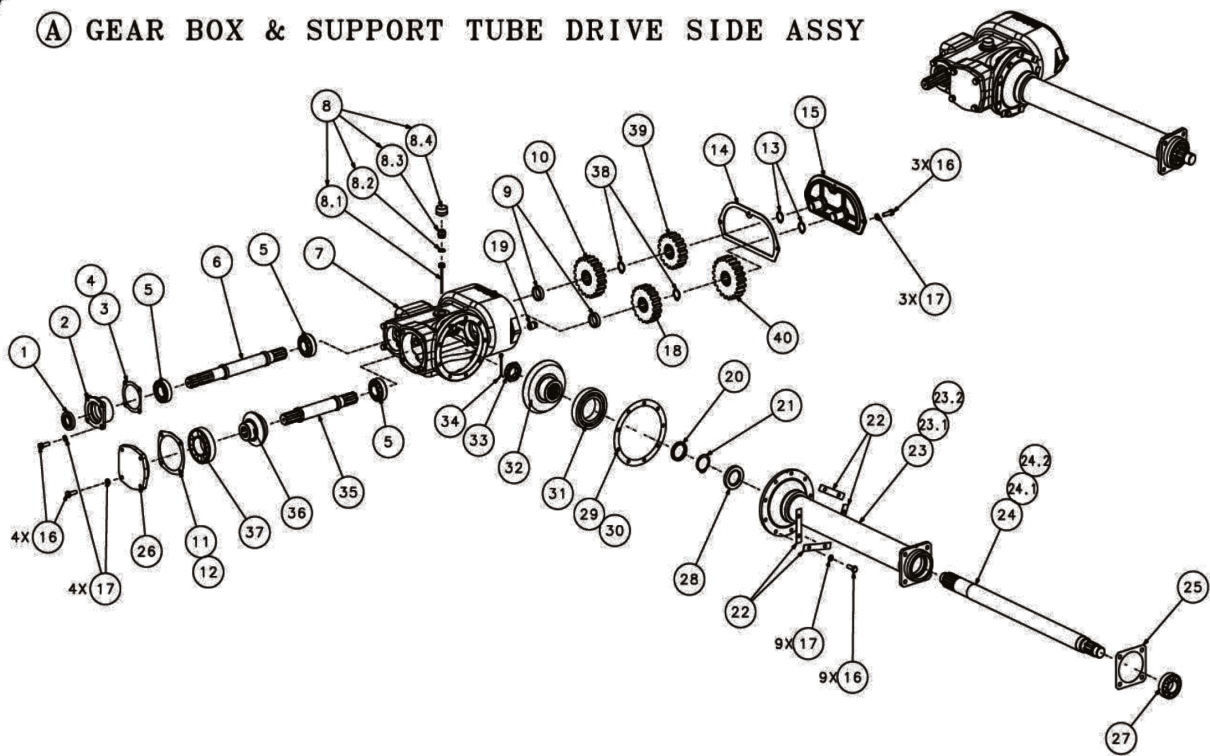
Illus. No.	Part	Description	Quantity
1	007904775C1	OIL SEAL- 35X57X11	1
2	007903965C1	PIC FLANGE	1
3	007903967C1	PIC FLANGE GASKET GEAR BOX - 0.5 MM	1
4	007903991C1	PIC FLANGE GASKET GEAR BOX - 0.25 MM	1
5	007904779C91	TAPPER ROLLER BEARING-72X35X25.24	3
6	P3110111A	PIC SHAFT WITH CIRCLIP	1
7	007903960C2	GEAR BOX HOUSING	1
8	007904762C1	BREATHER ASSY WITH DIPSTICK	1
8.1	007904734C11	DIP STICK	1
8.2	007904764C1	O-RING 20X2	1
8.3	007904732C1	AIR BREATHER ADOPTER BIG	1
8.4	007904733C91	AIR BREATHER BIG	1
9	007904040C1	SPACER ID35.5X OD45 X12 (GEAR BOX)	2
10	007903952C1	SPUR GEAR -SLX 20T	1
11	007903968C1	GASKET-COUNTER SHAFT FLANGE - 0.5 MM	1
12	007903993C1	GASKET-COUNTER SHAFT FLANGE-0.25MM	1
13	007904269C1	EXTERNAL CIRLIP A 29 (26.9)X1.5	2
14	007905111C1	RUBBERIZED CORK GASKET - CLOSING PLATE	1
15	007903970C2	CLOSING PLATE	1
16	007904086C1	BOLT M10 X 1.5 X 30 (GRADE 8.8)	20
17	007904102C1	SPRING WASHER M10	20
18	007903953C1	SPUR GEAR-18 T	1
19	007904780C1	MAGNETIC DRAIN PLUG	1
20	007904042C1	SPACER DRIVE SHAFT BEVEL GEAR SIDE	1
21	007904224C1	CIRCLIP EXTERNAL- 48.3 X1.75	1
22	007904347C1	LOCK PLATE	4
23	007904533C12	SUPPORT TUBE ASSEMBLY - DRIVE SIDE 1.5M	1
23.1	007904433C92	SUPPORT TUBE ASSEMBLY - DRIVE SIDE 1.75M	1
23.2	007904000C12	SUPPORT TUBE ASSEMBLY - DRIVE SIDE 2.0M	1
24	007904535C1	DRIVE SHAFT 1.5M MS CM	1
24.1	007904435C1	DRIVE SHAFT 1.75M MS CM	1
24.2	007903972C1	DRIVE SHAFT 2.0M MS CM	1
25	007904031C1	SUPPORT TUBE GASKET- DRIVE PLATE SIDE	1
26	007904344C1	COUNTER SHAFT FLANGE	1
27	007904076C91	TAPPER ROLLER BEARING 80 X 40 X 24.75	1
28	007904213C1	OIL SEAL-48X75X10	1
29	007903969C1	GASKET HOLLOW SHAFT BEVEL END-0.5 MM	1
30	007904029C1	GASKET HOLLOW SHAFT BEVEL END -0.25MM	1
31	007904075C91	TAPPER ROLLER BEARING 130 X 75 X 27.25	1
32	007905157C1	SLX SPIRAL BEVEL GEAR-T19	1

