



SINGLE ROW MAIZE CHOPPER

KE 120 SINGLE ROW MAIZE CHOPPER
User and Service Manual



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INTRODUCTION



We thank and congratulate you for choosing our machine. We believe that you will save time and your productivity will increase with the help of our machine. We are sure that, you will have minimum defects and have perfect results with this excellent machine that manufactured with the eperience with 15 years and a careful work of us.

This user manual will give you information on how to operate and adjust your machine appropriately. To protect you from accidents, this user manual should be read by all employees, service providers and end users. This way you will protect yourself from any unexpected problems and expences.

We beleive that you will use your machine for a long time without any problems. We will be happy to help you for many years with our after sales service.

Years Warranty:

Our all machine have 2 years warranty in the conditions that declared on the manuals and if the user use the machine according to the directions that declared on the user manuals.

This warranty falls void on the conditions that unusing the original parts and if the user don't inform our dealer regarding repairment.

1. TECHNICAL SPECIFICATIONS

Total Length of the Machine	3900 mm
Total Width of the Machine	2400 mm
Total Height of the Machine	3380 mm
Cutting Width	650 mm
WorkingCapacity	20-25 tonne/hr
Number of Blades	12 pcs
Needed Tractor Power	50 Hp
P.T.O.	540 rpm
Working Speed	8-10 km/hr
Weight of the Machine	600 Kg

3. PREPERATION FOR DELIVERY

3.1. THINGS TO BE CAREFUL ON LOADING AND TRANSPORT

Machine should be protected from frictions and hard knocs during loading.

- Needed fixing materials should be used for the protection from the frictions and hits during loading&transport.
- Machine should be like in the diagram during the transportation.

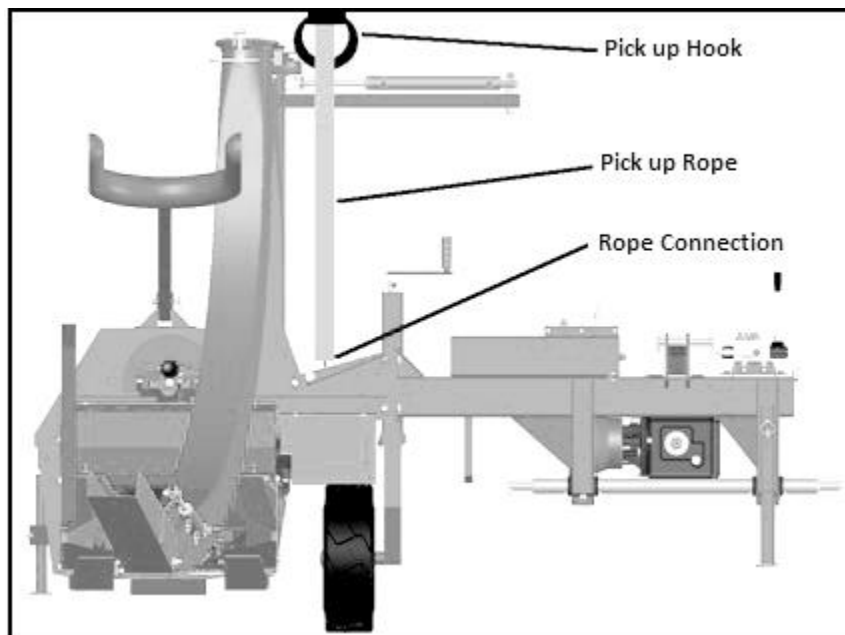


Diagram 1 Transportation

3.2. MACHINE'S MAIN AND OPERATIONAL PARTS

To operate the machine properly first of all we should know the principle of operation of the machine and functional parts of the machine. In this section we look at the machine's main parts and their duties. In the functional parts there are 5 main parts below;

1. Main Body,
2. Side Body,
3. Furrow,
4. Chimney,
5. Jack

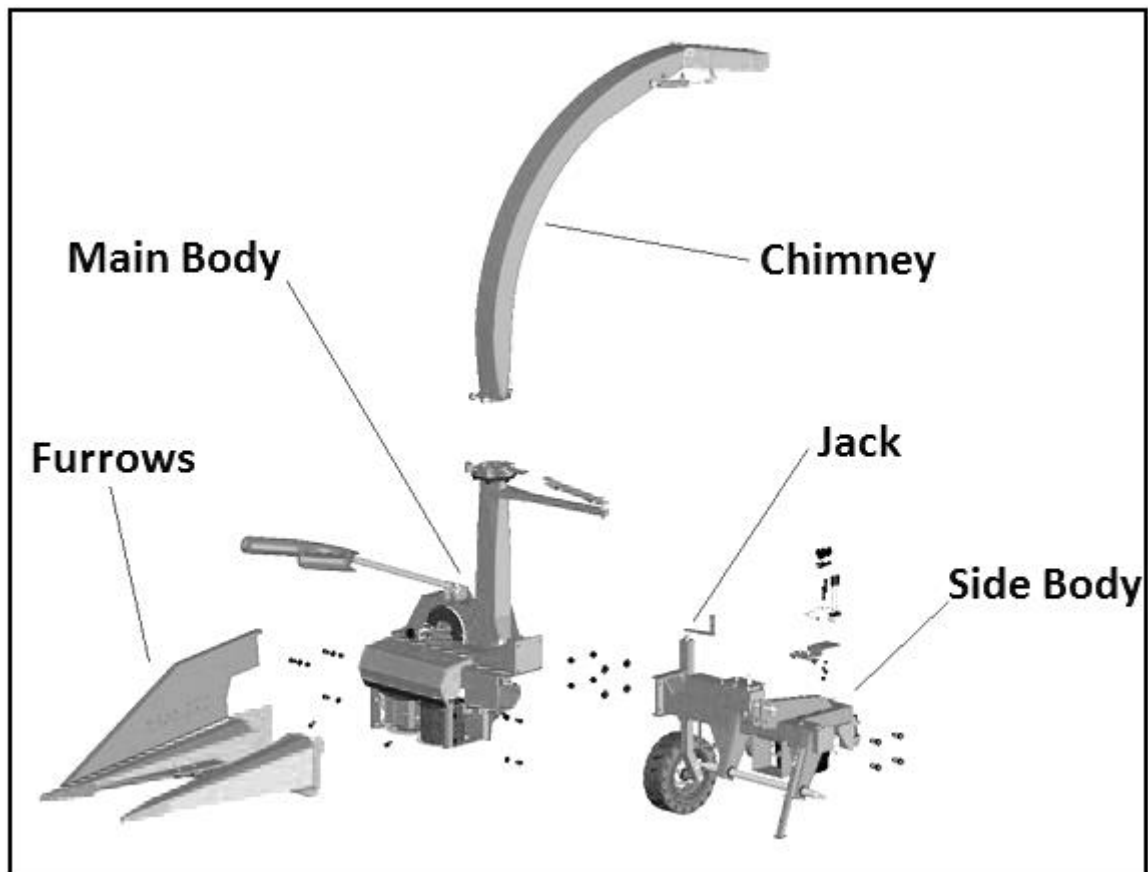


Diagram 2 Main Parts

3.2.1 MAIN BODY

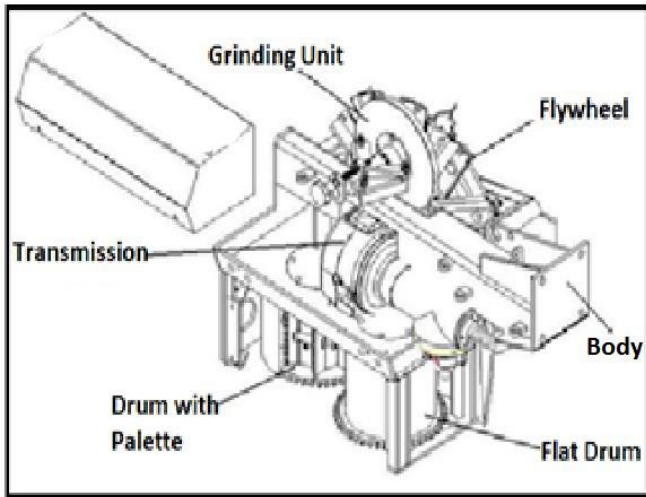


Diagram 3 Main Body Parts

Combines of Transmission, Flywheel, Grinding Stone, Flat Drum, Drum with Palette and winnow.

