

INSTRUCTION MANUAL



TDF-L

SIDE FLAIL MOWER

CONGRATULATIONS

Dear Owner,

Thank you for buying a SOVEMA manufactured product.

Your new machine is carefully designed and manufactured to give you superior performance and dependable service, if properly operated and maintained.

You will find this machine to be rugged and reliable when matched to the suggested horsepower operating range.

Much time has been invested in providing safety and protection. Please carefully read this manual. It tells you how to safely and easily assemble, operate and maintain your machine.

Be sure that you and any other operator carefully follow the recommended safety practices at all times. Failure to do so could result in personal injury or property damage.

Of course, if you should ever have any problems or questions, please contact your local SOVEMA dealer or contact us at the addresses or numbers indicated in this manual.

SOVEMA manufactures a variety of innovative equipment. If you are interested in reviewing our full line, please contact us.

Thanks for your choice.

Ginettino Mayer
President

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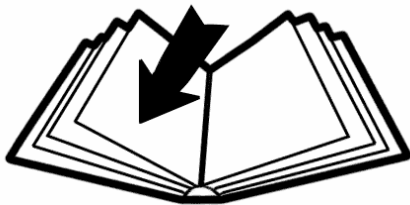
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SYMBOLS

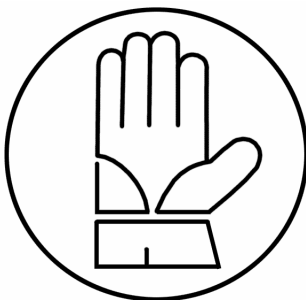
These symbols appear throughout the manual.
Remember their meaning and advice.



MEANS: CAUTION!
YOUR SAFETY IS INVOLVED



MEANS: READ CAREFULLY



MEANS: USE PROTECTIVE GLOVES

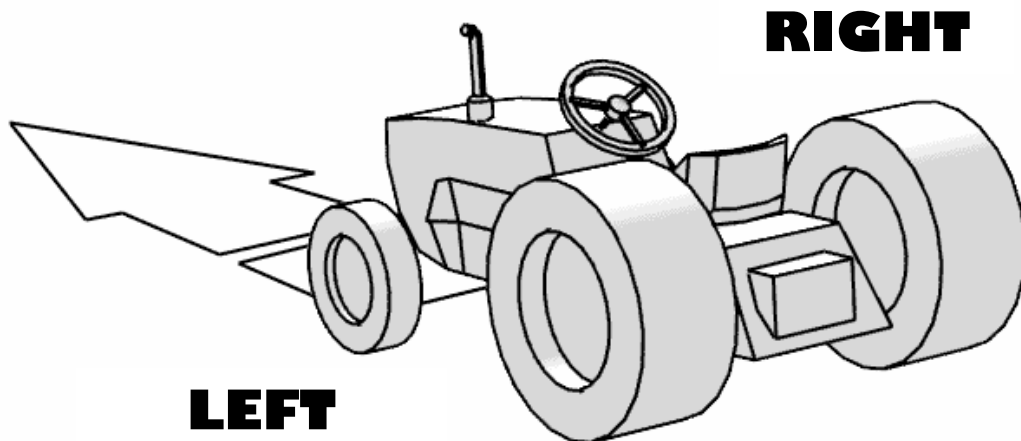
GENERAL INFORMATION



All implements with moving parts are potentially hazardous. The manufacturer has designed the implement to be used with all the safety equipment properly attached. The purpose of this manual is to assist you in safety maintaining and operating the implement.

These instructions have been compiled from our experience. Through this experience and these instructions, you should be able to develop operating procedures suitable to your particular situation.

Illustrations and data used in this manual may vary slightly in some details. Throughout this manual references are made in left and right directions. These are determined by standing at the rear of the equipment and facing the direction of forward travel.



Even if some illustrations in this manual show the machine with safety shields removed for a better view, never operate in these conditions.

BEFORE OPERATING THE IMPLEMENT, ALL SAFETY SHIELDS OR DEVICES MUST BE MOUNTED

SAFETY AND WARNING DECALS



Safety decals on the implement contain important safety warning messages. To prevent injuries we invite the operator to read them carefully and keep them clear. Check that all the decals are on the machine. If not, DO NOT USE the machine and report to the Dealer immediately to get the decals. Decals on the machine are the following and mean:



1

2

3

4



1. Before operating the equipment, read carefully the operator's manual.



2. Before maintenance operation, lower the implement, shut off the engine and read the operator's manual.



3. Do not allow riders on tractor or implement.



4. Do not stand behind the tractor during the operations.



5. Before operating the equipment, read carefully the operator's manual.



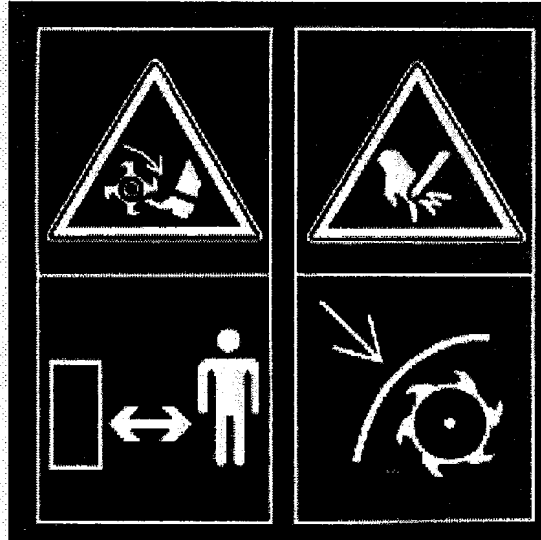
6. DANGER! Entanglement of driveline..



7. KEEP AWAY from driveline in operation: contact can cause death!



8



9

10



11

 8. Danger. Your hands and feet can be injured by moving parts. Keep away from the implement.

 9. Lower limbs cutting danger. Keep safe distance from the implement.

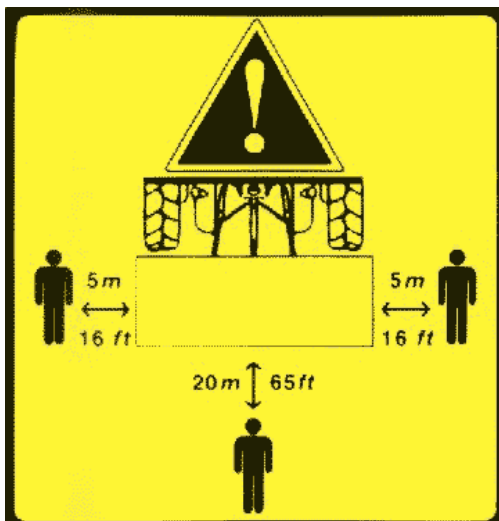
 10. Upper limbs cutting danger. Do not take off the safety guards and keep distance while working.

 11. Danger. Your hands can be injured. Do not remove the cover and keep away from moving parts.

540 rpm



12. The machine is designed for use on tractors with 540 RPM PTO only



13. Caution! During working operations all bystanders must stay beyond the shown distances from the implement.

SAFETY INSTRUCTIONS



Before using the implement you must be sure to know the main safety precautions; in fact many accidents are caused by not observing these rules.