MAHINDRA GYROVATOR SLX

ABBREVIATION : M - METER, MS - MULTI SPEED,CM - CENTER MOUNTED,OS-OFFSET

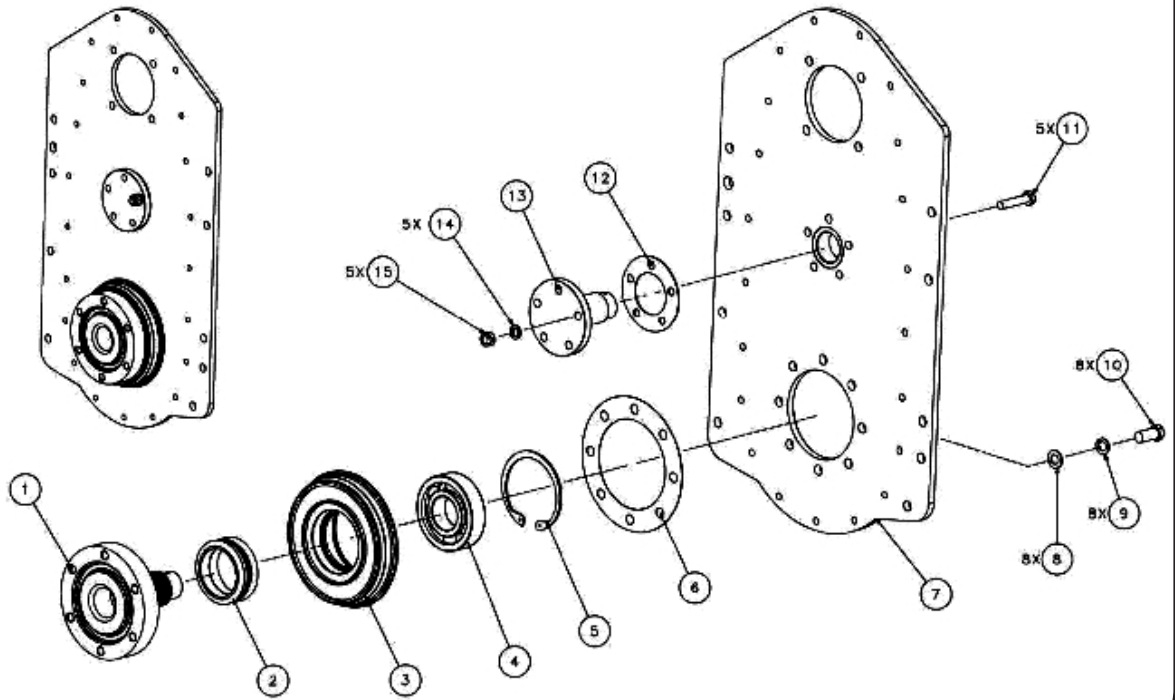
A) GEAR BOX & SUPPORT TUBE DRIVE SIDE ASSEMBLY

Ⓐ GEAR BOX & SUPPORT TUBE DRIVE SIDE ASSY



B) DRIVE SIDE PLATE ASSEMBLY

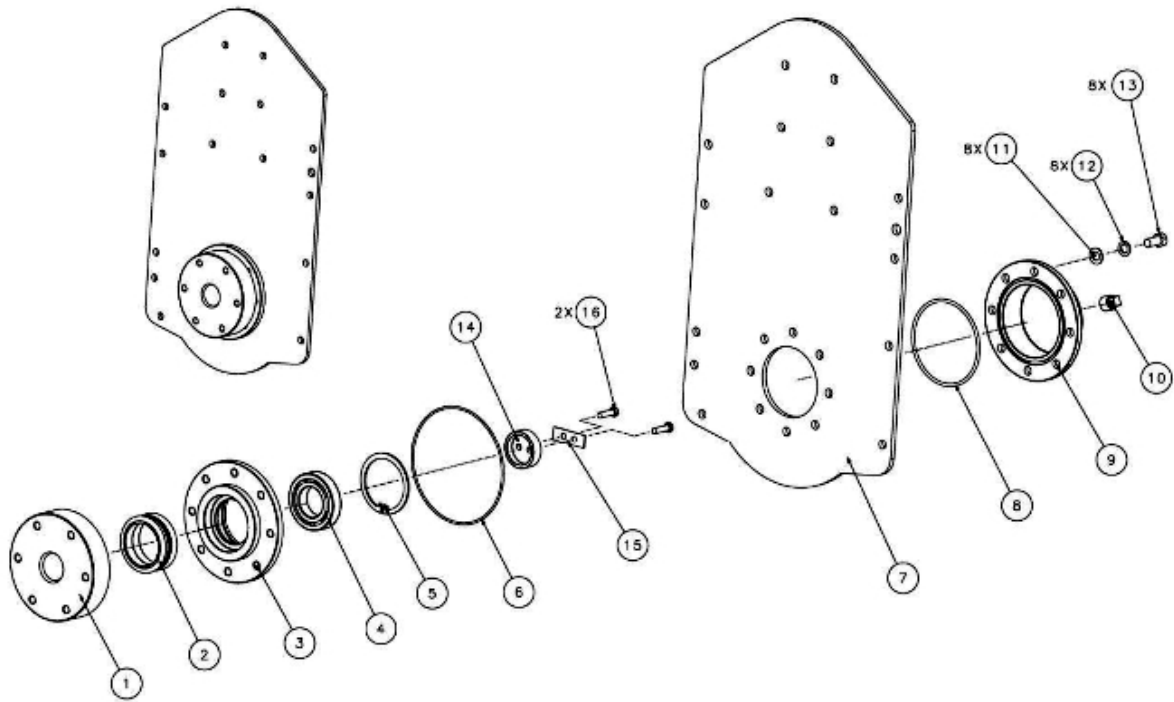
Ⓑ DRIVE SIDE PLATE ASSY



Illus. No.	Part	Description	Quantity
1	P3110099A	LHS HOLDER	1
2	007904073C91	HEAVY DUTY SEAL	1
3	P3110100A	HUB LHS ROTOR	1
4	007904777C91	BALL BEARING 100X45X25	1
5	007904776C1	100 MM INTERNAL CIRCLIP	1
6	P3110101A	GASKET-LHS HOLDER	2
7	P3110051A	PLATE ASSY - DRIVE SIDE - SLX	1
8	007904215C1	WASHER PLAIN M12 O.D. 24 (1.6 t)	8
9	007904104C1	SPRING WASHER M12	8
10	007904089C1	BOLT M12 X 1.5 X 30 (GRADE 10.9)	8
11	007904284C1	BOLT M10 X 1.5 X 50 (GRADE 8.8)	5
12	007904035C1	GASKET-IDLER SHAFT	1
13	007904451C1	SHAFT -IDLER GEAR	1
14	007904102C1	SPRING WASHER M10	5
15	007904290C1	NUT M10 X 1.5 NYLOC	5