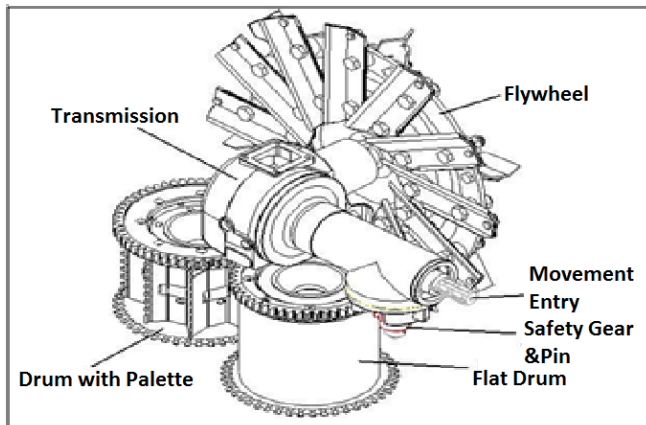


Diagram 4 Main Body Details

In this section the parts consist of corn intake mechanism and grinding Stone. The grinding Stone is used to sharpen the blades. All of this operated by the movement of middle spindle. And all these are mounted on the main body.

3.2.2 BODY

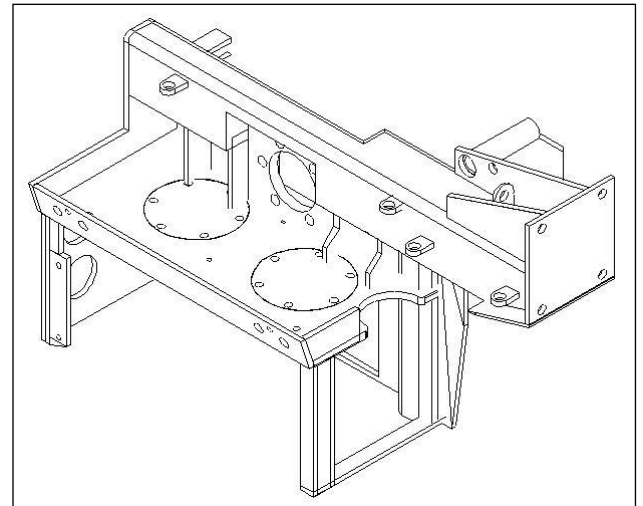


Diagram 5 Body

The body is a main part of the machine and combines of drums, transmission, grinding Stone and flywheel.

3.2.3 TRANSMISSION

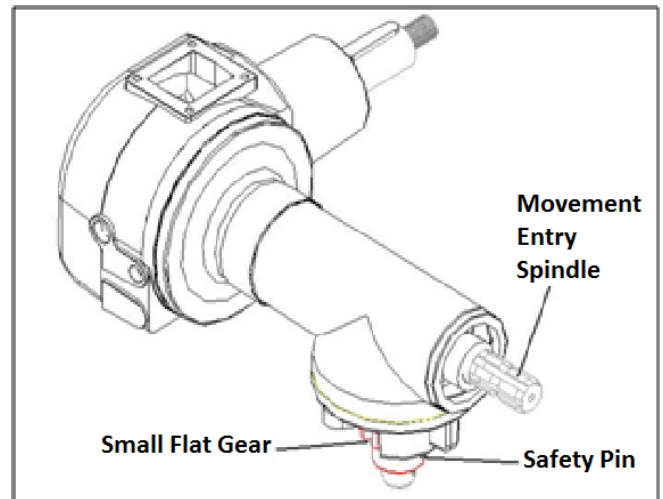


Diagram 6. Transmission

It's a special gearbox that consists of gears that turns into the ~800 rpm/min. that taken from the middle spindle for the proper rpm to the drums and flywheel .

It carries small flat gear and safety pin to protect the gearbox against damage and jam.

3.2.4 FLYWHEEL

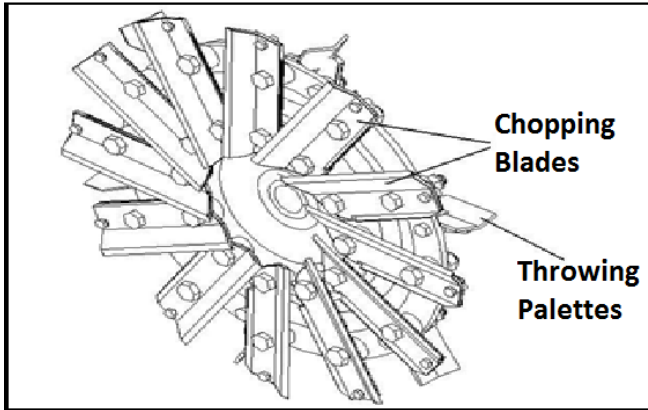


Diagram 7. Flywheel Group

The flywheel mounted on main body is powered by the transmission. By the cutting blades and throwing palettes, the corn silage is then blown to chimney. There are 12 pieces cutting blades and 12 pieces comb plate and 6 pieces throwing palettes on the flywheel.

3.2.5 GRINDSTONE

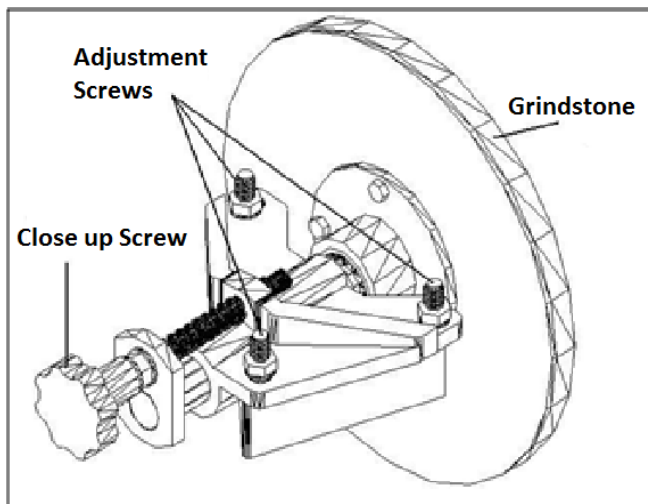


Diagram 8. Grindstone

The blades on the flywheel can go blunt in time, so they need to be sharpened. For that reason the grinding unit is mounted on the machine. The grinding stone that normally is not in touch with blades, is only used when the blades need sharpening, and this can be done by adjusting the adjustment screws.

3.2.6 FLAT DRUM

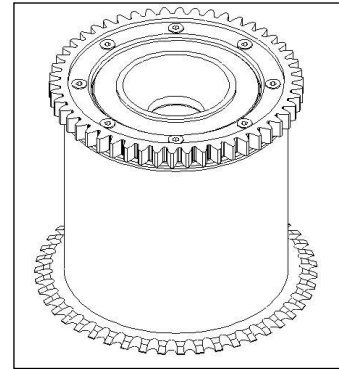


Diagram 9. Flat Drum

Flat drum takes the movement from small gear by the gearings and transmits the movement to the drum with palette. The gears on the bottom of drum are used to harvest the corn.

3.2.7 DRUM WITH PALETTE

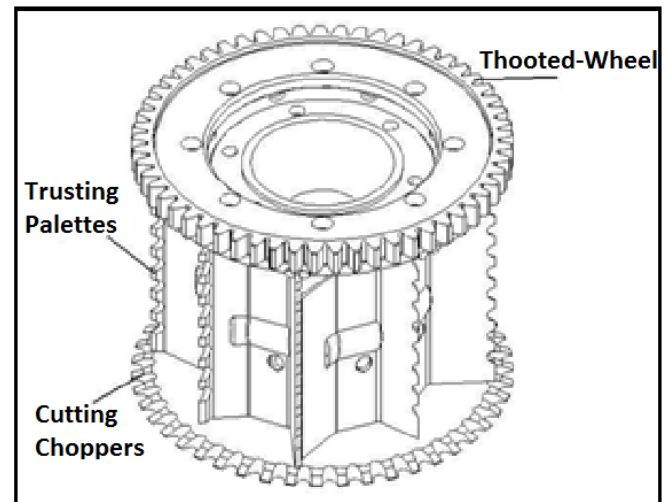


Diagram 10. Drum with Palette

Takes the movement from the flat drum by the gearing on it. The sharp gears on the bottom harvest the corn with counter parts on the flat drum. Then the steel palettes throw the corn into the harvesting bowl.

