

INSTRUCTION MANUAL



EM-3

FINISHING 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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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

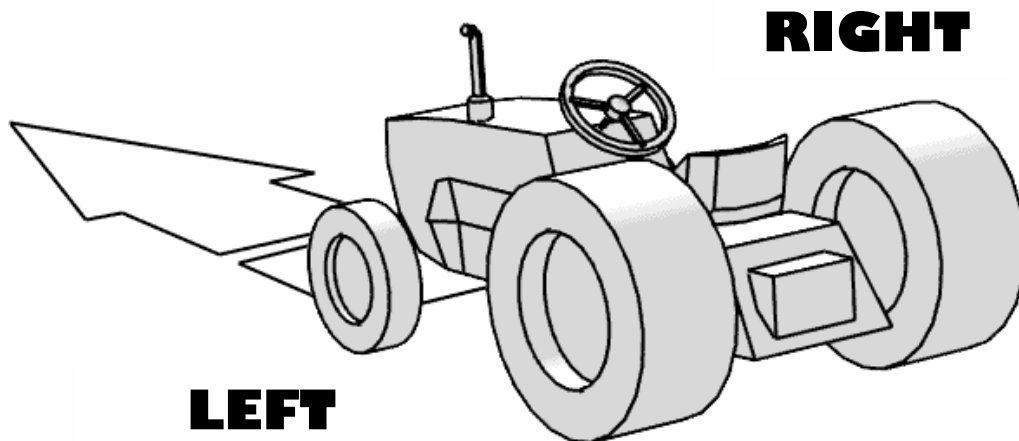
GENERAL INFORMATION



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



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



9



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

540 rpm

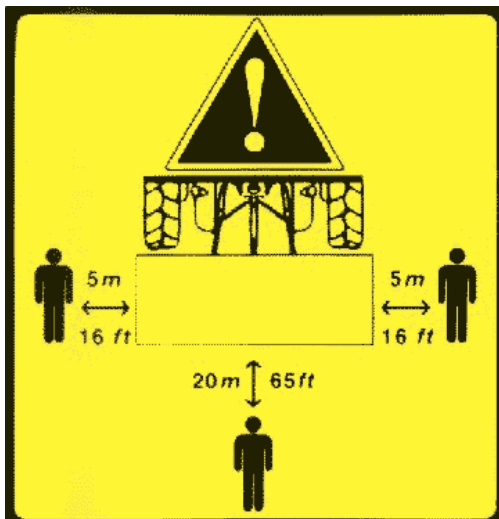
10. The machine is designed for use on tractors with 540 RPM PTO only

1000 rpm

11. The machine is designed for use on tractors with 1000 RPM PTO only

2000 rpm

12. The machine is designed for use on tractors with 2000 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.



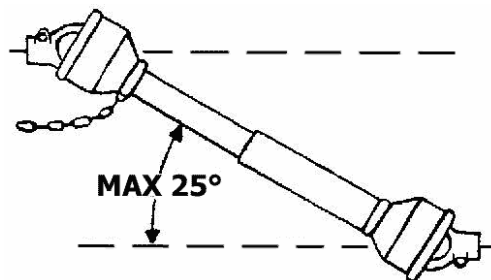
Stop the machine and tractor immediately upon striking an obstruction. Turn engine off, remove key, inspect and repair any damage before resuming operation.



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



Working inclination of PTO driveline must not exceed 25° (see fig.1). Greater working angles will damage the PTO and serious personal injury could occur as well.



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

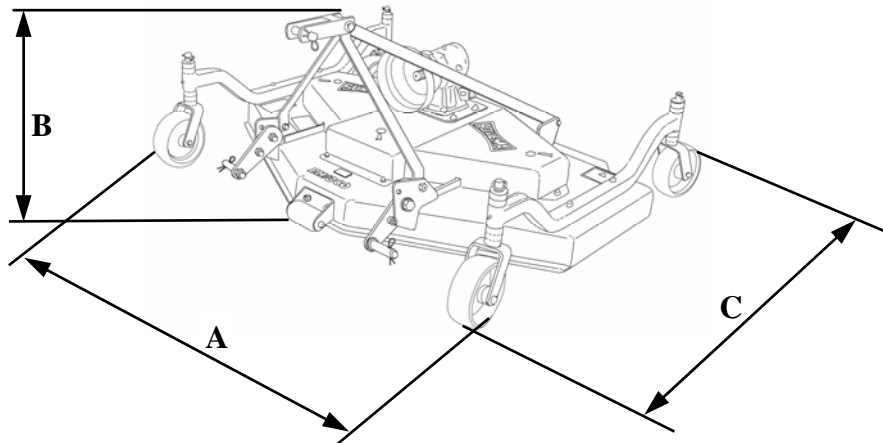


The machine described in this manual is a grass cutter of the **EM 3 series**.

EM 3 SERIES

MOD.	Working width	HP	Weight	Width -A-	Height -B-	Depth -C-
	cm/inches		Kg./Lbs.	cm/inches	cm/inches	cm/inches
EM-3 48	120 / 48"	20 - 40	172 / 387	134 / 53"	72 / 28"	119 / 47"
EM-3 60	150 / 59"	25 - 45	201 / 452	162 / 64"	72 / 28"	134 / 53"
EM-3 72	180 / 72"	30 - 50	257 / 578	194 / 76"	72 / 28"	155 / 61"
EM-3 84	208 / 82"	35 - 50	294 / 662	220 / 87"	72 / 28"	173 / 68"

MOD.	Rotor		
	Pto 540 (rpm)	Pto 1000 (rpm)	Pto 2000 (rpm)
EM-3 48	3265	3128	3175
EM-3 60	2690	2576	2615
EM-3 72	2285	2190	2220
EM-3 84	2285	2190	2220



LEVEL OF NOISE RESULT WHEN IDLING



Lpa (A) 84 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, brakes are locked and the ignition key is removed.