C) NON DRIVE SIDE PLATE ASSEMBLY

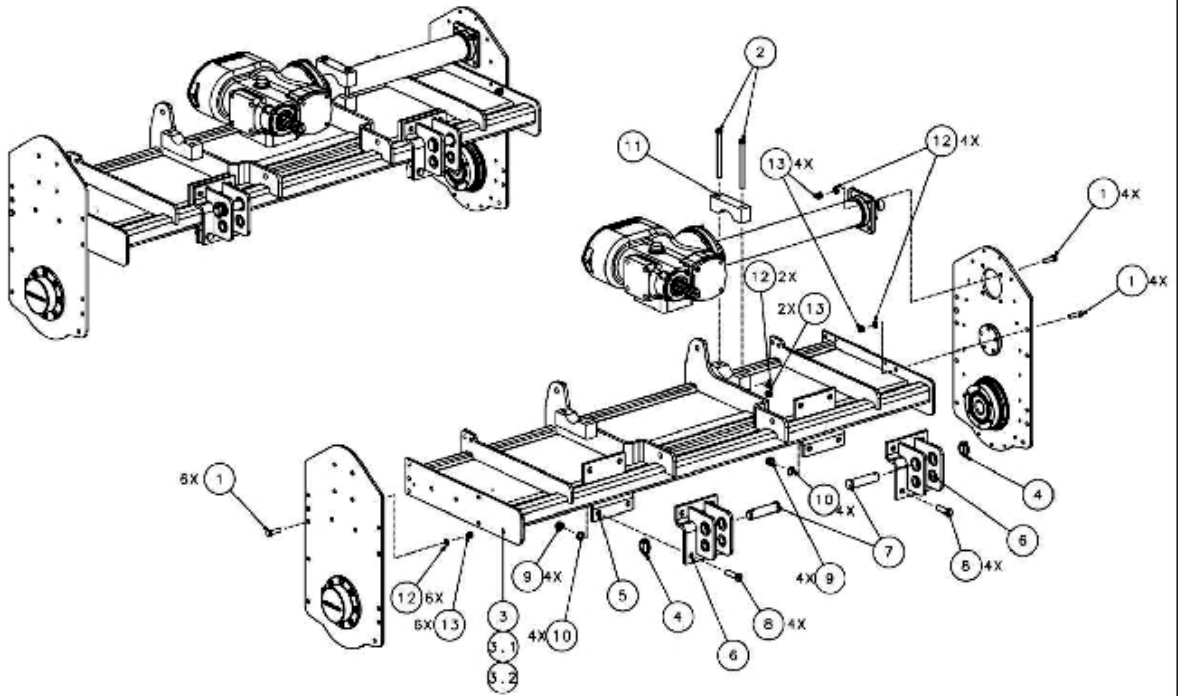
© NON DRIVE SIDE PLATE ASSY



Illus. No.	Part	Description	Quantity
1	007903995C1	RHS-HOLDER	1
2	007904073C91	HEAVY DUTY SEAL	1
3	007904370C2	HUB-RHS ROTOR	1
4	007904778C91	BALL BEARING 85X45X19	1
5	007904210C1	CIR-CLIP 85MM (INTERNAL)	1
6	007904078C1	'O' RING 170X3	1
7	007904014C2	PLATE - NON DRIVE SIDE	1
8	007904847C1	O' RING 120.24 X 3.53	1
9	007904840C2	CUP - NON DRIVE SIDE	1
10	007904780C1	MAGNETIC DRAIN PLUG	1
11	007904215C1	WASHER PLAIN M12 O.D. 24 (1.6 t)	8
12	007904104C1	SPRING WASHER M12	8
13	007904089C1	BOLT M12 X 1.5 X 30 (GRADE 10.9)	8
14	007904442C1	SPACER CUP TYPE	1
15	007904443C1	PLATE LOCK CUP SIDE	1
16	007904082C1	BOLT M8 X 1.25 X 30 (GRADE 8.8)	2