3.2.8 WINNOW

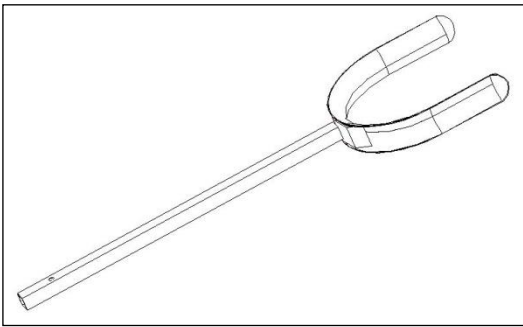


Diagram 11. Winnow

Winnow is for to pack the corns properly that will go between furrows.

3.2.9 SIDE BODY PARTS

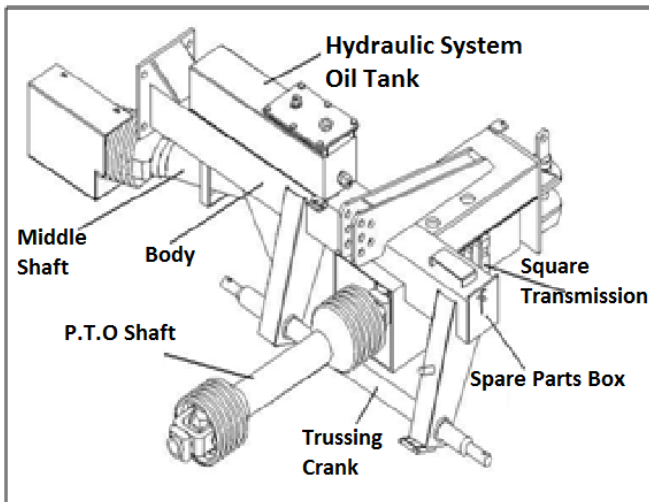


Diagram 12. Side Body Parts

The machine's movement is provided with connecting the P.T.O. shaft to the tractor. Side body is the part that combines the parts that transmits this movement. Also in this part the oil tank of hydraulic direction arm which remotes to the chimney exists. Also in this part the toolbox to put your tools exists.

3.2.10 SIDE BODY

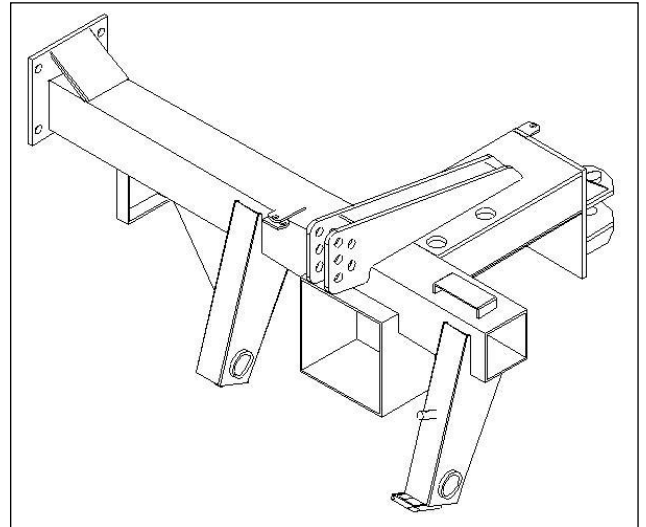


Diagram 13. Side Body

The other parts are all maunted on this. It is manufactured from hard steel according to required quality.

3.2.11 SQUARE TRANSMISSION

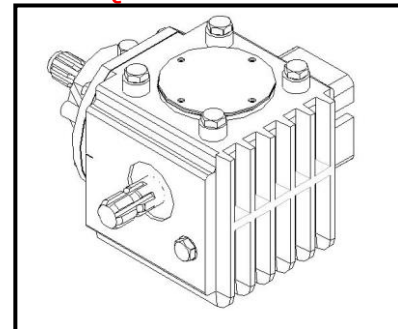


Diagram 14. Square transmission

It's a gearbox that converts the first movement by P.T.O shaf to the required rpm for operating machine.

3.2.12 P.T.O.SHAFT

It is used to provide movement and power. It has a plastic cover to prevent accidents while operating. The functional parts on the P.T.O shaft should be lubricated at times.

3.2.13 HYDRAULIC SYSTEM

The energy to move the chimney and the hat parts is with the hydraulic system. For this purpose oil tank of hydraulic sytem, direction arm, pump, pistons and hydraulic hosed is mounted on the system.

3.2.14 PULLING CRANK

It's a part that connects the machine to the tractor. While connecting the machine to the tractor, trussing arms should be mounted to the pulling crank safely.

3.2.15 SPARE PARTS BOX

It's used for the tools that used on the machine's mounting. For example you may put your cleaning material, gloves, parts, tools exc...

3.2.16 FURROW

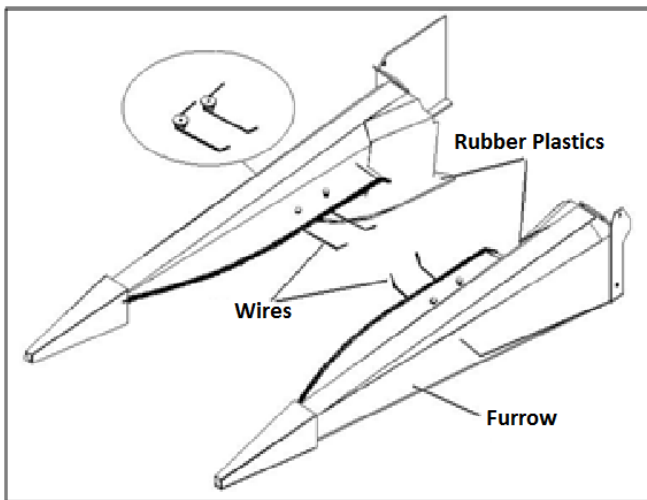


Diagram 15. Furrow

This part makes sure that the corn is tranmitted in the machine in rows sequences. It combines of furrow plate, springs, spring chock and tyres.

3.2.17 CHIMNEY

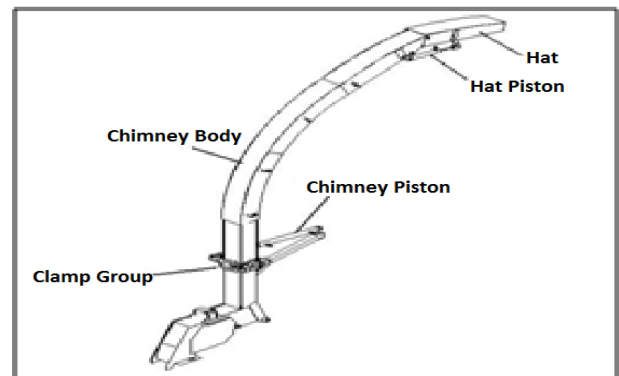
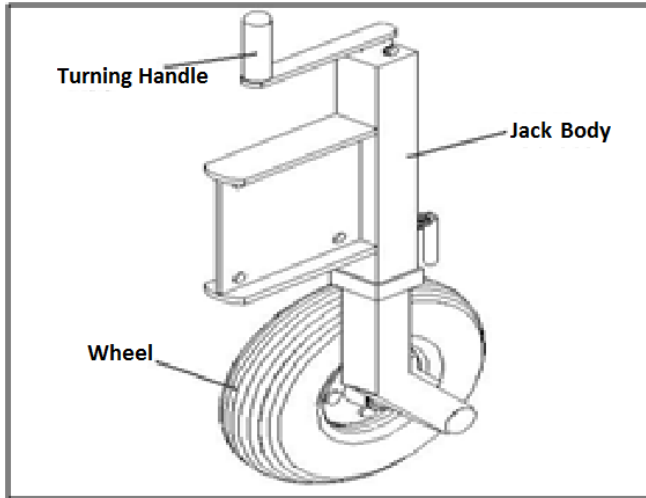


Diagram 166. Chimney and Parts

It's used to blow the chopped maize to the trailer. It has chimney body, hat, clamp, chimney piston and hat piston. It can be rotated around itself by piston and the chimney can be steered with hydraulic piston. The hat on the chimney can also be steered up or down according to the trailer.