Pre-operational and operational safety rules

-  Make sure that no person operates this machine unless they first, thoroughly read and studied the operator instructions for this machine and understood all the safety precautions.
-  Keep all guards, shields and safety decals in place and proper working order before operating this machine.
-  Operate only with a tractor equipped with an approved Roll Over Protective System (ROPS) and always wear your seat-belt.
-  Operate only in daylight or good artificial light.
-  Only trained personnel can operate with the tractor and the implement.
-  **Personal protection equipment**, including safety shoes, safety glasses, hard hat and gloves are recommended during the different operations. Do not allow long hair, loose fitting clothing or jewellery to be around moving parts.
-  Do not leave the tractor seat until the engine is completely **turned off, brakes locked** and **ignition key removed**.
-  Do not allow riders on the machine or tractor at any time. No safe place for any rider.
-  Before starting to operate, be sure that the tractor's PTO is set to match the PTO requirements of the implement. The speed is indicated in this manual and on the implement.
-  Do not use different driveline . Always use type and size supplied by the manufacturer.
-  Make sure driveline spring-activated locking pin operate freely and are seated firmly in tractor PTO stub shaft groove.



For engaging or disengaging the tractor PTO, refer to your tractor manual.



Connect and disconnect PTO shaft only when tractor engine is turned off.



Keep hands, feet, hair and clothing away from moving parts.



To prevent injury by thrown objects DO NOT operate unless all personnel, livestock and pets are 20 m (65 ft) away.



The rotating parts of the machine have been designed and tested for rugged use. However they could fail upon impact with heavy solid objects. Such impact could cause the broken objects to be thrown outward at very high speed. To reduce the possibility of serious injury, or even death, never allow the rotating parts to contact such obstacles.



Stop the machine and tractor immediately upon striking an obstruction. Turn engine off, remove key, inspect and repair any damage before resuming operation.



No repairs or adjustments should be attempted while the machine is attached to a tractor that is turned on.



Disengage tractor PTO and place transmission into neutral before attempting to start engine.

Transport safety



Plan your route to avoid heavy traffic.



For public roads, comply with state and local safety and movement rules.



Be sure that the implement is in the raised position for transport.
When you must drive, do not drink.



Pay attention to traffic when operating near or crossing roadways.



Reduce speed when transporting mounted implement to avoid bouncing and loss of steering control.



Pay attention when you turn curves or you go up and down on hills with the implement. Be sure that at least 25% of the tractor's weight is on the front wheels to maintain safe steering. Drive at a low speed.



NEVER allow riders on implement or tractor. Falling off can kill.



Be a safe and courteous driver.

Maintenance safety



Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.

For maintenance follow these common practises:



- keep service area clean;
- use adequate illumination for the job;
- be sure tools and electrical outlets are properly grounded;
- make sure there is plenty of ventilation.



Before making maintenance on this machine, drive to a level area, disengage the PTO, lower the machine, turn off the engine, set the brakes and remove the ignition key.



Keep all persons away from operator control area while performing maintenance.



ALWAYS use personal protection devices.



Periodically tighten all bolts, nuts and screws.



The implement manufacturers assumes no liability if replacement parts other than the original factory parts are used.



After servicing, be sure that all safety shields are re-installed properly.



Be sure that all safety decals are installed, clean and in good condition.



If the machine is modified from the original design, no responsibility for the manufacturer can be claimed.

MAIN CHECK LIST



Before connecting the machine to the tractor, read the following instructions:

- Be sure the weight and power of the tractor is correct with the machine you want to connect. If you have any doubt, see the technical specifications.



- Ensure that all safety decals are properly installed and clean.
- Check oil in the gearbox. With low oil, gears get damaged.
- Be sure that all safety shielding is properly installed and in good condition.

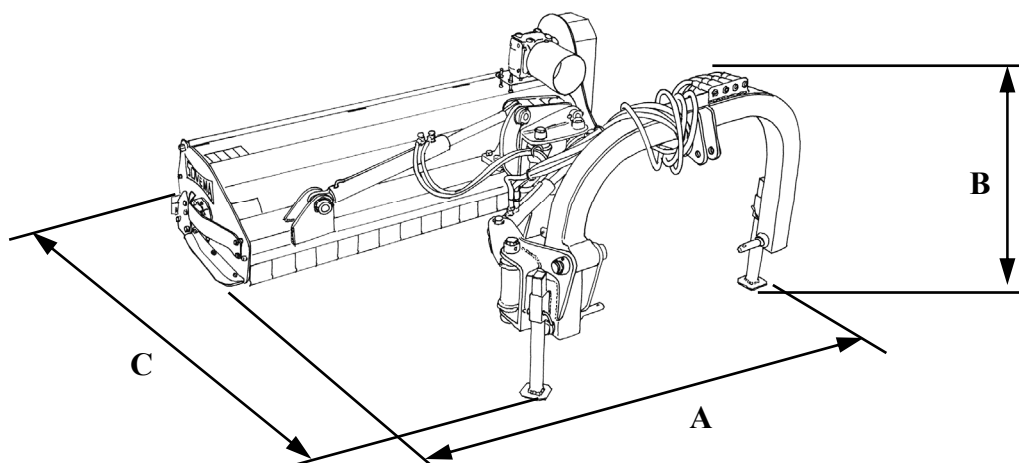
TECHNICAL SPECIFICATIONS



The machine described in this manual is a grass cutter of the **TDF-L series**.

In the following diagram are shown the tech. specs:

MOD.	Work. Width	HP	PTO	Rotor	Weight	N° Knives						-A-	-B-	-C-
	cm/inches		(rpm)	(rpm)	Kg./Lbs.	0 8	20	17	18		12	cm/inches	cm/inches	cm/inches
TFD-HD 180	180 / 72"	60 - 90	540	2020	655-1441	56	28			16	32	180 / 72''	100 / 40''	82 / 34''
TFD-HD 200	200 / 80"	70 - 90	540	2020	690-1518	64	32			16	32	200 / 80''	100 / 40''	82 / 34''
TFD-HD 220	220 / 86"	80 - 90	540	2020	725-1595	72	36			20	40	220 / 88''	100 / 40''	82 / 34''



LEVEL OF NOISE RESULT WHEN IDLING



L_{pa} (A) 80 dB MAX

ATTACHING THE MACHINE TO THE TRACTOR



The machines described in this manual do apply to any kind of tractor provided of universal third hitch point.

The characteristics (length, diameter of the holes for the lifting pins) of the tractor's lifting arms depend on the type of tractor, therefore it is necessary to prepare the machine in order to conclude the attachment correctly.

Before attaching the machine to the tractor you must be sure that the engine is turned off, brake-sare locked and the ignition key is removed.

This operation must be made on a flat area as it is very dangerous.



Do not allow anyone between tractor and implement when the engine is running.

Follow these instructions:



Attach the two lifting arms of the tractor to the lower pins of the Flail Mower then block with their split-pins (see fig.1).