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

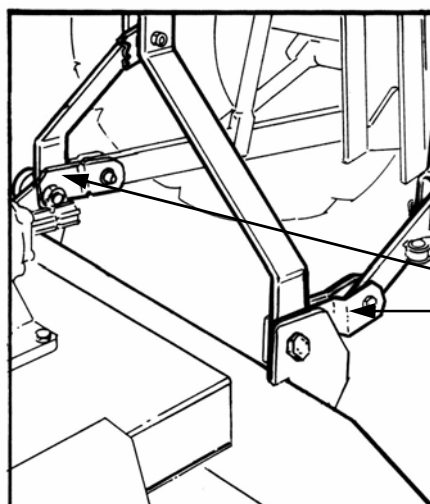


Do not allow anyone between tractor and implement when the engine is running.

Follow these instructions:



Connect the hitch of the drawbar to the tractor using a hitch pin and the hair clip pin (see fig. 1)



LOWER PLATES

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.

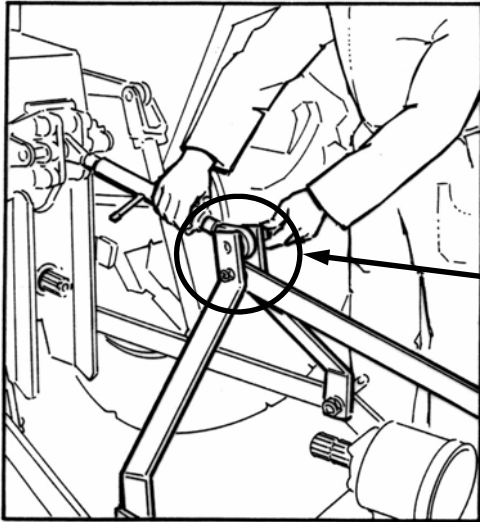


FIG. 2

**FLOATING UPPER
PLATES**

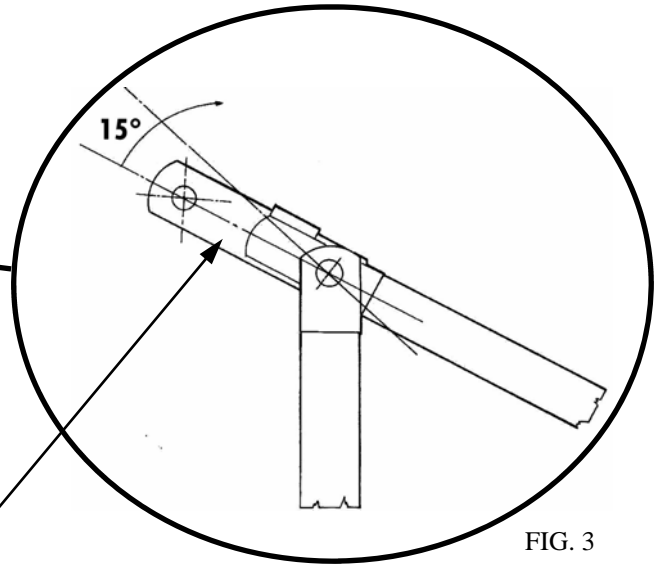


FIG. 3



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

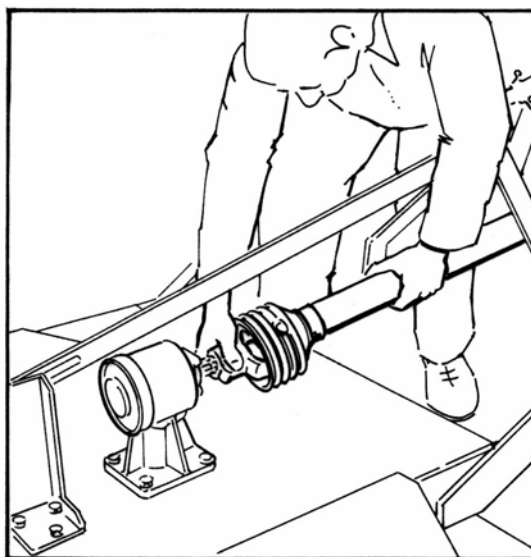


FIG. 4

Shortening the PTO shaft

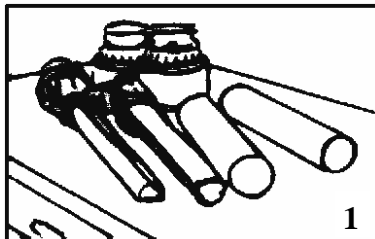
Due to the many different types of tractors, it may be necessary to shorten the PTO shaft.



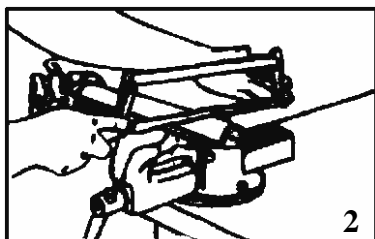
Always refer to the manual of the driveline's manufacturer. Read it carefully.