3.2.18 JACK*Diagram 177. Jack*

The working height of the machine can be adjusted by jack. Also you can adjust the weight comes on the tractor trussing arms.

- a) Main Body,**
- b) Side Body,**
- c) Chimney,**
- d) Furrows,**
- e) Jack,**
- f) PTO Shaft,**
- g) Hydraulic Direction Arm,**
- h) Transmission Cover,**
- i) Cover of Middle Spindle.**

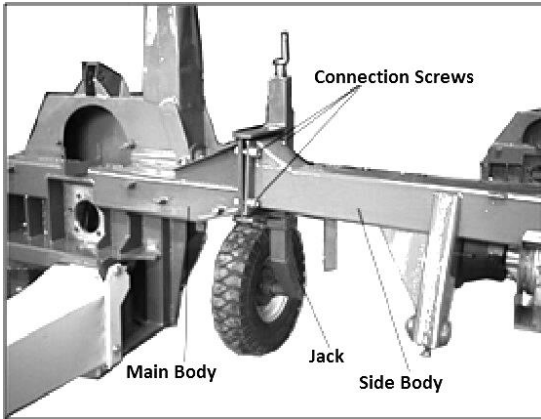
Things to be done for assembly

Because of the machine will arrive to you as semi mounted, to operate the machine you must assemble some of parts yourself. If you follow the steps below you will have no problem whatsoever;

- 1) The jack should be mounted between main body and side body with the 4 pcs screws(M16X45).

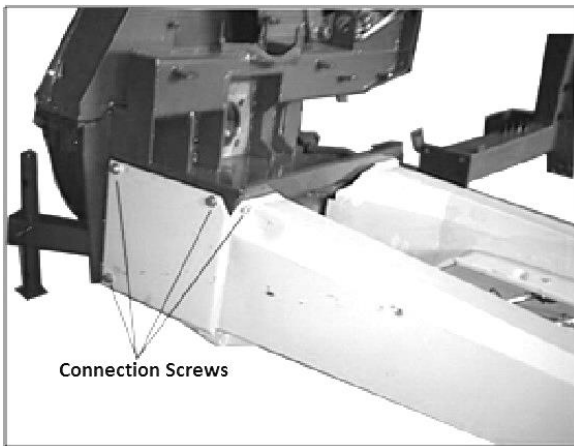
3.3. ASSEMBLY OF THE MACHINE**3.3.1 SETTING THE MACHINE FOR ASSEMBLY**

The machine will come to you as semi mounted according to transportation. Usually the units below are transported separately;

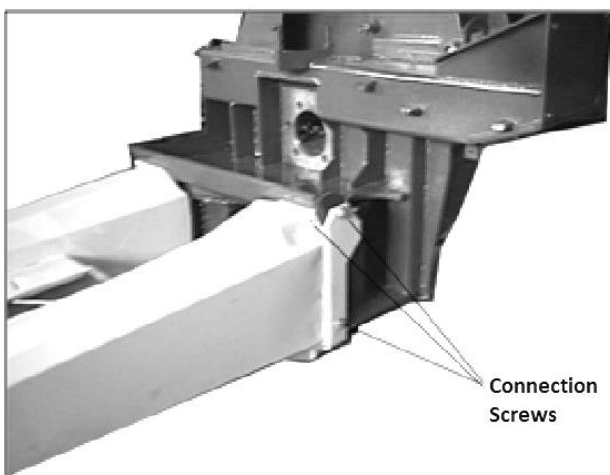


Picture 1 Connection of the main&side bodies

2) To connect the furrows to the main body, the cover of transmission should be opened.

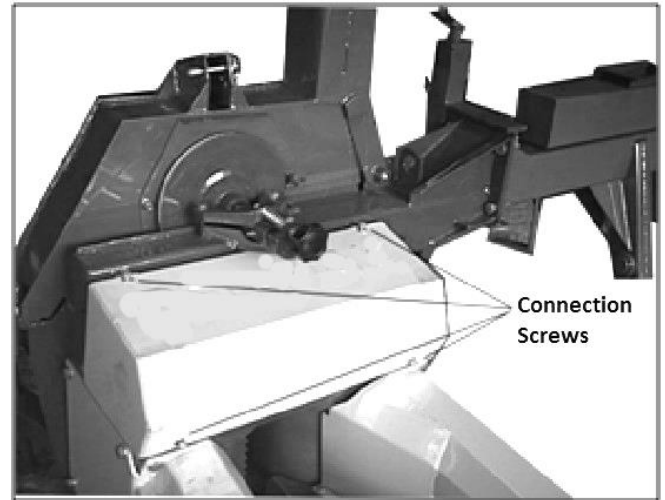


Picture 2 Furrow connection screws-Right



Picture 3 Furrow connection screws-left

3) Mount the transmission cover to the main body with 4 pcs screws..



Picture 4. Transmission Cover

4) Mount the middle shaft between transmission and square transmission as the ratchet side of the shaft is on the transmission.

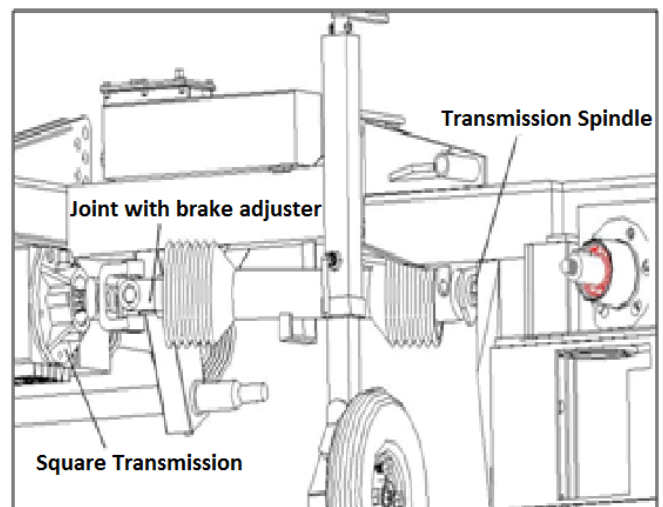
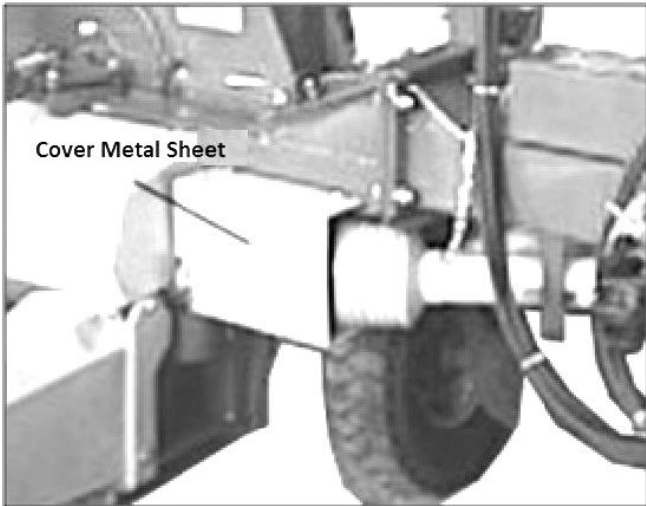


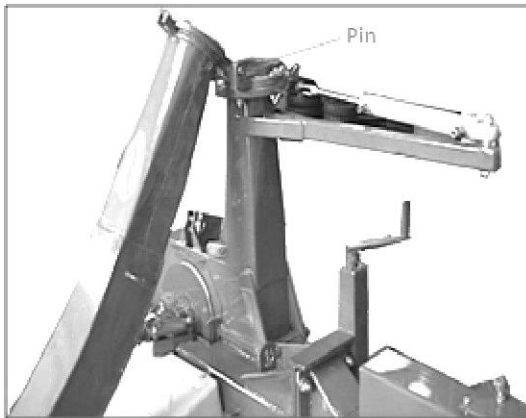
Diagram 18 Connection of the middle shaft

5) Put the cover of the middle shaft to the ratchet side of it and screw it.