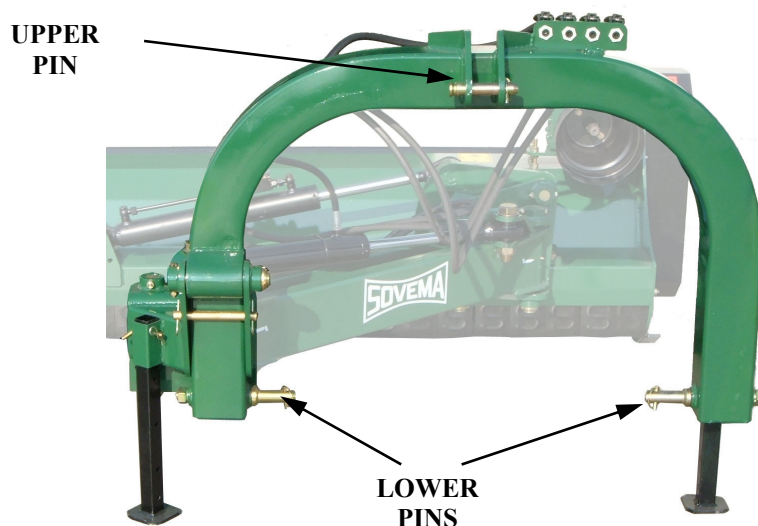


FIG. 1



Connect the hitch point of the tractor to the floating upper plates of the machine using a hitch pin and the hair clip pin (see fig. 2). This connection must guarantee a 15° inclination of the upper plates (see fig. 3) in order to let the machine adapt to the terrain and to protect its frame from possible damage. The inclination is obtained by regulating the tie rod of the hitch point of the tractor.

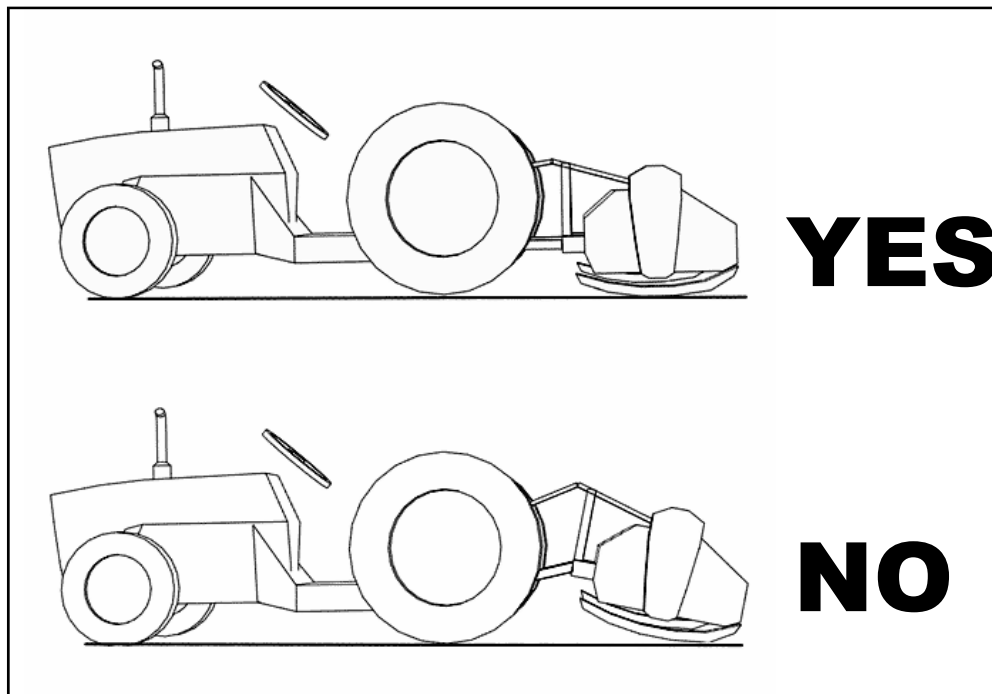


FIG. 2



Connect the PTO shaft and be sure it is correctly connected to the tractor and the machine (see fig.4).

FIG. 4

Shortening the PTO shaft

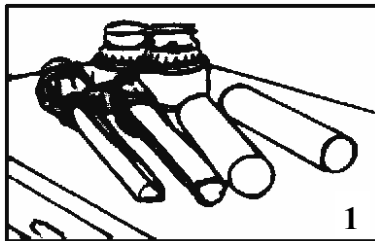
Due to the many different types of tractors, it may be necessary to shorten the PTO shaft.



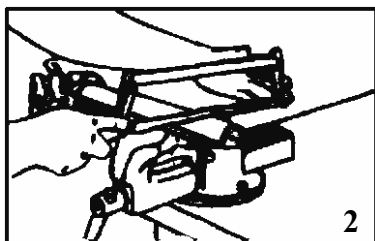
Always refer to the manual of the driveline's manufacturer. Read it carefully.



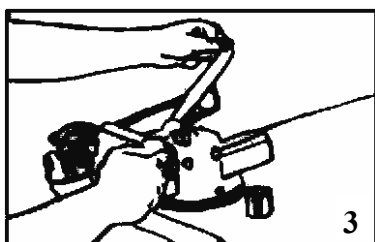
In case shortening is needed, listed below are some basic guidelines on performing this modification. Determine how much length is to be removed, then:



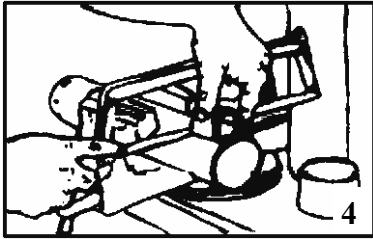
1) Remove plastic protection (both sections)



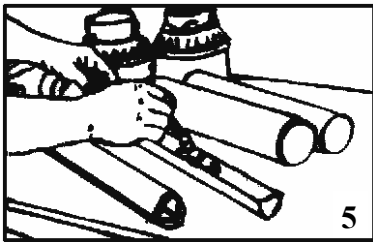
2) Cut the excess length of both tubes



3) Deburr and clean the saw-dust off ends of tubes. Remove packing inside shaft tubing



4) Cut the plastic protection to the same length you have cut the joints



5) Grease the male joint section and reassemble protection



Do not use PTO shafts without proper shielding installed.

MACHINE ADJUSTMENTS



When you need to adjust the cutting height based on your working requirements, operate on the two roller's side plates as follows (see fig.1):

- Loose screws “a”.
- Adjust the plate at your convenience fastening screws “a” into holes of the same plate.
- Fasten screws “a”.