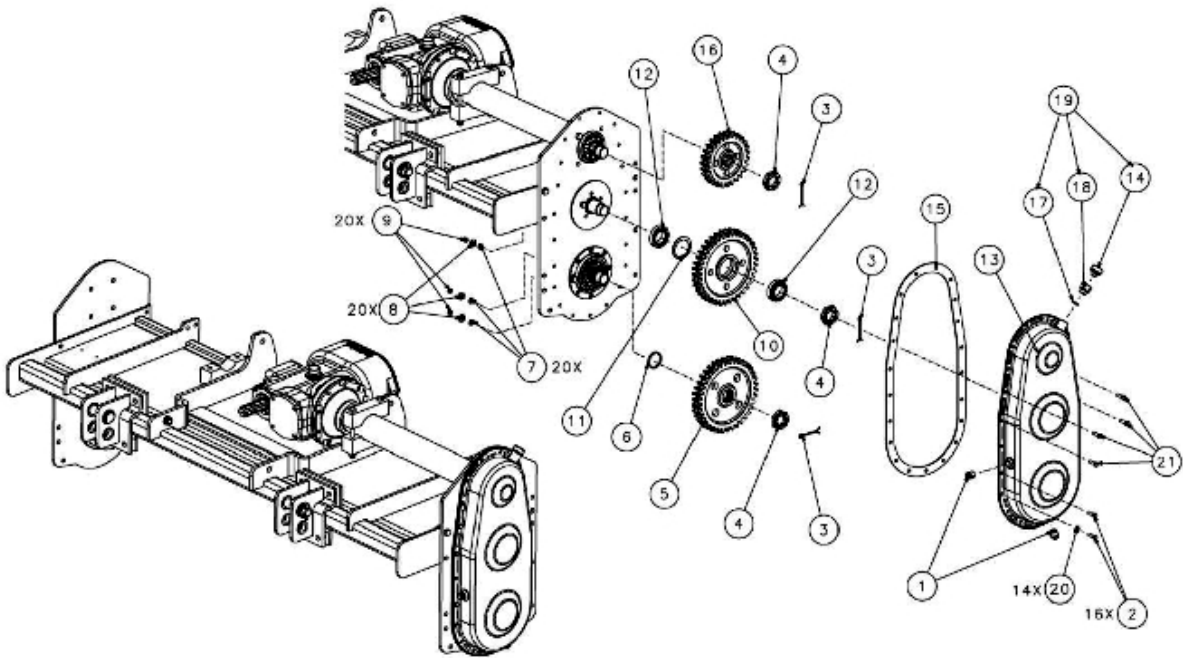
D) MAIN FRAME ASSEMBLY

④ MAIN FRAME ASSY

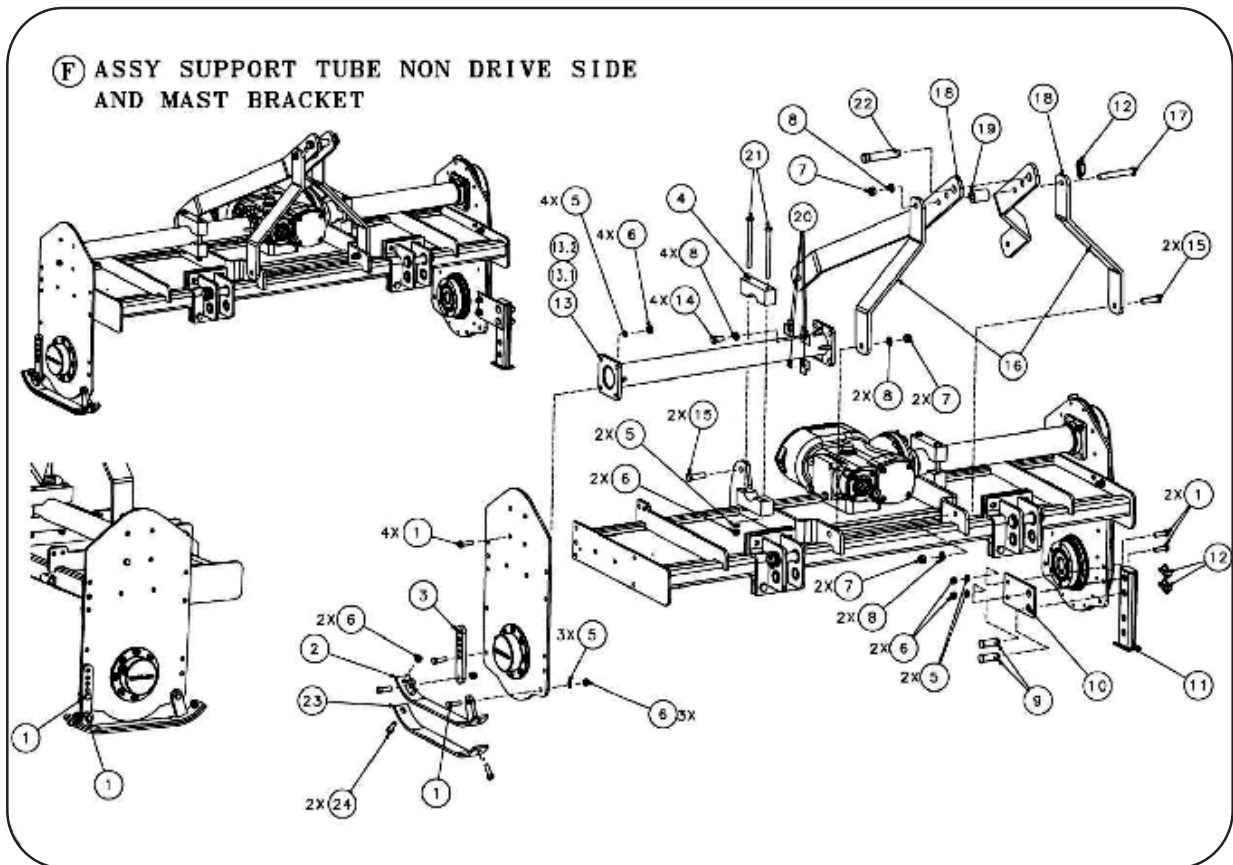


E) SIDE COVER ASSEMBLY