Mount the chimney to the main body with the pin on clamp. Plug the split pins on pin.

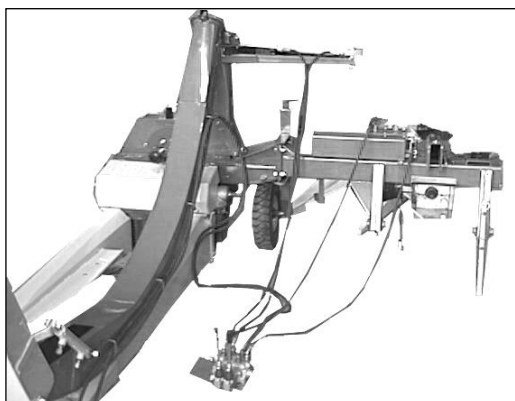


Picture 5. Middle shaft protection cover



Picture 6. Chimney clamp&pin

- 6) To mount the hydraulic system, take down the chimney by unscrewing the screw on clamp ring. Hydraulic hoses are already fitted on the side body. Mount the free sides of the hoses to the pistons on the rotation and the hat.



Picture 7. Connection of the Hydraulic System

- 7) Mount the winnow.

3.3.2 CONNECTION OF THE PULLING CRANKS TO THE TRACTOR CONNECTION CRANKS

Put nthe machine on flat ground and reverse the tractor close to the machine. Adjust the level of the connection crank and attach the cranks respectevly left bottom crank, right bottom crank and upper crank to the machine. The pulling cranks' connection places are shown below.

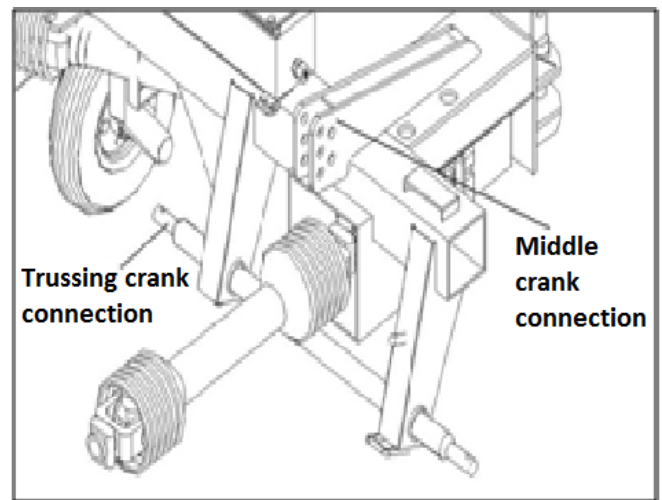


Diagram 19 Trussing cranks connection places

3.3.3 CUTTING&ASSEMBLING THE SIZE OF THE P.T.O SHAFT ACCORDING TO TRACTOR

Tail shaft position differs according to tractor. So, telescopic P.T.O. shaft's length should be adjusted(shortened by cutting or not). To determine the right length , follow the instructions below...

The maximum shaft length should be used while running the machine. If you need to shorten the shaft, cut it from both(inside and out) equaly.

- Tractor's trussing arms should be attached to the machine.
- If the P.T.O shaft is connected to the machine, unconnect it.
- Measure the distance between tractor's tail shaft and the square transmission shaft.

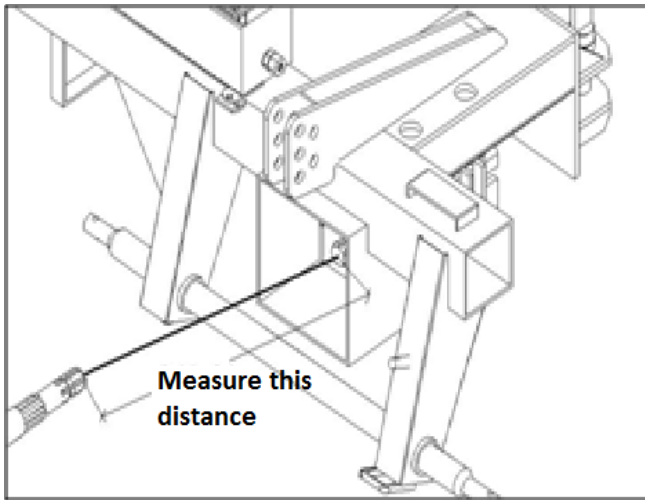
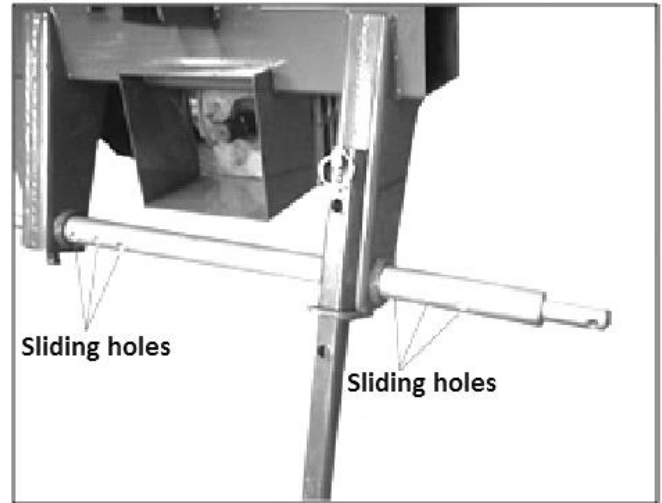


Diagram 20 Detaction of the length of P.T.O Shaft

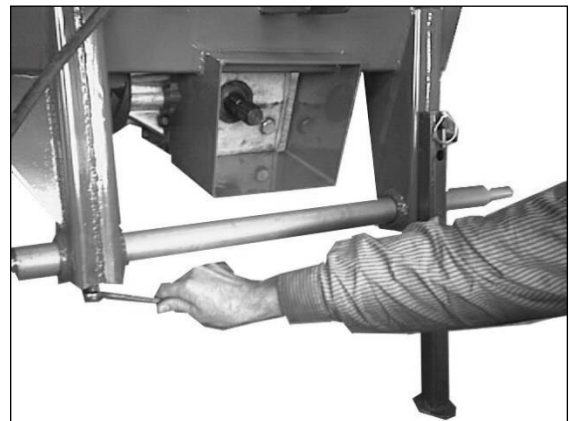
- Measure the P.T.O shaft's length and calculate the difference to shorten.
- Shorten the P.T.O shaft's length from both(inside and out) with a saw.
- Clean the burrs on the shaft's end that occurs while cutting.

3.3.4 SETTING THE DRAWBAR ACCORDING TO THE SIZE WIDTH OF THE CORN ROW

There are 3 screw holes on drawbar.



Picture 8. Drawbar sliding holes



Picture 9. Fixing the drawbar

Shift the drawbar and tighten the screws.

3.3.5 ASSEMBLING OF THE HYDRAULIC DIRECTION ARM ON THE TRACTOR

Mount the hydraulic direction arm to the tractor where the best place for the operator. This place is usually can be the right mudguard of the

tractor. There are 2 pcs M10x35 screws on hydraulic direction arm. Drill 2 holes with 10 mm diameter on mudguard and attach the direction arm.

3.4. OPERATING THE MACHINE

You should attach the machine to the tractor's trussing arms, connecting all the parts together as described in chapter 2.

Before attaching or detaching to the 3 point connection arms to the tractor, make the 3 lift control position free or as free as possible. Be sure that the connection of tractor should be suitable for silage machine.

Don't forget that it is dangerous to be between the drawbar while the machine is operating . you can get caught in between and injur yourself.

There are reaping discs and rotating parts at the bottom of the silage machine. So you must make sure that the machine has come to a complete stop before you go in between the drawbar and also you must be in a safety distance away from the flywheel to avoid accidents.

You must make sure that the three point connection position is locked to a secure position.