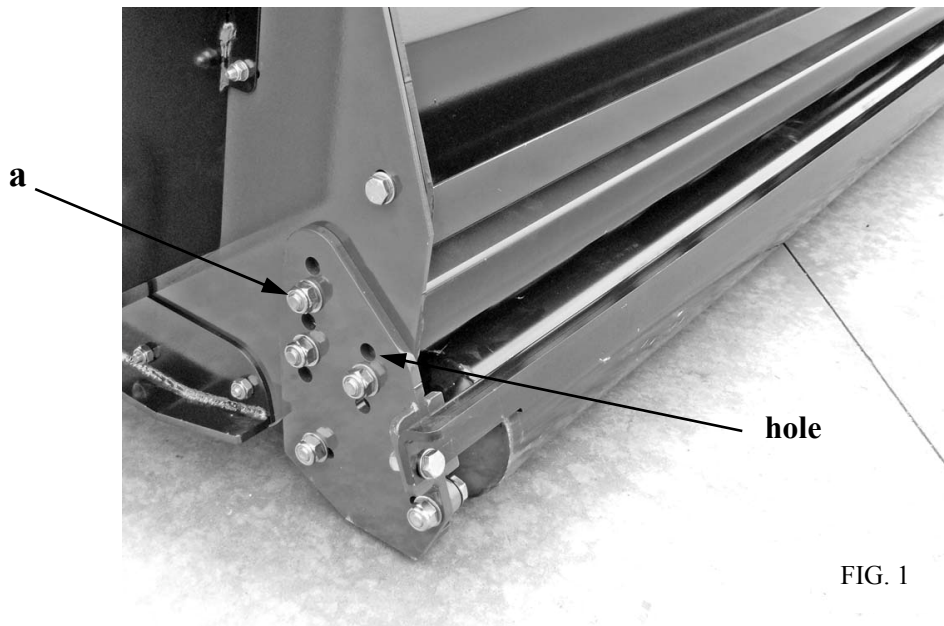
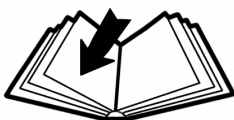


FIG. 1



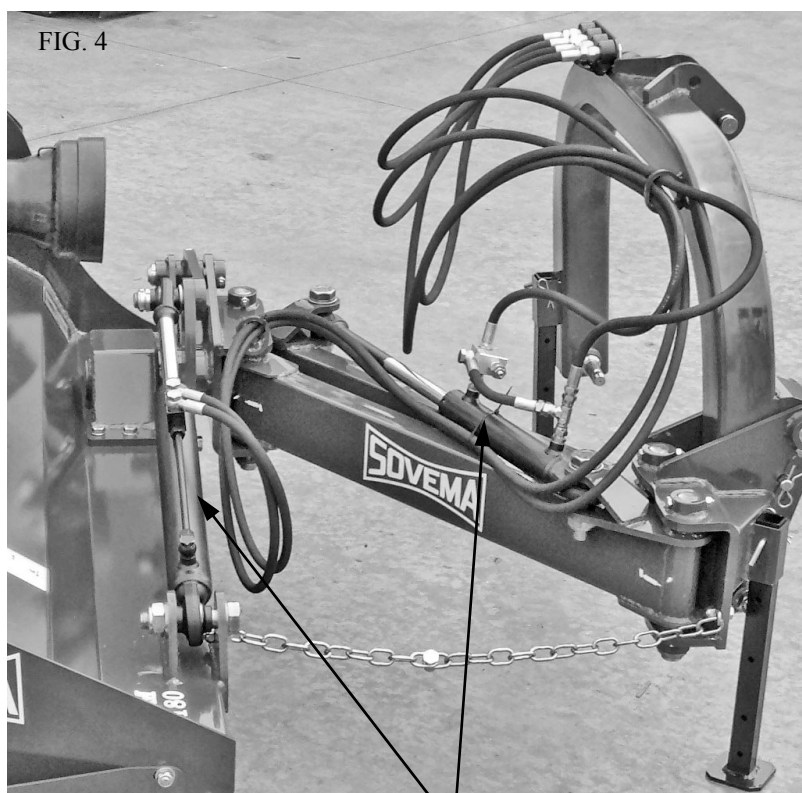
In order to obtain cutting uniformity we suggest to set the two roller-plates in the same way.

Setting the side shift

When the side shift of the implement is required is necessary to operate in the following way:

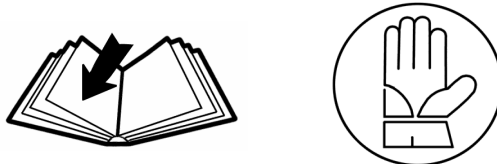
Hydraulic shift

- The implement is equipped with two hydraulic cylinders and pipes (see fig.4); while sitting on the tractor drive the control levers of the tractor's hydraulic system.
- The implement can shift with an alternate side movement and rotation from vertical position (90°) at a negative angle of -55° .



CYLINDER

BEGINNING WORK



After completing all safety controls, and being sure the machine is set out parallel to terrain (see fig. 1), to avoid damage start as follows:

- Raise the machine off the ground in order to let the knives start moving without touching ground.
- Maintaining the machine raised, engage the tractor PTO at suggested engine RPM.
- Start moving the tractor forward and then gradually lower the machine.

Cutting tips



Proper ground speed for cutting will depend upon the height, type and density of the grass to be cut. However we suggest not to exceed 7 Km/h.

Lower ground speed allows tall and dense grass cutting. Taking a partial cut and/or reversing the direction of travel may also produce a cleaner cut. Remember, sharp knives produce cleaner cuts and require less power.



To avoid damage to frame and gearbox as a consequence of impact of the knives with soil or solid objects, it is advisable not to carry out very low cuts.



While working, always lift up the implement before steering in order to do not damage the roller supports and the sides where are located the skids.

TROUBLE SHOOTING



During work several problems can happen:

Unusual noise

While working, if the **machine** made **unusual noise**, the operator must **stop it immediately** and follow next instructions:

- **Check for broken/bent parts.**
- **Check for correct oil level in the gearbox case.**

When present incorrect oil level (see chapter on maintenance), the gears of the gearbox are not lubricated correctly, and if continue to rotate, would determine a significant **increase in oil temperature**. If continue working in this condition **will quickly take to damage gear bearings** with consequent blocking of the PTO shaft.

- **Check knives conditions.**

If one of the knives is broken or excessively worn, continuing to rotate in short time takes to damage one of the two bearings (or both) of the shaft in which the knife is fixed. The shaft begins to oscillate producing great vibration, and in short time finishes to damage the weldings of the frame itself.

- **Check condition of the bearings that support the rotor shaft hubs.**

As a result of inadequate lubrication (see chapter on maintenance), it is possible that a bearing of one of the rotor shaft hubs has been damaged. The rotor shaft begins to oscillate causing excessive vibration of the frame, and in short time causing damage of its weldings.

Another

Cutting defects

After work, if cut doesn't result uniform and clean, follow next instructions:

- **Check knife conditions.**

In case of worn knives, you need to replace them (see chapter on maintenance).

- **Check that cutting height adjustment has been done correctly.**

It is possible that the cutting height adjustment has not been done in the same way for the two skids.

- **Check belt condition after removing the cover that protects them.**

In fact, there is a possibility of belt sliding, not letting the knives cut with adequate power. Belt sliding occurs when lack of tension itself (belt going too slow) or belt wear (see chapter on maintenance).

-If belts give signs of deterioration (even of small entity), immediate replacement is required.

-If belts are slow, immediate tensioning is required.

If after work the cut doesn't present clean, it is possible that the machine's going speed is **not opportunely adequate** to the number of turns the rotor does, and therefore to the cutting speed of the knives. Often happens that speed of the machine doesn't give enough time to the knives for a correct cutting.