⑤ SIDE COVER ASSY

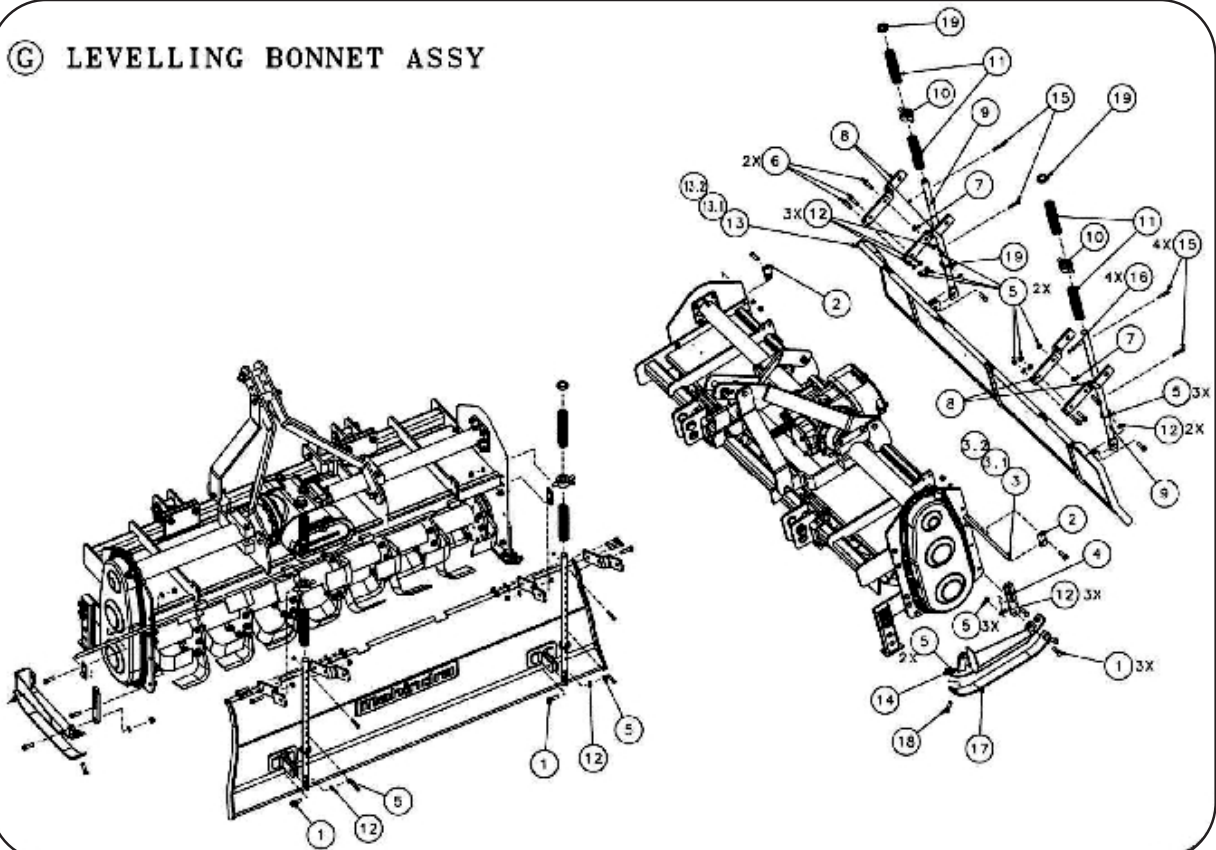


F) ASSEMBLY SUPPORT TUBE NON DRIVE SIDE & MAST BRACKET