When you lift the machine to unroad position, the tractor should either be in idle or lowest position.

The mechanism that in takes the corn (rollers, augers and similar parts) are on function at all times during the operation, for this reason you should not go near the machine and you should watch it from a safe distance at all times. This rule applies to all functional parts of machine.

3.4.1 Operating with P.T.O

* For a safe operation with the machine, allowed P.T.O speed should be succeeded. Only the P.T.O shafts which is suggested by manufacturer must be used.

* Never use the shafts without their plastic covers. Make sure that they are not damaged and are in functional condition. And also make sure that the P.T.O shaft is installed properly. Asla universal shaftı, shaft koruyucusu

* P.T.O shafts should be attached and detached only when the tractor's trussing arms are detached. Turn off the engine and take the key out.

* Never exceed the maximum P.T.O speed that required.

* Always make sure that the P.T.O shaft is connected in correct and confident way. The shaft cover should be secured with a chain against rotation.

* The proper way is not to stop the shaft rotation with the tractor clutch. The tail shaft control lever should be at off position. Stop the engine and take the key out

* Make sure that there is nobody around machine's working area, before attaching the shaft to the tractor.

* Before attaching the shaft to the tractor, make sure that the P.T.O speed and its turning way should be the same with the tractor.

* Don't allow anybody to close the shaft while running.

* The silage machine and the P.T.O shaft should only be inspected, lubricated, cleaned or settled while it is detached from the tractor.

* Give attention to the flywheel self centrifugal rotation effect before detaching the P.T.O shaft. Don't get close to the machine while any parts of the machine is running. Wait until the machine comes to a complete stop before doing anything.

* Put the P.T.O shaft to it's place while the machine is being detached from the tractor. During transportation of the machine take out the P.T.O shaft.

3.4.2 OPERATING WITH HYDRAULIC DIRECTION ARM

Hydraulic system has very high pressure on it. Take the required preventive action while searching for any leakage(like cardboard).

Any leakage could cause hazardous infections because of the high pressured oil. See your doctor if you have any affects.

Get the oil pressure level into low on both the machine and tractor before beginning with the hydraulic system. Get the machine close to the ground, turn off the machine and take the key out.

Make sure that the hydraulic hoses are fitted with correct fittings. It is not a big problem if you make wrong connectios. But the controls will function in opposite directions. This can cause injures, so you must be careful.

Hydraulic connection fittings should be clean at all times.

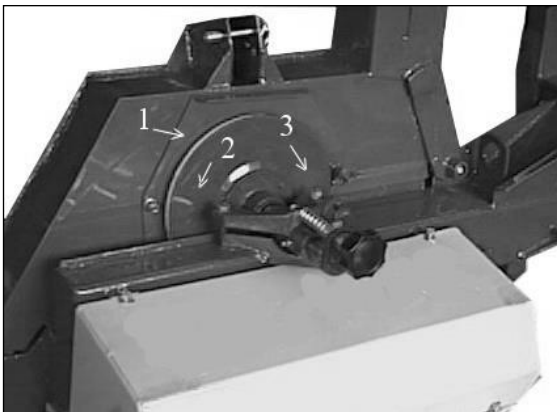
Use only recommended oilsand store them in their tanks. When you are changing the oil, be careful, it could be hot and burn you. Destroy the used oil in a correct way.

3.5 THINGS THAT THE OPERATOR SHOULD DO

3.5.1 SHARPENING&SETTING THE BLADES

Sharp blades prevent the loss of power and make the chopping well. Keskin bıçaklar güç kaybını önler ve iyi kesmeyi sağlar. The blades can be sharpened in a few minutes wth the Standard equiped grinding unit.

Caution! Sharpening the blades always needs extra attention. So, you must have your eye protection on you at all times.

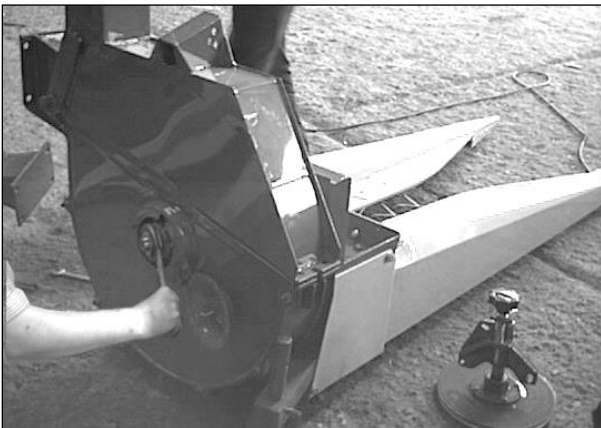


Picture 10. Sharpening the Chopping Blades

Doğru ve tehlikesiz bileme yapmak için;

- Don't neglect to use eye protection during sharpening operation.
- Make sure that the flywheel that has the cutting blades have stopped completely.
- Open the cover in front of the grinding Stone. Bileme taşının önündeki kapağı açınız (Chapter 1),
- Move the grinding Stone close to blades until it touches them. (Chapter 2)
- Move the grinding Stone two spaces back with the movement mechanism. (Chapter 2)
- Set the tractor's tail shaft speed of tractor as 350 rpm for sharpening.
- Move the blades towards the grinding Stone carefully until they touch it.
- Don't let the grinding Stone turn in its axis, instead it should oscillate by itself and begin to sharpen (Chapter 4)
- If the grinding Stone turns around its axis, set the setting screws on the grinding unit. This operation should be made until grinding Stone stable and stop turning around its axis. (Chapter 3),
- The sharpening time should be around 5-6 minutes and sharpening should be done in every 20-25 hectares.
- You must take the grinding Stone back to its normal place. Turn off the tractor and let the flywheel stop when you finish sharpening operation.
- Close the protective cover and advance the Stone unit until it touches to the cover to make it sure.

For productive silage, you must adjust the distance between chopping and fixed blades from the nut which is on the flywheel. Makinenin randımanlı slaj yapabilmesi için, Sabit Bıçak ile Ufalayıcı Bıçakların arasındaki mesafeyi Volan Milindeki somunu sıkarak en aza indiriniz. Put on the safety split pin.



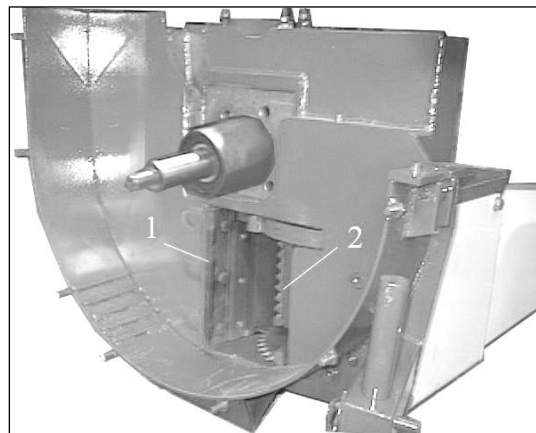
Picture 21. Adjusting the chopping blades

Setting the distance between the chopping and fixed blades is made with tightening of the nut on the axles of flywheel. Open the small cover on the flywheel shaft axles and tighten the nut with its special tool until the chopping blade touches the fixed blade gently. And then unscrew the nut in the opposite direction until the blades can turn without any contact. Then put the safety pin in its hole again.

Caution! Always take the tool out and close the small cover!!!

3.5.2 Changing The Fixed Blade&Scrapers

The flywheel which has the chopping blades has to be taken out to attach or detach the fixed blade and the scraper plate.



Picture 12. Fixed Blade

Fixed blade is connected with three screws and it can be used double sided. The space between fixed and chopping blades shouldn't be over 0.5 mm.

Caution! Wear protective gloves when you work with cutting blades!!!

Scrapper plates should work along the geared plates(Chepter 2). So, it should touch the geared plates gently.

3.5.3 Installing&Adjusting The Tray Blades

For a nice quality cut, the tray blades should always be sharp. In time when there is space between the tray blades, you should adjust them by supporting them with roves.