In the case tall grass is being cut and ground speed is too high, it is possible that grass accumulates between the frame and the knives, taking to decrease efficiency in the cutting itself (see Cutting Tips).

Unloading defects

If the operator of the machine finds difficulty on unloading the product just cut, stop and follow these instructions:

- Verify the presence of wet grass and mud under the frame.

In fact it is possible that grass and mud get stuck in the lower part of the frame, interfering with the unloading function.

- Verify that grass or other solid object are not stuck around the knives.



Before checking the machine to find the possible cause of malfunctioning, be sure the tractor's PTO is disconnected, tractor's engine turned off, brakes on, key ignition off the command board, and the machine completely lowered to the ground.

DISCONNECTING THE MACHINE FROM THE TRACTOR



Disconnecting of the machine must be carried out on flat area, and it is considered a very dangerous operation. You must pay attention. Follow these instructions:



Lift the implement from the ground and disconnect the PTO of the tractor while sitting.



When the rotors are completely stopped, turn off the engine and set the parking brakes.



Lift down the flail on its parking stands, then unthread the pin of the upper rod (3 point hitch) of the flail after removing the blocking split pin, then detach the 3 point hitch of the tractor.



Unthread the pins from the lower plates of the flail after taking off their blocking split pins, then detach the two lifting arms of the tractor.



Detach the PTO shaft.



Detach the jacks of the 4 hydraulic pipes then place these in their supports.



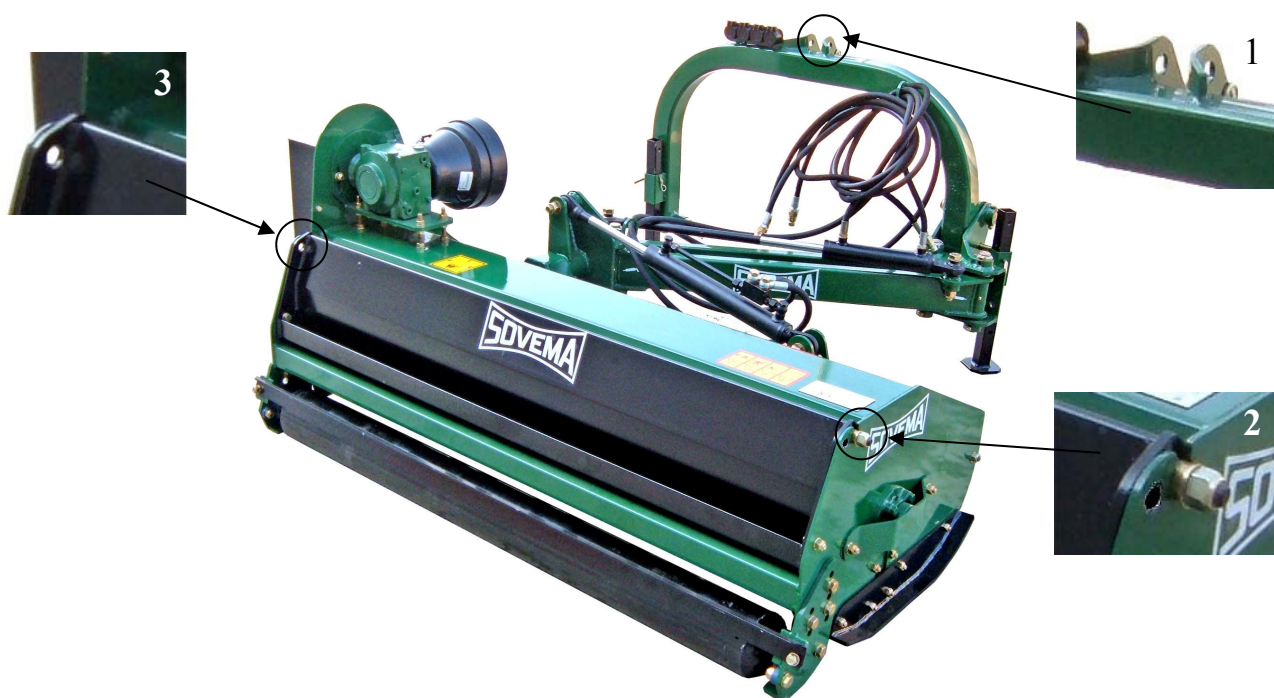
Before disconnecting the driveline, be sure the tractor PTO is in neutral and engine is off.

STORING OF THE MACHINE



As your machine is an investment and if remains unused for a long period, we suggest the following procedures:

- Wash and dry the machine;
- Check all moving parts. For excessive wear replace the parts or contact your local dealer;
- Check bolts and nuts for proper tightness;
- Accurately grease the bearings of the rotor shaft hubs and the bushes of the support arms of the wheels;
- For versions equipped with rear roller, grease the lateral supports of the roller itself.
- If you may need to move the implement, do it as shown by points “1, 2, 3” (see fig.).



MAINTENANCE



For long life of your machine and trouble free operation, regular program of maintenance is required.

The recommended phases of maintenance are for normal use and can be varied depending on the different conditions.



Always disengage tractor PTO before starting maintenance.



Every 10 working hours

- Check for loose screws that fix the knives;
- Grease the PTO shaft components;
- Clean the end of PTO shaft with non toxic / non inflammable detergent;
- Be sure driveline shields are in place and in good condition;
- Using the grease nipples located on top of the rotor shaft hubs (one for each shaft) and exactly under the plugs present on the covers, grease the bearings of the shafts it selves. To carry out this operation take out the plugs from the covers and clean the grease nipples. Use grease of lithium NLGI 2;
- Clean the machine.

Every 20 working hours

- Check belt tensioning by measuring belt tightness. Correct tightness results when belt deflection along the front side of the belt is 1 cm, as a result of the pressure applied with the index finger to the centre of the belt length (see fig. 1).

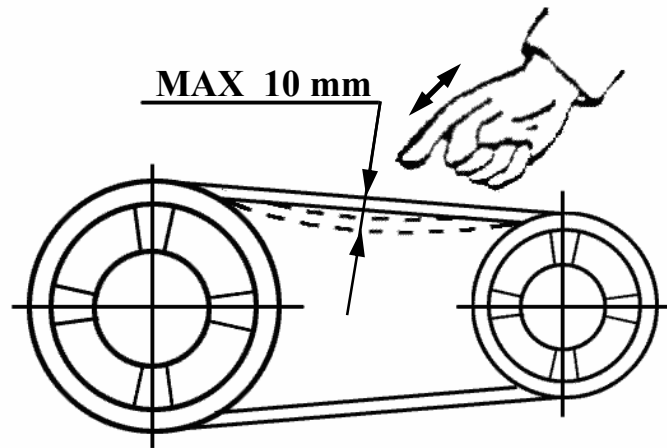


FIG. 1

If tensioning would be required, please proceed in this way (see fig.2):

- Remove the belt cover.
- Loose the two side nuts of support group “a”.
- Loose the four upper nuts of support group “b”.
- Rotate the four lower nuts at support group “c” in counterclockwise sense exactly equally letting the support lift up then the gearbox till the best tensioning of the belts.
- Ensure that the max flexibility of each belt, while pressing it through your finger, do not exceed 1 cm.
- Fasten the two side nuts “a” and the four upper “b”.