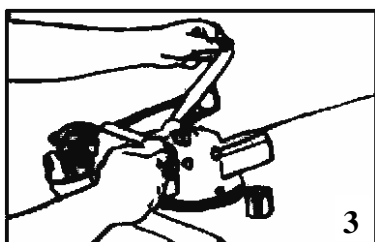
In case shortening is needed, listed below are some basic guidelines on performing this modification. Determine how much length is to be removed, then:



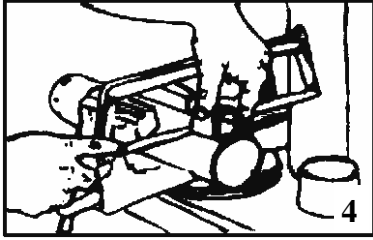
1) Remove plastic protection (both sections)




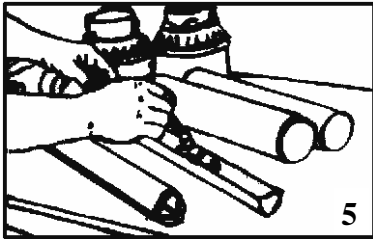
2) Cut the excess length of both tubes



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



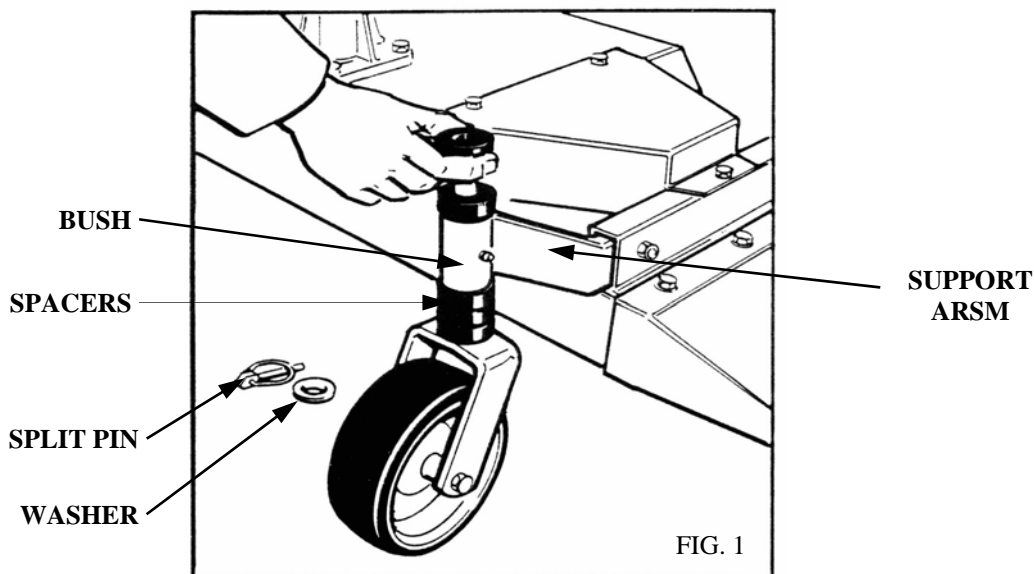
Do not use PTO shafts without proper shielding installed.

CUTTING HEIGHT ADJUSTMENT



To adjust the cutting height of your machine, follow the next instructions (see fig. 1):

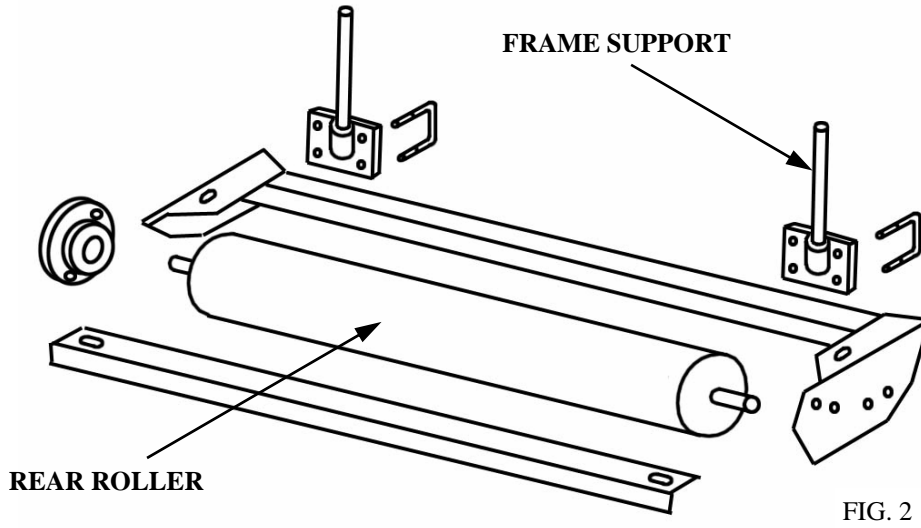
- For each wheel unthread the split pin from the fork in which the cutting height regulation spacers are threaded.
- If you wish to increase cutting height, add spacers under the bush of the support arms, for each wheel.
- If you wish to reduce cutting height, add spacers over the bush of the support arms, for each wheel.
- After concluding regulation as desired, insert the split pins in its respective forks.



To get uniformity on cut, the regulation described before (by spacers) must be the same for the four wheels of the machine.



If your machine is equipped with a rear roller instead of the two wheels, the regulation is carried out by unthreading the split pins from the forks of the two front wheels and from the two frame-supports of the roller, to proceed by using the spacers, as explained before (see fig. 2).