G) LEVELLING BONNET ASSEMBLY

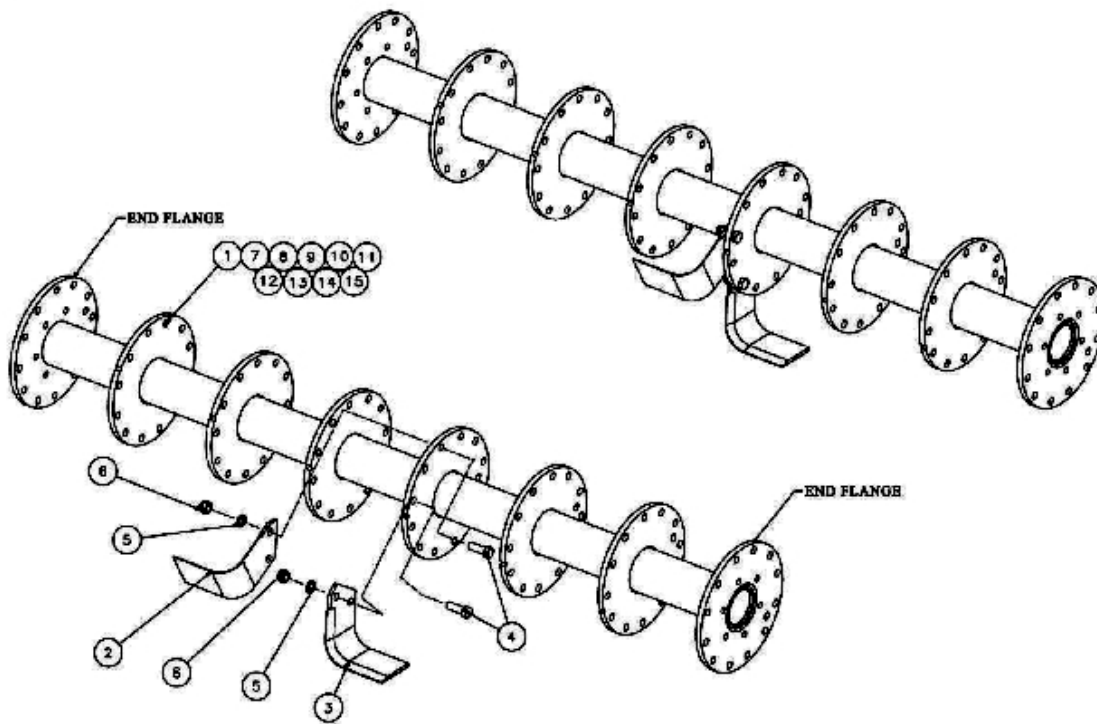
G) LEVELLING BONNET ASSY



H) ROTOR SHAFT ASSEMBLY 2M (Regular & Anti-Clogging)