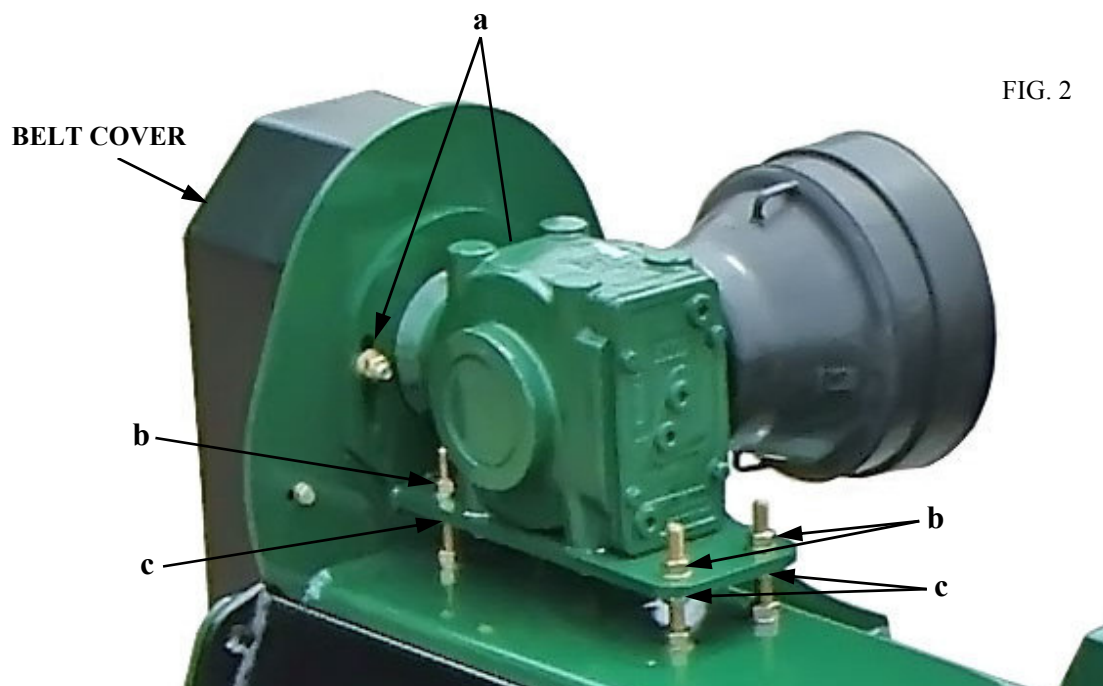


FIG. 2

If the belts show weariness (even if light) or cannot be tensioned any more because it is not possible to adjust furtherly the mechanical tensioning system, replace the belts. Before replacing, it is necessary to clean the pulleys, especially from the rubber residuals left from previous belts.



Remind to tension the belts properly.



If the implement often requires belts replacement, verify that the rotor turns freely without any obstacles while rotating.

- Be sure knives are sharpen uniformly. If necessary substitution, replace with original knives.
- Check gearbox correct oil level. To proceed, remove the oil level screw (see fig. 3). If needed to add oil, remove the filler screw located on top of the box, and fill in until oil starts running out of the level hole.

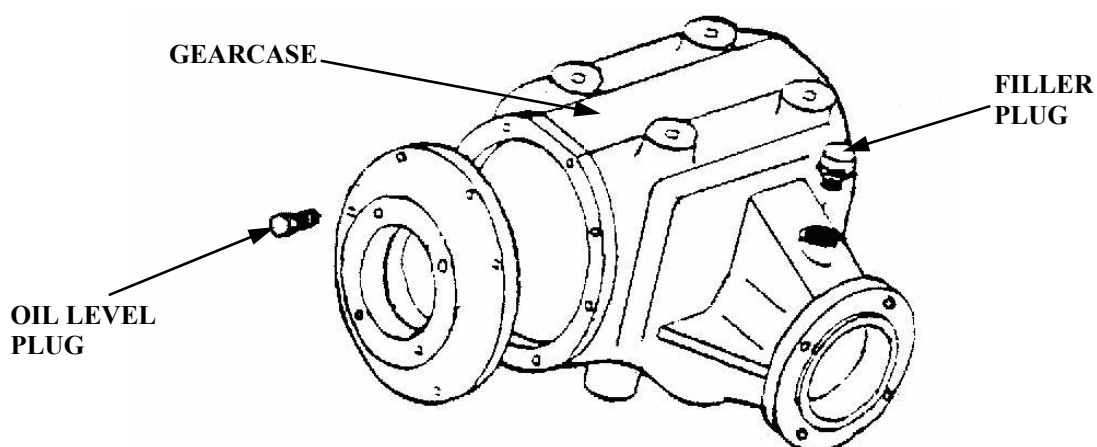


FIG. 3

Every 50 working hours

- Grease up the side supports of the roller. Before greasing, clean the grease nipple correctly for better lubrication. Use lithium type grease NLGI2.

First 100 working hours

- When the machine has done its first 100 hours, change the oil from the gearbox. To proceed, drain all the oil through the level screw hole after leaning opportunely the machine, then fill in with new oil through the filler hole. This substitution is necessary because the gears are new and so are subject to quicker worn. Use oil SAE 80 W 90 API GL4.

Every 300 working hours

- Completely replace gearbox oil, proceeding as explained before. Use oil SAE 80 W 90 API GL4.

TOXICOLOGICAL INFORMATION ABOUT LUBRICANTS



	TYPES OF DANGER	PROTECTIVE EQUIPMENT	PRIMARY INTERVENTION
SKIN	Possible irritation after prolonged contact	Gloves and/or lotion barrier	Wash with soap & water
EYES	Possible irritation on contact	Protective goggles	Rinse thoroughly w/ running water
INHALATION	Possible irritation after prolonged exposure	Maintain an oil mist level of 5mg/m ³ between TLV-TWA limits	Expose to fresh air and call medical assistance immediately
INGESTION	Such possibility not considered		DO NOT provoke vomiting; call medical assistance immediately

LIMITED WARRANTY POLICY



SOVEMA S.p.A., Manufacturer of quality machinery, guarantees new Sovema machinery from the time of delivery to the original purchaser to be free from defects in material and workmanship if properly set up and operated in accordance with recommendations set forth in SOVEMA's operator manual. SOVEMA's liability for any defect of accepted goods shall be limited to replacing them, or as SOVEMA shall elect.

The original purchaser will qualify for the SOVEMA warranty only after they have completed the warranty card in full and forwarded it to SOVEMA S.p.A. Italy or any SOVEMA branch.

SOVEMA's obligation shall terminate 12 (twelve) months after the date of purchase of the product by the original purchaser. This warranty cannot be assigned or transferred to anyone unless SOVEMA's consent in writing has first been obtained. All warranty claims must be forwarded to SOVEMA S.p.A. Italy or a SOVEMA branch within 8 (eight) days after occurrence.

The original purchaser will be responsible for and bear costs of:

- A) Normal maintenance such as greasing, maintenance of oil levels, minor adjustments, etc.
- B) Transportation of any kind of, any SOVEMA product to and from the place where warranty work is performed.