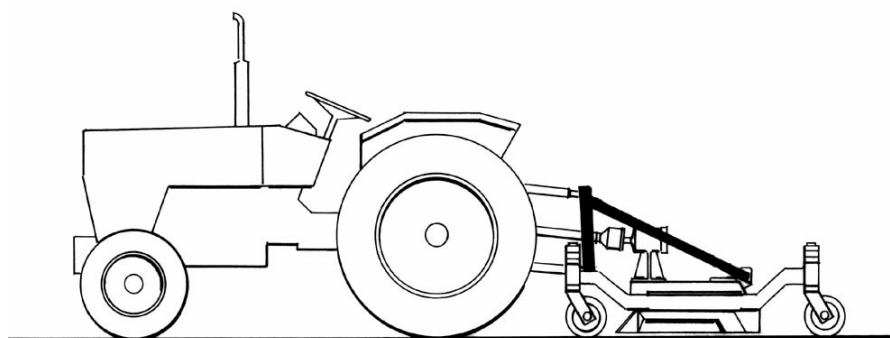
To get uniformity on cut, after regulating as explained before (by rear roller), be sure the machine results parallel to terrain.

Minimum cutting height possible (following the two types of regulation) is 2,5 cm; the maximum possible is 12 cm.

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.

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.

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 by spacers has not been done in the same way for the four wheels. Or it is possible that the versions equipped with rear roller, after the adjustment, the machine and its knives have not been displayed parallel to ground.

After work, if cut doesn't result clean the operator must stop the machine and 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:

 While remaining in the tractor seat, put the tractor PTO in neutral.

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

 Remove the ignition key.

 Descend from the tractor and disconnect the driveline.

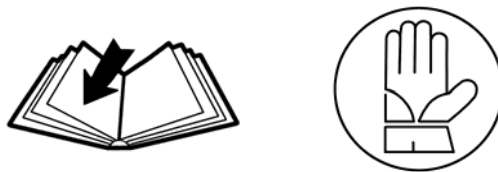
 Engage the parking stand.

Disconnect the hitch of the drawbar from the tractor.



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.
- Lubricate all not-painted parts;
- Store the machine in a clean and dry place under roof.

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.

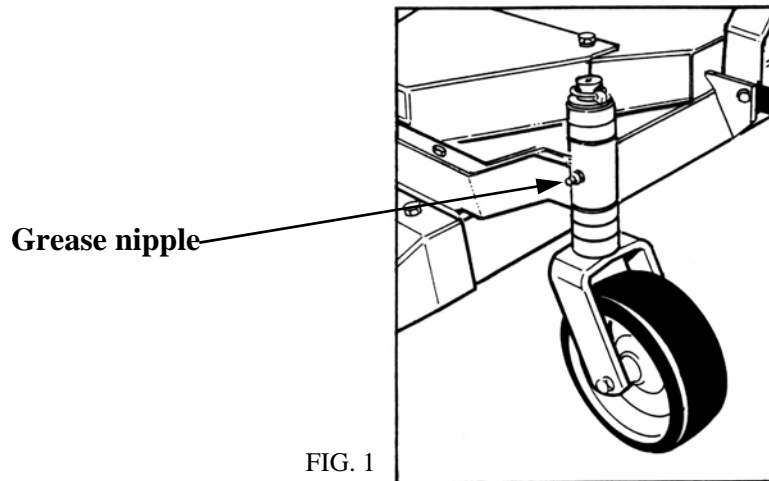


Every 10 working hours

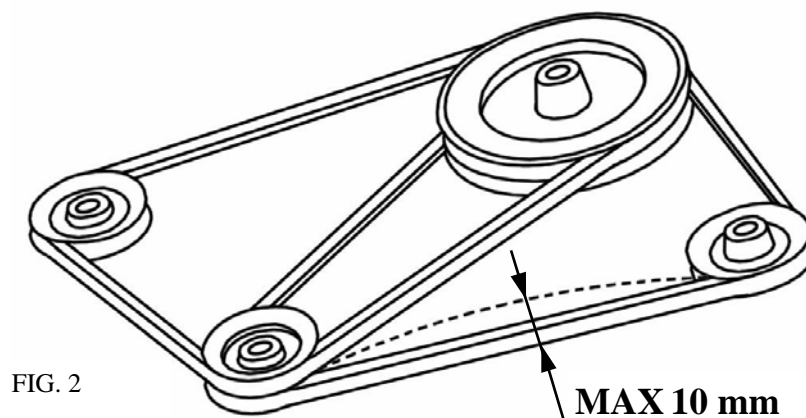
- Check for loose screws that fix the knives;
- Grease the PTO shaft components;
- Clean the end of PTO shaft with non toxic / non inflammable detergent;
- Be sure driveline shields are in place and in good condition;
- Using the grease nipples located on top of the rotor shaft hubs (one for each shaft) 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

- Grease the bushes of the support arms of the wheels (see fig. 1). Before carrying this out clean grease nipples accurately. Use lithium grease NLGI 2.



- 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. 2).



the case belt adjustment was needed, proceed as follows (see fig. 3) for each stretcher:

- Unscrew the four screws that fix the case plate to the support;
- Unscrew the counter nut and rotate clockwise the blocking plug, maintaining the tensioning screw fixed with a wrench;
- After regulating the tensioning, screw back the counter nut;
- Screw back the four screws that fix the case plate to the support.