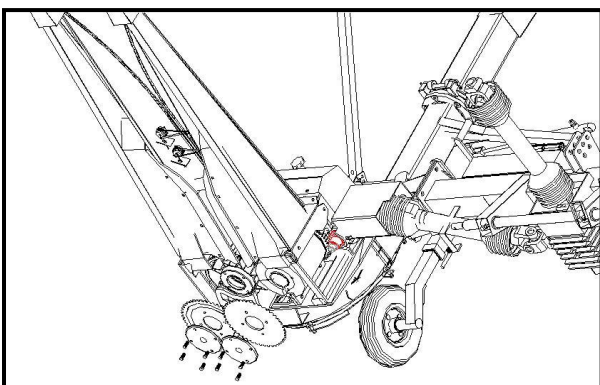
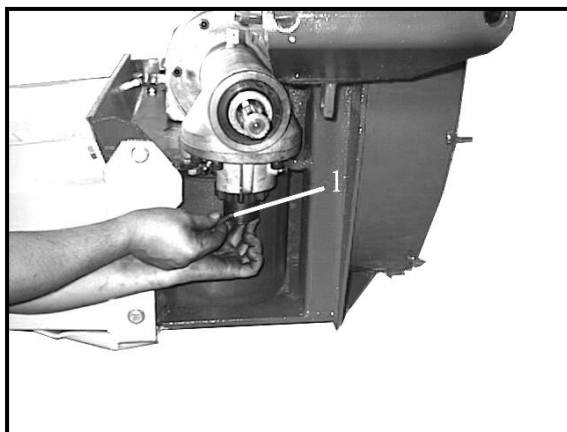


Diagram 21. Instaling&Adjusting The Tray Blades

The tray blades can be adjusted by the screws shown in the diagram above. When the blades are blunt, replace them.

Caution! Use protective gloves while replacing the tray blades!!!

3.5.4 PROTECTION OF THE MECHANISM THAT INTAKES THE CORN(SAFETY PIN REPLACEMENT)



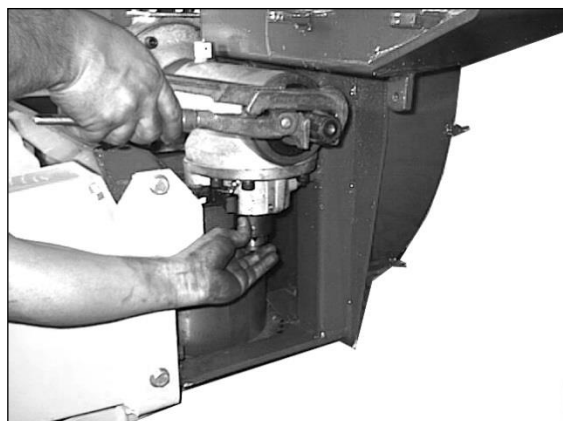
Picture 13. Safety Pin

A safety pin is inserted to the pinion gear axes to protect the chopping blades and feeding unit from overloads(in figure 1 as above)

The safety pins can be replaced easily. Open the cover of the gearbox, take out the old pin and replace with new. Do not forget to take out the cut pin first.

Use only the original safety pins. 4 spare safety pins are given with each machine.

Apply some Grease on the pinion gears and shaft when you replace the safety pins.



Picture 14. Replacing Safety Pin

To put on the new pins in the correct way, turn the gearbox manually for adjusting the pinion gear hole.

4. SAFETY&ACCIDENT PREVENTATION

While working with the silage machine, safety is the most important issue. So, read the instruction below carefully to avoid accidents;

Basic Rule; Before taking to service to the silage machine, the operator should see if the corn harvester and the tractor is suitable or not for traffic rules. All the safety rules and traffic rules should be followed carefully.

- Before operating the machine, the operator should know how to use the control tools and the machine. Be sure that all the protective covers are in their places.
- Check around for unexpected objects. Make sure that you have a clear sight at all times and your sight should not be effected at all times(especially you should be careful from the children around)
- If you need to reverse and go back side, ask for help of someone.
- Never touch to the operating machine.
- Never let anyone to operating machine. It's definitely forbidden to carry anyone on the machine.
- The operator should never wear wide clothes. It can get caught in between the moving parts.
- Frequently check the covers and safety guards and replace them when necessary.
- Keep the machine clean at all times against safety operation.
- Always raise the jack when in park position. Lower it before running.
- It is dangerous to attach and detach the machine to the tractor. So, you must take extra care.
- Give attention to the maximum load capacity that authorized.
- Before operating the machine, make sure that the machine is suitable for the directions for use which the manufacturer declared at all times.
- Check the reflectors and lights before transportation. Test the brakes. And also control all the covers.
- Put all the control equipments (cable,chain,lever ext.) in suitable place.
- Never leave your seat during working.
- When working, consider farm and land conditions . When working in bent lands take extra care on turns. On step road do not step on the clutch and change gears.
- Mount the silage machine properly. Machine and its equipment weight could cause different driving,steering or braking ability.
- When you driving and are turning on road, take extra care and be slow.
- Do not let people get in range where chopped maize are thrown. Things like Stone can be thrown and injure people.

- Do not let people stand between the machine and tractor before pulling the handbrake.
- Power tools and equipments like hydraulically powered ones could cause injuries.
- Do not leave the machine until the machine is in safe. Lower the machine until all parts of the machine touch the ground. Turn off the engine and take the key out.

4.1 INSTRUCTIONS TO USE ON ROAD

Traffic rules have to be obeyed on the public roads. It's the operator's responsibility to make sure that the use of the tractor and silage machine is used properly. Because of that you should look at protection gears, lighting system and brakes rules.

Here are some general rules;

- The operator and the owner of the tractor and the machine are responsible from the use on road rules. For that reason check the lighting system and brakes rules.
- Silage machine obstructs some of the lights and number plate of the tractor, for this reason replace them.
- Chopping maize transportation unit has to be settled parallel to the tractor and the silage machine has to be mounted on the tractor properly. You must not forget that the machine and its balancing weights, they will effect the braking and steering abilities of the tractor.
- Be sure about the balance of the tractor, because the machine weight can raise the front of the tractor and if necessary put weights to the front of the tractor.
- Obey the allowed weight limits of the tractor and rear axles.
- Cover sharp points of the machine when you drive on public roads. Check related traffic regulations in your country.

4.2 MAINTENANCE&LUBRICATION INSTRUCTIONS

Maintenance includes the things that could be done to protect the machine and its usage life. If the maintenance of the machine is done on time, you will not face any accidents and you will also extend the usage life of your machine.

Caution! Check all the screws and nuts after 3-4 hours of work. Tighten them if necessary.

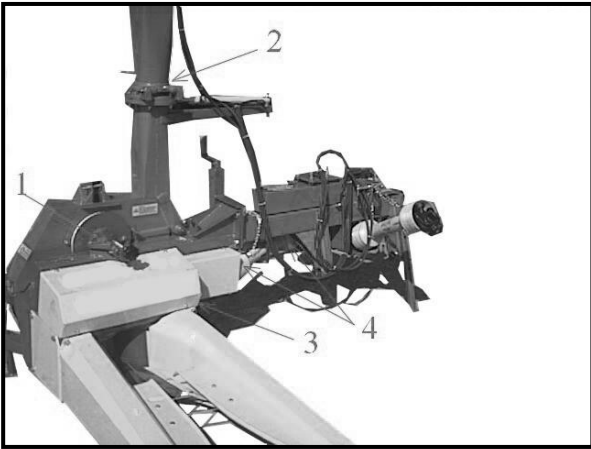
Cleaning of the machine is also important as oiling. check the machine at the end of the season. Chopping and fixed bladed should be checked against fatigue and corrosion. All the parts that taken out should taken out in correct sequence. Oiling should be done as specified on oiling card on the machine.

Caution!

- *Always wear protective gloves while working with cutting and sharp objects..*
- *Never use the machine in a closed area.*
- *The air pressure of the tyre of the machine should be 3-4 bars. Check the tyre pressure periodically.*

4.3 REQUIRED MAINTENANCE

Our silage machine is designed and produced to have minimum maintenance requirement. The points on the machine which are required maintenance are listed below.