This warranty shall not apply to any machine which has been repaired or altered in any way outside the SOVEMA factory which affects its stability or reliability, nor which has been subject to misuse, negligence or accident, nor to any machine that has not been operated in accordance with SOVEMA's printed instructions, or operated beyond the company recommended capacity as per machine.

This warranty shall not be applicable to items which are subject to the warranties of their respective manufacturers. Such items would include but would not be limited to clutches, universal joints, knives, hydraulic components, bearings, tires, belts and other trade accessories.

This warranty shall not be applicable to items defined as normal wearing items. Such items would include but would not be limited to belts, discs, knives, tines stone guards, tires, slip clutches, pitman shaft, swath sticks, blades or tine holders.

The judgement of SOVEMA S.p.A. in all cases of claims under this warranty shall be final and conclusive and the original purchaser agrees to accept its decisions about all questions as to defects and/or to the exchange of any part or parts.

No Agent, Employee or Representative of SOVEMA has any authority to bind SOVEMA to any affirmation, representation or warranty, concerning its machinery excepts as specifically set forth.

SOVEMA shall not be liable for special or consequential damages of any kind caused by any SOVEMA product.



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Italy



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E-mail : sovema@sovema.com
Web site: www.sovema.com

WARRANTY REGISTRATION

This warranty will become valid only if this form is completed and signed by both the Purchaser and the Dealer and is returned within 8 days of purchase date! **IF NOT WARRANTY IS INVALID.**

TO FILL OUT

- ❖ **TYPE OF IMPLEMENT** : _____
- ❖ **IMPLEMENT SERIAL NUMBER** : _____
- ❖ **DATE OF PURCHASE** : _____

DEALER: I HEREBY CERTIFY THAT	PURCHASER: I HEREBY ACCEPT
• The machine has been correctly assembled in accordance with the manufacturers instructions. • All nuts and bolts, oil level and grease have been checked. • All safety guards and warning stickers have been placed on machine. • PTO has been matched to tractor and greased. • All other pre-delivery checks have been completed as per operators manual. • Purchaser was given operators manual and instructed in safe and correct usage of machine and on limitation of warranty. • Machine was tested and operates correctly.	• That the machine is correctly assembled. • Receipt of the operators manual which I have read and have clearly understood.. • To have a clear understanding of the warranty limitations. • To have a clear understanding of the correct and safe operation of the machine. • That the machine need regular maintenance as instructions in operators manual. • To have clear understanding on the capacity of this machine and made aware of its limitations.

DEALER	PURCHASER
(address) _____ _____ _____	(address) _____ _____ _____
Date: _____ Signature: _____	Date: _____ Signature: _____



SOVEMA S.p.A.
Via Olmo, 6-8-10
41010 Gaggio di Piano (MO)
Italy



Telephone: 059 93 85 85
Fax : 059 93 85 12
E-mail : sovema@sovema.com
Web site: www.sovema.com

WARRANTY REGISTRATION

This warranty will become valid only if this form is completed and signed by both the Purchaser and the Dealer and is returned within 8 days of purchase date! **IF NOT WARRANTY IS INVALID.**

TO FILL OUT

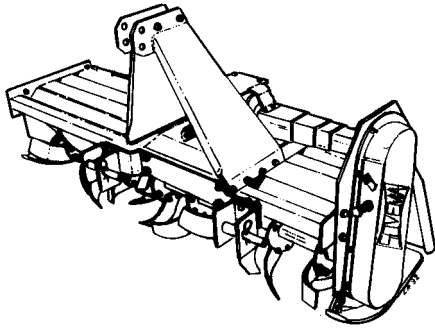
- ❖ **TYPE OF IMPLEMENT** : _____
- ❖ **IMPLEMENT SERIAL NUMBER** : _____
- ❖ **DATE OF PURCHASE** : _____

COPY TO DELIVER TO: SOVEMA

DEALER: I HEREBY CERTIFY THAT	PURCHASER: I HEREBY ACCEPT
• The machine has been correctly assembled in accordance with the manufacturers instructions. • All nuts and bolts, oil level and grease have been checked. • All safety guards and warning stickers have been placed on machine. • PTO has been matched to tractor and greased. • All other pre-delivery checks have been completed as per operators manual. • Purchaser was given operators manual and instructed in safe and correct usage of machine and on limitation of warranty. • Machine was tested and operates correctly.	• That the machine is correctly assembled. • Receipt of the operators manual which I have read and have clearly understood.. • To have a clear understanding of the warranty limitations. • To have a clear understanding of the correct and safe operation of the machine. • That the machine need regular maintenance as instructions in operators manual. • To have clear understanding on the capacity of this machine and made aware of its limitations.

DEALER	PURCHASER
(address) _____ _____ _____	(address) _____ _____ _____
Date: _____ Signature: _____	Date: _____ Signature: _____

SOVEMA Product Line

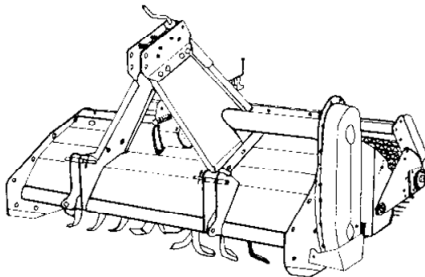
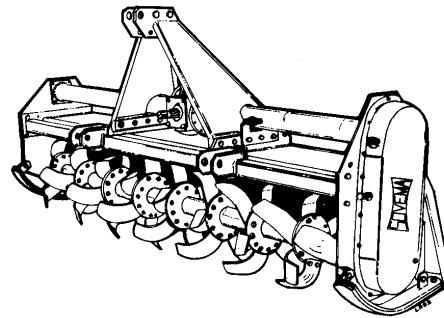


SIDE SHIFT ROTARY TILLERS

- 15 different models;
- For tractors from 12 to 70 HP
- Working width from 80cm (32") to 200cm (78").

FIXED ROTARY TILLERS

- Over 45 different models;
- For tractors from 15 to 130 HP
- Working width from 80cm (32") to 300cm (120").

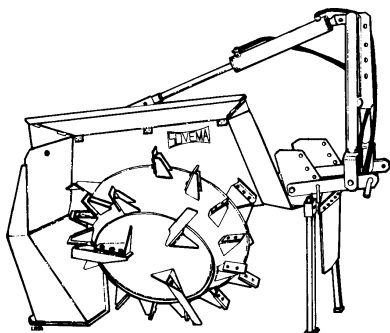
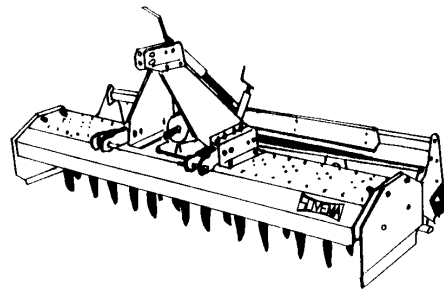


STONE BURRIERS

- 6 different models;
- For tractors from 35 to 90 HP
- Working width from 100cm (40") to 200cm (80").