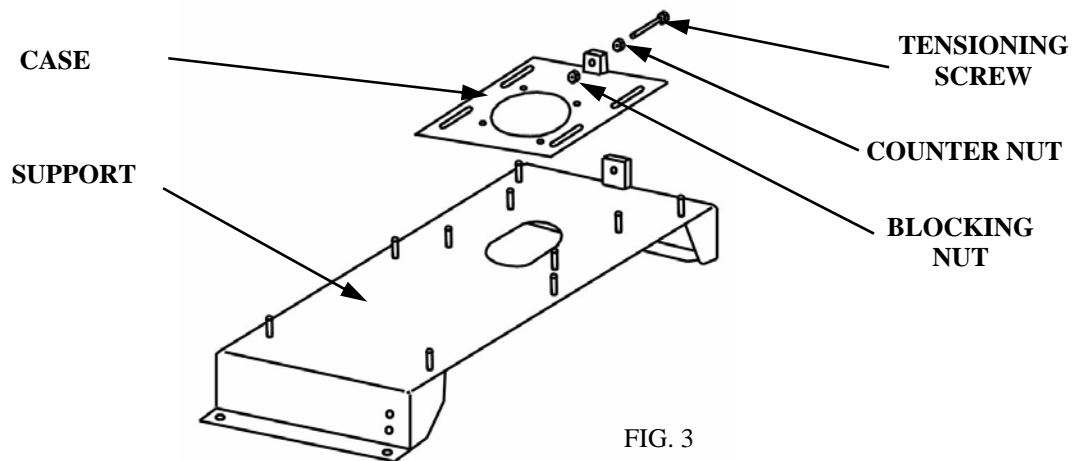


FIG. 3

- Be sure knives are sharpened uniformly. If necessary substitution, replace with original knives.
- Check gearbox correct oil level. To proceed, remove the oil level screw (see fig. 4). 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.

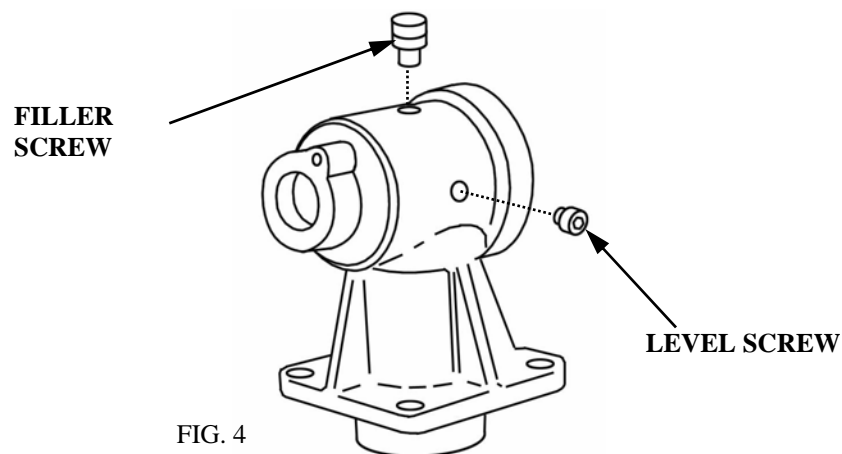


FIG. 4

Every 50 working hours

- For those versions of the machine equipped with rear roller, proceed to grease its lateral supports. 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 100 working hours

- Check the superficial state of the wheels. These are made of full rubber and are subject to worn after a while.

Every 200 working hours

- Replace the belts. Actually this substitution is necessary when belts present cuts or evident worn signs. To proceed with replacement follow these instructions:
 - a) Before replacement check condition of the pulleys and bearings;
 - b) Clean the pulleys from residual material of the old belts;
 - c) Be sure pulleys rotate liberally and firmly;
 - d) Tension belts correctly (see chapter on Trouble Shooting).

Every 300 working hours

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

TOXICOLOGICAL INFORMATION ABOUT LUBRICANTS



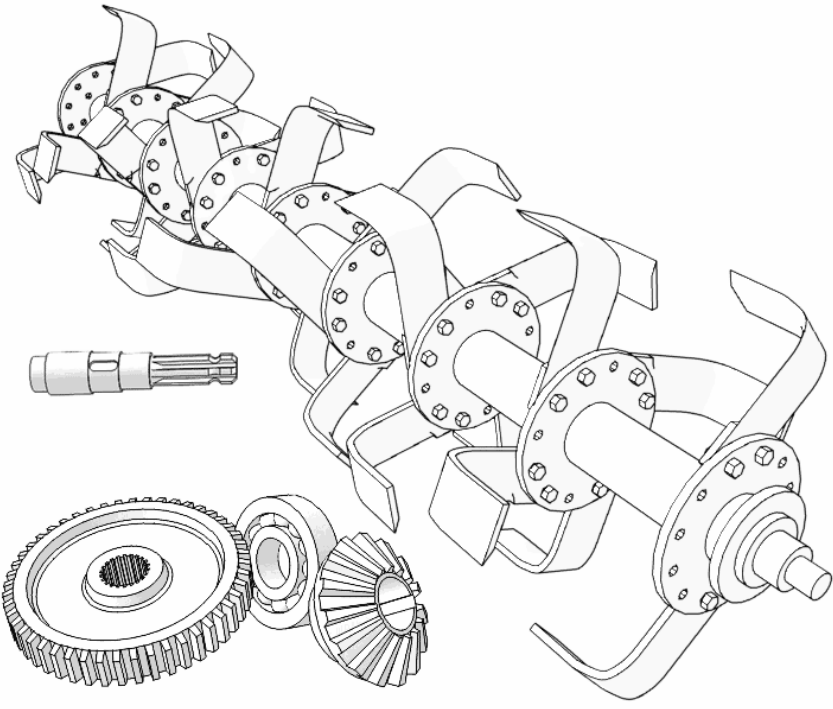
	TYPES OF DANGER	PROTECTIVE EQUIPMENT	PRIMARY INTERVENTION
SKIN	Possible irritation after prolonged contact	Gloves and/or lotion barrier	Wash with soap & water
EYES	Possible irritation on contact	Protective goggles	Rinse thoroughly w/ running water
INHALATION	Possible irritation after prolonged exposure	Maintain an oil mist level of 5mg/m3 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