H ROTOR SHAFT ASSY

NOTE:- 3 BLADES EACH ON END FLANGES TO BE FITTED AFTER FILMENT OF ROTOR SHAFT ASSY ON TO SIDE PLATES ASSY



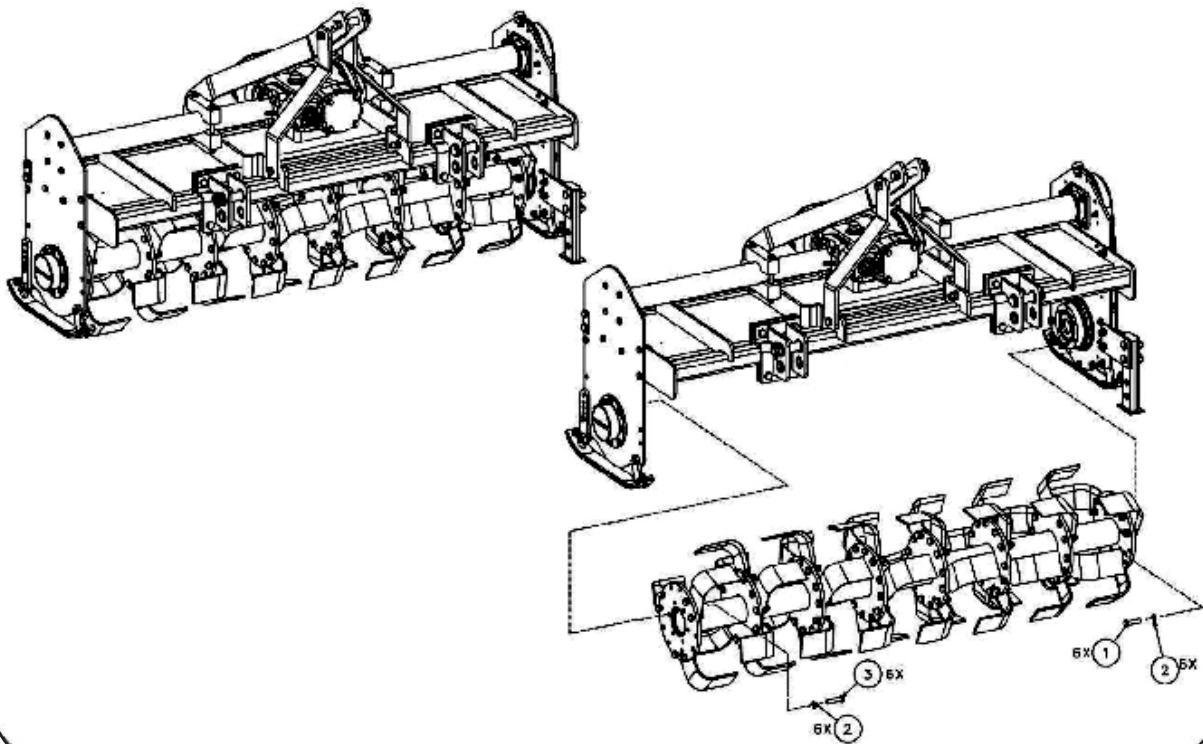
Illus. No.	Part	Description	Quantity
1	007904010C11	ROTOR SHAFT ASSY. SLX 2M (10MM FLANGE THK.)	1
2	007904013C1	BLADE - L - TYPE RH	24
3	007904012C1	BLADE - L - TYPE LH	24
4	007904187C1	BOLT M14 X 1.5 X 40 (GRADE 10.9)	96
5	007904190C1	SPRING WASHER M14	96
6	007904188C1	NYLOCK NUT M14X1.5	96
7	P3110098A	ROTOR SHAFT SLX 2M (12MM FLANGE THK.)	
	ROTOR SHAFT ASSEMBLY 1.75M (REGULAR & ANTI-CLOGGING)		
8	007904437C11	ROTOR SHAFT ASSY. FOR SLX 1.75M REGULAR (10MM FLANGE THK.)	1
2	007904013C1	BLADE - L - TYPE RH	21
3	007904012C1	BLADE - L - TYPE LH	21
4	007904187C1	BOLT M14 X 1.5 X 40 (GRADE 10.9)	84
5	007904190C1	SPRING WASHER M14	84
6	007904188C1	NYLOCK NUT M14X1.5	84
9	007904738C11	ROTOR SHAFT ASSEMBLY FOR SLX 1.75M ANTI-CLOGGING ((10MM FLANGE THK.)	1
12	P3110064A	ROTOR SHAFT ASSY. FOR SLX 1.75 M REGULAR (12MM FLANGE THK.)	1
13	P3110105A	ROTOR SHAFT ASSY. FOR SLX 1.75M ANTI-CLOGGING (12MM FLANGE THK.)	1
	ROTOR SHAFT ASSEMBLY 1.5M (REGULAR & ANTI-CLOGGING)		
10	007904489C11	ROTOR SHAFT ASSY. FOR SLX 1.5M REGULAR (10MM FLANGE THK.)	1
2	007904013C1	BLADE - L - TYPE RH	18
3	007904012C1	BLADE - L - TYPE LH	18
4	007904187C1	BOLT M14 X 1.5 X 40 (GRADE 10.9)	72
5	007904190C1	SPRING WASHER M14	72
6	007904188C1	NYLOCK NUT M14X1.5	72
11	007904739C11	ANTI CLOGGING ROTOR SHAFT ASSY. FOR SLX (10MM FLANGE THK.)	1
14	P3110093A	ROTOR SHAFT ASSY. FOR SLX 1.5M REGULAR (12MM FLANGE THK.)	1
15	P3110103A	ROTOR SHAFT ASSY. FOR SLX 1.5M ANTI-CLOGGING (12MM FLANGE THK.)	1