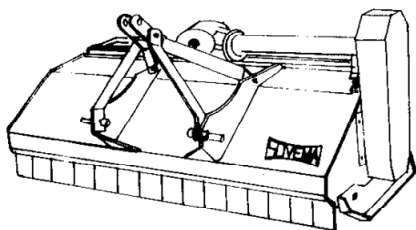
ROTARY HARROWS

- 13 different models;
- For tractors from 25 to 150 HP
- Working width from 110cm (44") to 500cm (200").



ROTARY DITCHERS

- 10 different models;
- For tractors from 40 to 130 HP
- Working depth from 45cm (18") to 110cm (44").

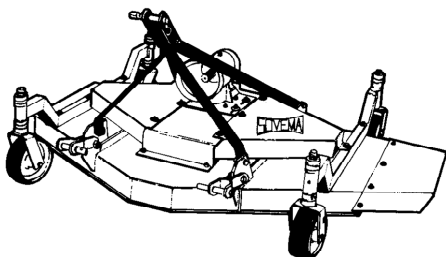
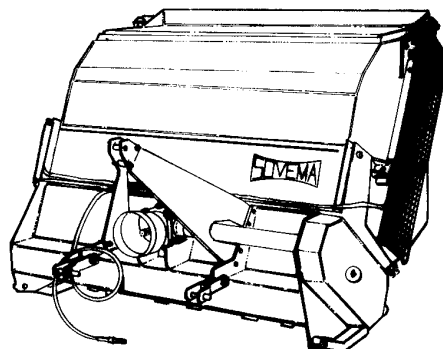


FLAIL MOWERS - SHREDDERS

- 35 different models;
- For tractors from 15 to 120 HP
- Working width from 100cm (40") to 290cm (118").

MOWERS COLLECTOR

- 6 different models;
- For tractors from 30 to 60 HP
- Working width from 120cm (50") to 180cm (72").
- Available with high discharge and low discharge

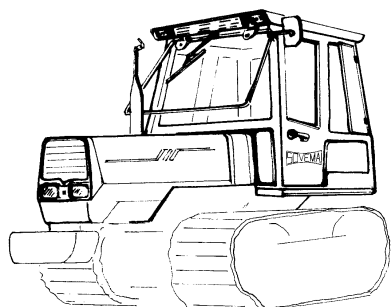
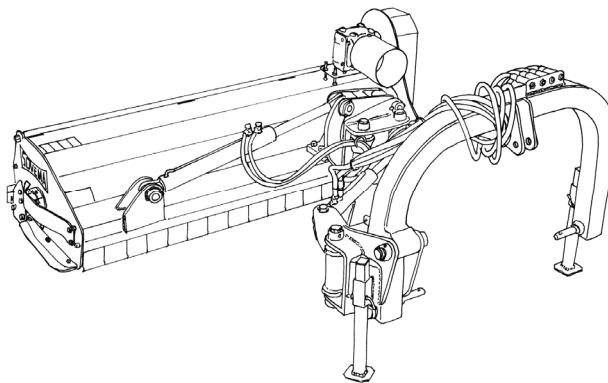


FINISHING MOWERS

- 14 different models;
- For tractors from 15 to 70 HP
- Working width from 100cm (40") to 300cm (116").

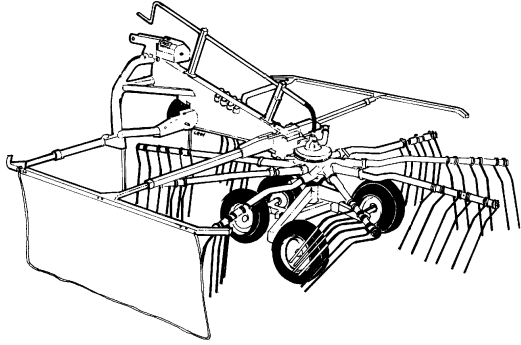
SIDE FLAIL MOWERS

- 15 different models;
- For tractors from 30 HP to 120 HP
- Cutting width from 120cm (48") to 220cm (86").



TRACTOR CABS

- Over twenty models of cabs for eleven manufacturers of tractors;
- For tractors with wheels or crawlers;
- All models available with heating and/or air conditioned.

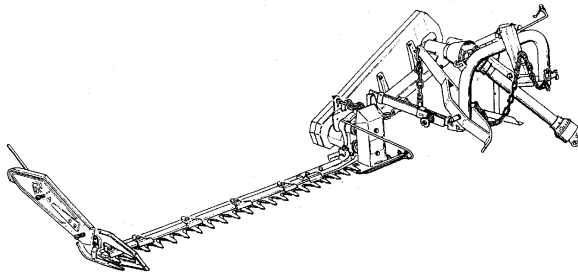
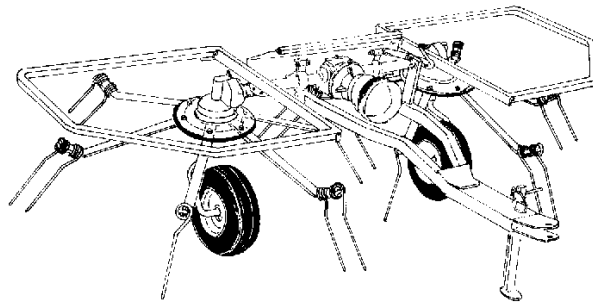


ROTARY RAKE

- 4 different models
- For tractors from 30 to 70 HP
- Working width from 340cm (11ft 5") to 690cm (23ft).

HAY TEDDERS

- 6 different models (2, 4, 6 rotors)
- For tractors from 10 to 40 HP
- Working width from 310cm (10ft) to 730 cm (24ft).

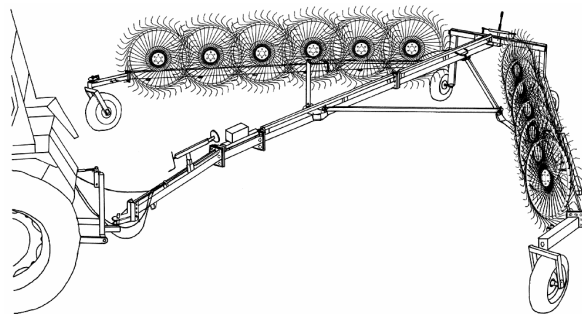
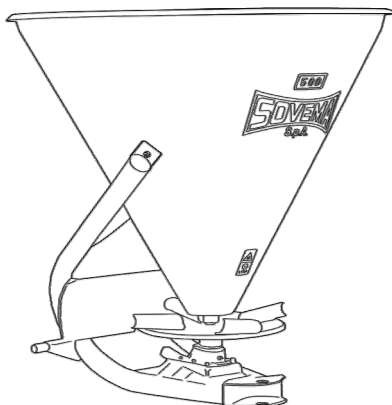


SICKLE BAR MOWER

- 3 different models.
- For tractors from 10 to 15 HP.

FINGER WHEELS

- 8 different models (8-20 raking wheels)
- For tractors from 30 to 80 HP
- Working width from 5.30m (17ft 5") to 11.50m (34ft 6").



FERTILIZER SPREADERS

- 5 different models 165 to 345lt (44 to 91gals)
- For tractors from 20 HP

NOTES