**USE EXCLUSIVELY ORIGINAL
SPARE PARTS FROM
SOVEMA**

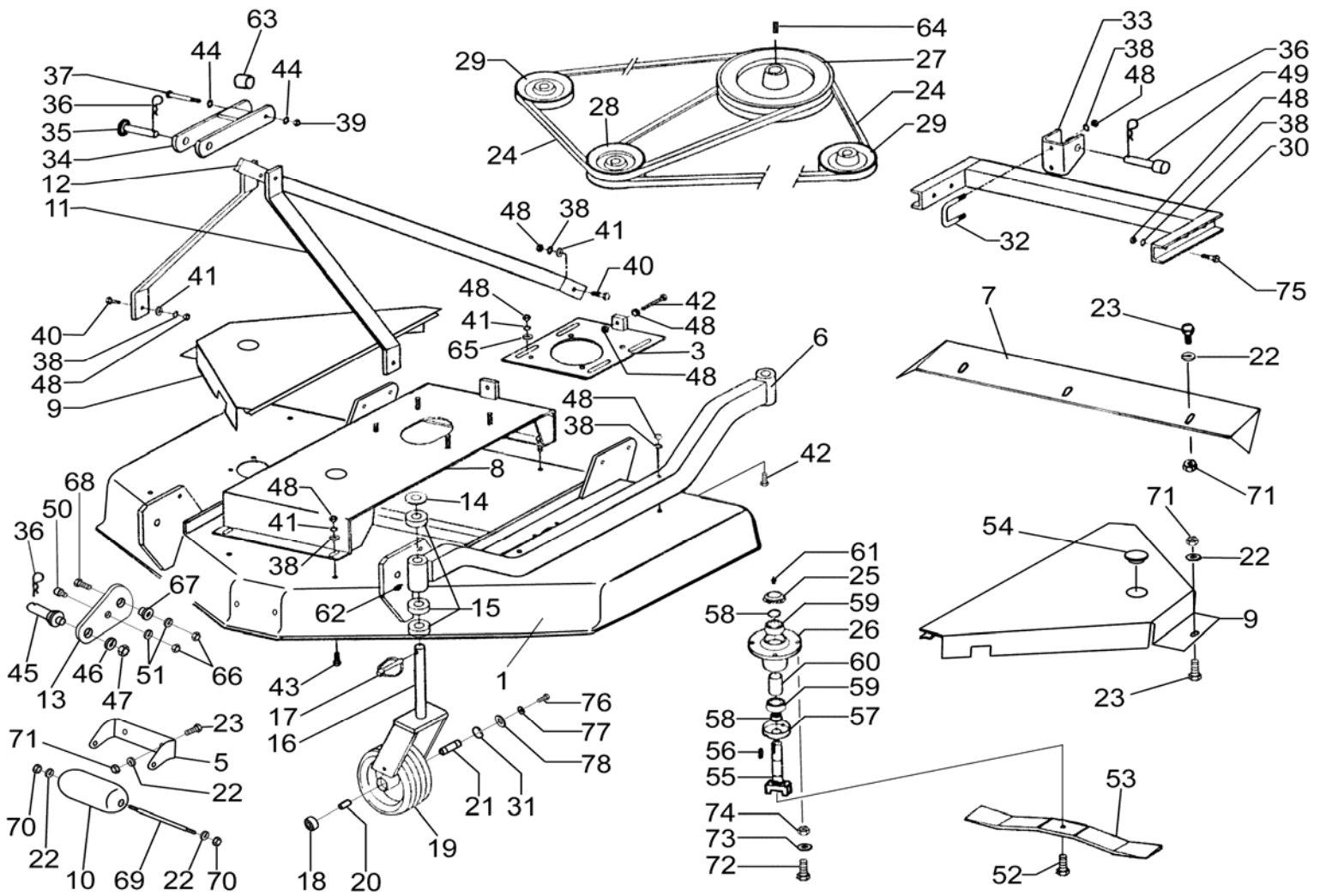
SPARE PARTS LIST

EM-3 Model



EM 3

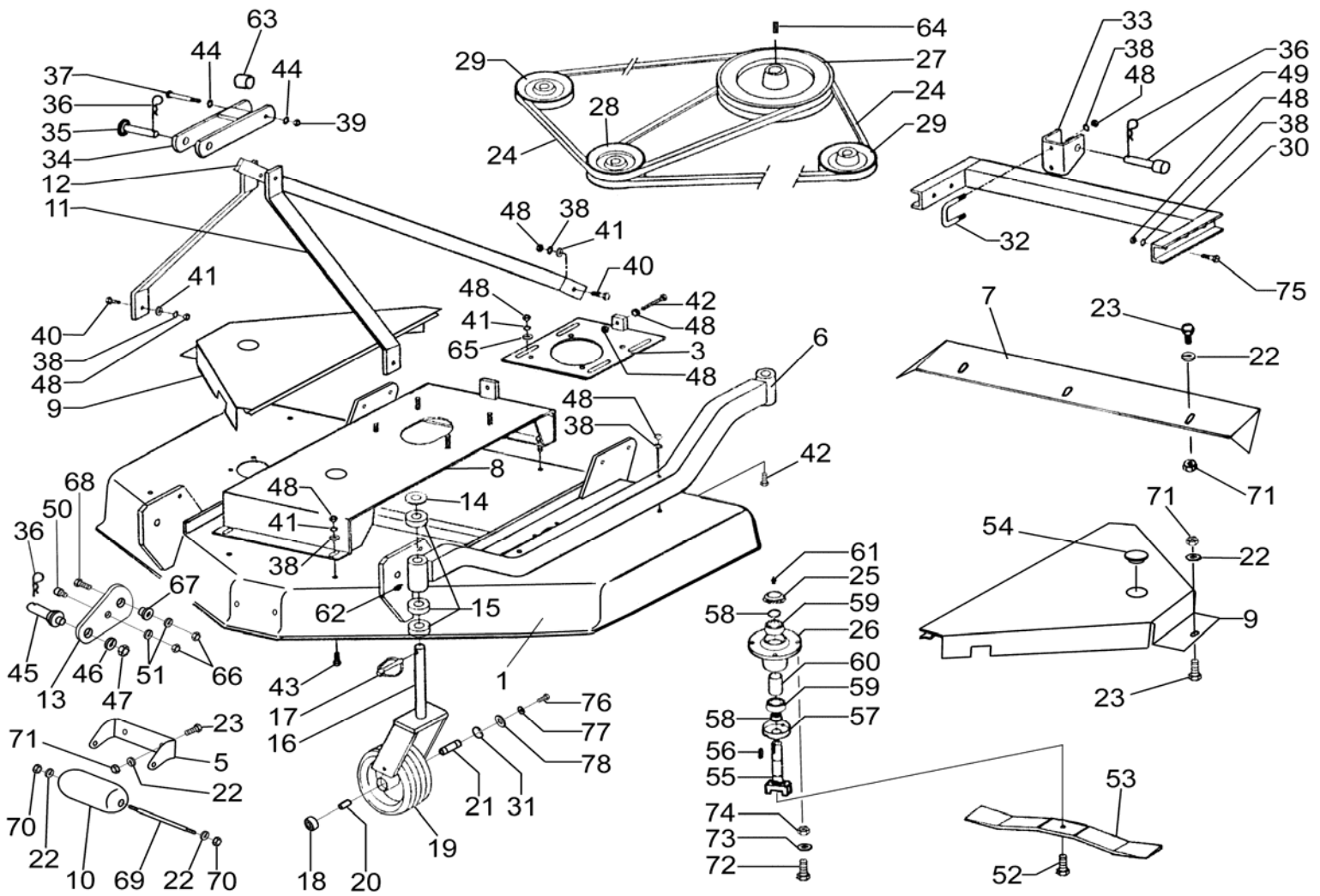
Frame



REF	CODE	QTY	ENGLISH	FRANÇAIS	ITALIANO	DEUTSCH	ESPAÑOL	NOTE
1	900.241.504	1	FRAME	CHASSIS	TELAIO	RAHMEN	BASTIDOR	48
1	900.241.505	1	FRAME	CHASSIS	TELAIO	RAHMEN	BASTIDOR	60
1	900.241.506	1	FRAME	CHASSIS	TELAIO	RAHMEN	BASTIDOR	72
1	900.241.507	1	FRAME	CHASSIS	TELAIO	RAHMEN	BASTIDOR	84
3	900.241.519	1	PLATE	PLAQUE	PIASTRA	PLATTE	PLACA	
5	900.241.530	1	SUPPORT	SUPPORT	SUPPORTO	STUETZE	SOPORTE	48-60-72
5	900.241.531	1	SUPPORT	SUPPORT	SUPPORTO	STUETZE	SOPORTE	84
6	900.241.515	2	ARM	BRAS	BRACCIO	ARM	BRAZO	48
6	900.241.516	2	ARM	BRAS	BRACCIO	ARM	BRAZO	60
6	900.241.517	2	ARM	BRAS	BRACCIO	ARM	BRAZO	72
6	900.241.518	2	ARM	BRAS	BRACCIO	ARM	BRAZO	84
7	900.241.520	1	CONVEYOR	DEFLECTEUR	DEFLETTORE	KONVEYOR	DEFLECTOR	48
7	900.241.521	1	CONVEYOR	DEFLECTEUR	DEFLETTORE	KONVEYOR	DEFLECTOR	60
7	900.241.522	1	CONVEYOR	DEFLECTEUR	DEFLETTORE	KONVEYOR	DEFLECTOR	72
7	900.241.523	1	CONVEYOR	DEFLECTEUR	DEFLETTORE	KONVEYOR	DEFLECTOR	84
8	900.241.512	1	SUPPORT	SUPPORT	SUPPORTO	STUETZE	SOPORTE	48
8	900.241.513	1	SUPPORT	SUPPORT	SUPPORTO	STUETZE	SOPORTE	60
8	900.241.514	1	SUPPORT	SUPPORT	SUPPORTO	STUETZE	SOPORTE	72-84
9	900.241.508	2	COVER	CARTER	CARTER	GEHAEUSE	CARTER	48
9	900.241.509	2	COVER	CARTER	CARTER	GEHAEUSE	CARTER	60
9	900.241.510	2	COVER	CARTER	CARTER	GEHAEUSE	CARTER	72
9	900.241.511	2	COVER	CARTER	CARTER	GEHAEUSE	CARTER	84
10	900.241.532	1	ROLLER	ROULEAU	RULLO	WALZE	RODILLO	48-60-72
10	900.241.533	1	ROLLER	ROULEAU	RULLO	WALZE	RODILLO	84
11	900.241.524	2	TIE ROD	TIRANT	TIRANTE	ZUGSTANGE	TIRANTE	