MAHINDRA GYROVATOR SLX

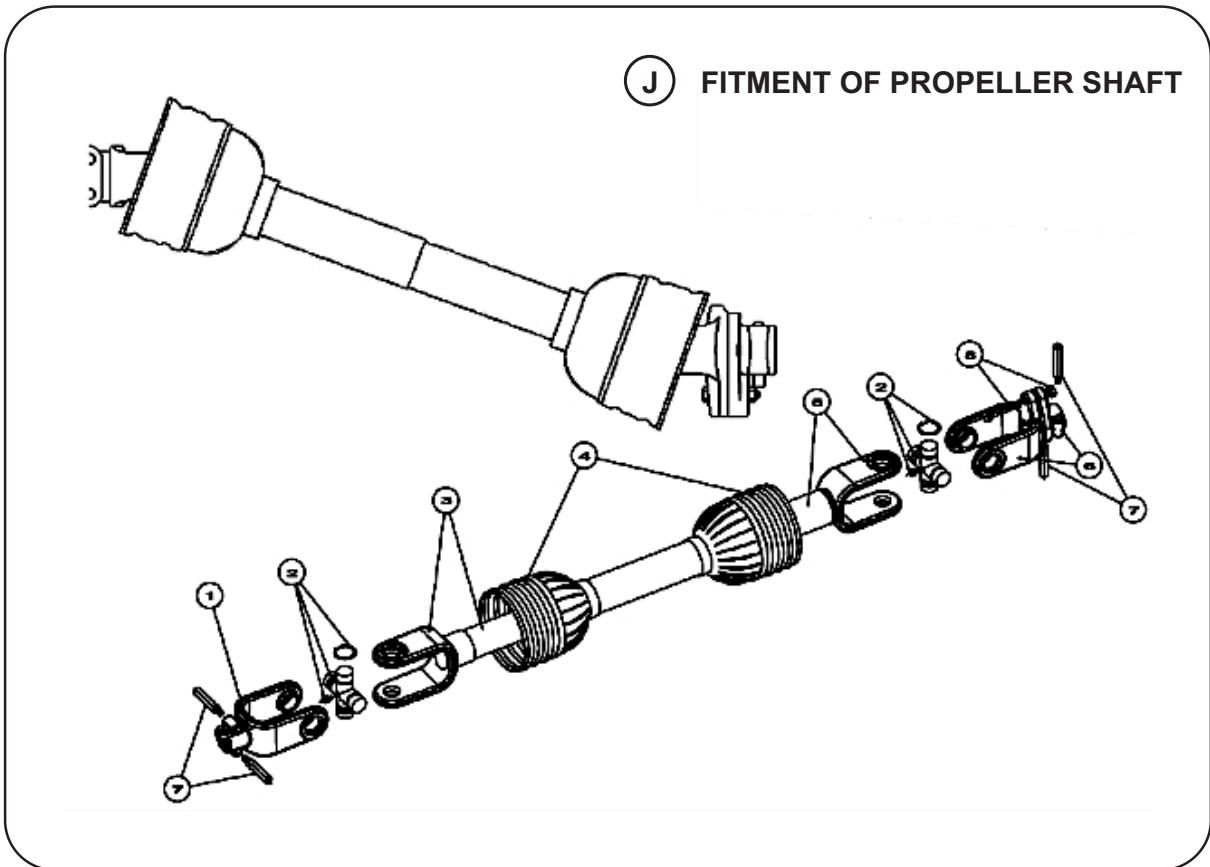
ABBREVIATION : M - METER,RH-RIGHT HAND SIDE,LH-LEFT HAND SIDE

I) FITMENT OF ROTOR SHAFT ASSEMBLY

① FITMENT OF ROTOR SHAFT ASSY



J) FITMENT OF PROPELLER SHAFT



Mahindra
Rise.

MAHINDRA & MAHINDRA LTD.
FARM EQUIPMENT SECTOR, VILLAGE CHAPPERCHERRI,
P.O. LANDRAN, SAS NAGAR, MOHALI 140307

Toll Free Number : 1800 425 1624
Always Insist on use of Genuine Spare Parts Procured from an Authorized source