Picture 15. Lubricators on the machine

The Grease lubricators shown in the Picture above are;

- 1- Grinding Stone lubricator.
- 2- Chimney lubricators(2 pcs)
- 3- Lubricator on pinion gear
- 4- Lubricator on shaft joints

All joints should be lubricated with Grease.



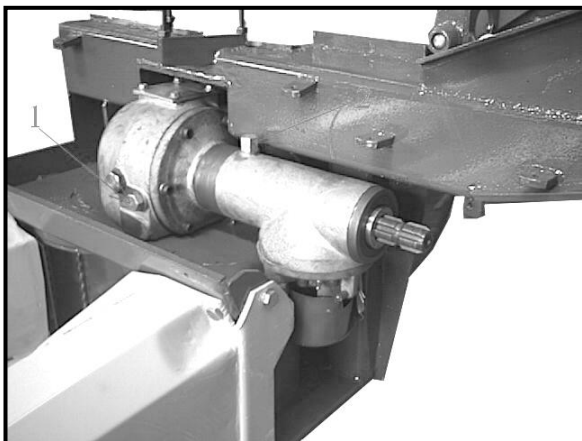
Picture 16. Pulling apart the flywheel

The flywheel should be taken out at the end of the season and should be greased with the high level Grease to avoid any damage on the shaft. The plane faced feeding disc and geared feeding disc should also be greased.

4.4 Lubrication to be used

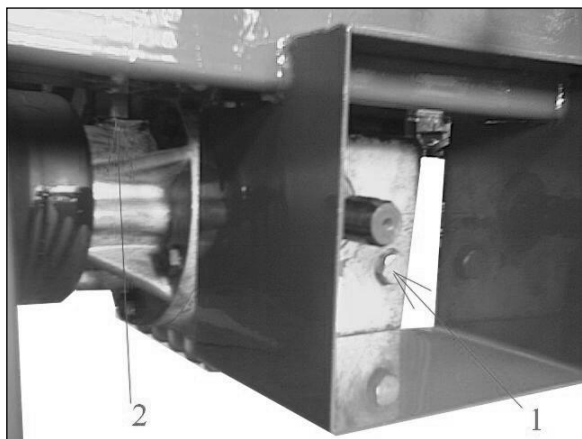
Recommended oil&grease;

<i>Where</i>	<i>Oil/Grease type</i>
Lubricators	Universal Grease; Lithium DIN 51502 ve 51825 ` KP2K
Transmission	MIL-L-21058, AGIGL5 standard SAE 90
Square transmission	140 Volvodin



Picture 17. Oil level of transmission

The oil level of transmission and square transmission should be checked once a year. To see the level of oil pull the plug(1). If the level is low, fill the oil from plug(2).



Picture 18. Oil level of square transmission

The both transmission's oils should be changed in every 2 years.

Caution! Grease all the lubricators in every 8 hours with high degreed Grease. Clean all the lubricators before greasing. Protect all bright parts like chopping blades, tray blades and disc spindle with Grease

5. TROUBLESHOOTING

Follow the instructions below to solve the trouble you experience;

<u>Problem</u>	<u>Instruction</u>
Uneven Cut	Sharpen the blades, chopping blades(flywheel) should touch the fixed blade gently
Taking materials in the mechanism not turning	The safety pin is broken,replace it

Rules to be observed on repair :

- All repairs during warranty period should only be done by our dealers.
- You should do exactly what the user manual tells you. And do not to set the machine to other settings .
- All spare parts that wear and their because of time are not covered under warranty.

6. SERVICE

All spare parts for your machine are provided by us.

General Safety Rules:

CLOTHES

- Wear proper working clothes. Never wear wide clothes at all. These will get caught in between turning parts of the machine.

MACHINE

- If you use the machine for the first time, make sure you read the user manual carefully. If you have any doubts, get in contact with your provider.
- When you transfer the machine, make sure you lift the machine from correct positions that shown in this user manual.
- Do not overload the machine.
- When you connect the machine to the tractor, make sure you are close as possible to tractor.
- Make sure the loading should be done homogeneous to the trailer. On one axle trailers, when you load the trailer in back side, the trailer's braking ability gets lower. When you load in front side, tractor's front can be go up. Also take the necessary care for overload.
- Make sure you check the machine from time to time for broken parts or covers. If they need replace them.

SAFETY PRECAUTIONS

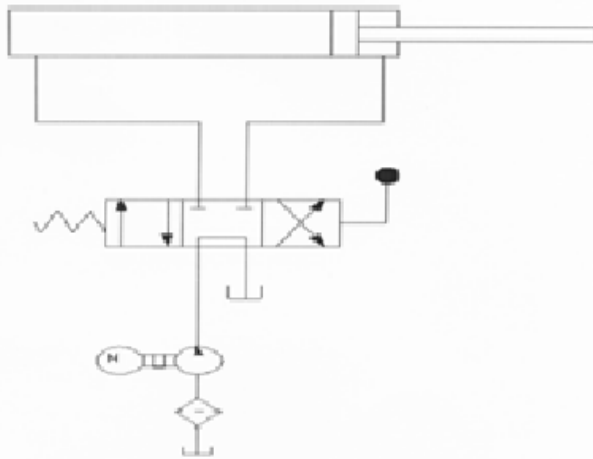
- Do not operate the machine in a closed area. Tractor exhaust gas is very dangerous for health.
- Before you get down from the tractor, switch off the engine.
- Before you make any changes on the machine, be sure the engine is switched off.

- Chopper-fan arrangement should always be balanced. Chopping blades, fan wings should all be fitted. **NEVER OPERATE THE MACHINE IF THERE IS MISSING FAN WINGS OR CHOPPING BLADES.**
- While operating the machine, if you notice any shaking or hear any noise from the machine straight away, switch the machine off and investigate the cause.
- Make ensure the support stand is on the ground before release the machine from the tractor.
- All the protection covers should be mounted and closed while the machine is operating. Non of these covers are unnecessary. It is there for your safety.
- While you are woking with the machine, make sure that you leave a safe distance between you and anyone around you.
- Do not operate the machine over 540 rpm.
- Do not put into service to the P.T.O shaft while the engine is switched off.
- Do not try to start the tractor engine and operate the machine without sitting the driver's seat.
- Before taking out the hydraulic hoses from their places, make sure that there is no air pressure in the hoses. Oil leakage pressure could be dangerous. When you check the pressure leakages, have your protective eye wear and your gloves on you for serious injures. Before working with the hydraulic system, lower the oil pressure. If the oil gets in contact with your skin, it can cause infection.
- Never leave your driver's seat while the tractor is running.
- On bent roads you should be careful of over turning of the tractor and machine.
- Do not go backwards with the tractor while working.

7. HYDRAULIC SYSTEM DIAGRAM

CORN SILAGE HARVESTER HYDRAULIC SYSTEM DIAGRAM

1. CHIMNEY CYLINDER



Cylinder with one crank and double acting

Control valve with 4/3 direction crank

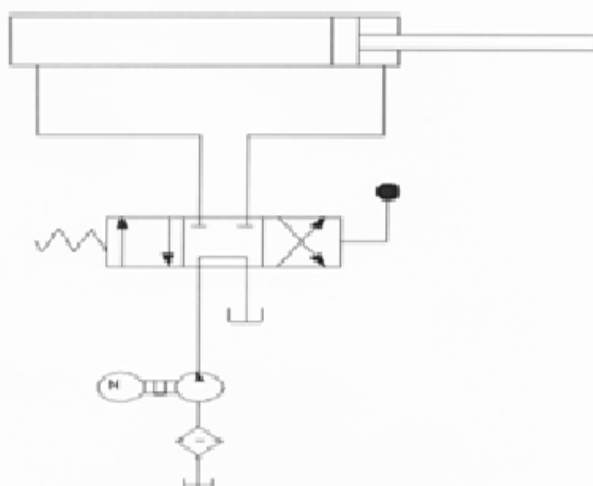
Hydraulic pump

Filter and oil tank

Diagram 35 Chimney Cylinder

CORN SILAGE HARVESTER HYDRAULIC SYSTEM DIAGRAM

2. HAT CYLINDER



Cylinder with one crank and double acting

Control valve with 4/3 direction crank

Hydraulic pump

Filter and oil tank

Diagram 36. Hat Cylinder