12	900.241.525	2	TIE ROD	TIRANT	TIRANTE	ZUGSTANGE	TIRANTE	48
12	900.241.526	2	TIE ROD	TIRANT	TIRANTE	ZUGSTANGE	TIRANTE	60
12	900.241.527	2	TIE ROD	TIRANT	TIRANTE	ZUGSTANGE	TIRANTE	72
12	900.241.528	2	TIE ROD	TIRANT	TIRANTE	ZUGSTANGE	TIRANTE	84
13	900.241.529	2	HITCH	ATTELAGE	ATTACCO	ANBAU	ENGANCHE	
14	900.104.059.T	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
15	900.241.182	16	SPACER	ENTRETOISE	DISTANZIALE	ABSTANDSRING	DISTANCIADOR	
16	900.241.186	4	FORK	FOURCHETTE	FORCELLA	GABEL	HORQUILLA	48-60-72 USA
16	900.241.539	4	FORK	FOURCHETTE	FORCELLA	GABEL	HORQUILLA	84 USA
16	900.241.534	4	FORK	FOURCHETTE	FORCELLA	GABEL	HORQUILLA	48-60-72 CAN
16	900.241.535	4	FORK	FOURCHETTE	FORCELLA	GABEL	HORQUILLA	84 CAN
17	900.108.025	4	CLICK PIN	CHEVILLE DECKIC	SPINA A SCATTO	SCHNAPPSTIFT	CLAVIJA DE RES.	
18	900.100.087	8	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	48-60-72 USA
18	900.100.043	8	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	84 USA
18	900.100.043	8	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	CAN
19	900.241.187	4	WHEEL	ROUE	RUOTA	RAD	RUEDA	48-60-72 USA
19	900.241.226	4	WHEEL	ROUE	RUOTA	RAD	RUEDA	84 USA
19	900.152.013	4	WHEEL	ROUE	RUOTA	RAD	RUEDA	48-60-72 CAN
19	900.234.076	4	WHEEL	ROUE	RUOTA	RAD	RUEDA	84 CAN
20	900.241.199	4	SPACER	ENTRETOISE	DISTANZIALE	ABSTANDSRING	DISTANCIADOR	48-60-72 USA
21	900.241.200	4	PIN	TOURILLON	PERNO	STIFT	PERNO	48-60-72 USA
21	900.241.227	4	PIN	TOURILLON	PERNO	STIFT	PERNO	84 USA
21	900.241.227	4	PIN	TOURILLON	PERNO	STIFT	PERNO	48-60-72 CAN
21	900.277.004	4	PIN	TOURILLON	PERNO	STIFT	PERNO	84 CAN
22	900.104.045.T	9	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
23	900.102.121.T	7	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
24	900.241.339	2	BELT	COURROIE	CINGHIA	RIEMEN	CINTA	48
24	900.241.340	2	BELT	COURROIE	CINGHIA	RIEMEN	CINTA	60
24	900.241.341	2	BELT	COURROIE	CINGHIA	RIEMEN	CINTA	72
24	900.268.004	2	BELT	COURROIE	CINGHIA	RIEMEN	CINTA	84
25	900.103.030.T	3	RING NUT	EMBOUT	GHIERA	NUTMUTTER	CASQUILLO	
26	900.241.189.0	3	HUB	MOYEU	MOZZO	NABE	MOZO	
27	900.241.319	1	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	
28	900.241.316	1	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	48
28	900.241.317	1	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	60
28	900.241.318.0	1	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	72-84
29	900.241.313	2	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	48
29	900.241.314	2	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	60
29	900.241.315.0	2	PULLEY	POULIE	PULEGGIA	REIMENSCHIEBE	POLEA	72-84
30	900.241.540	1	BAR	BARRE	BARRA	STANGE	BARRA	
31	900.106.017	8	CIRCLIP	SERFLEX	SEEGER	SEEGER	SEEGER	84 USA
31	900.106.017	8	CIRCLIP	SERFLEX	SEEGER	SEEGER	SEEGER	CAN
32	900.116.030	2	U-BOLT	MANILLE	CAVALLOTTO	U-BOLZEN	SOPORTE	
33	900.116.043	2	HITCH	ATTELAGE	ATTACCO	ANBAU	ENGANCHE	
34	900.241.343	1	HITCH	ATTELAGE	ATTACCO	ANBAU	ENGANCHE	
35	900.240.053	1	PIN	TOURILLON	PERNO	STIFT	PERNO	
36	900.108.006	5	SPLIT PIN	GOUVILLE	COPIGLIA	ARRETIERUNG	PASADOR	
37	900.102.023.T	1	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
38	900.104.046.T	20	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
39	900.103.019.T	1	NUT	ECROU	DADO	MUTTER	TUERCA	
40	900.102.115.T	4	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
41	900.104.036.T	12	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
42	900.102.245.T	5	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	

EM 3

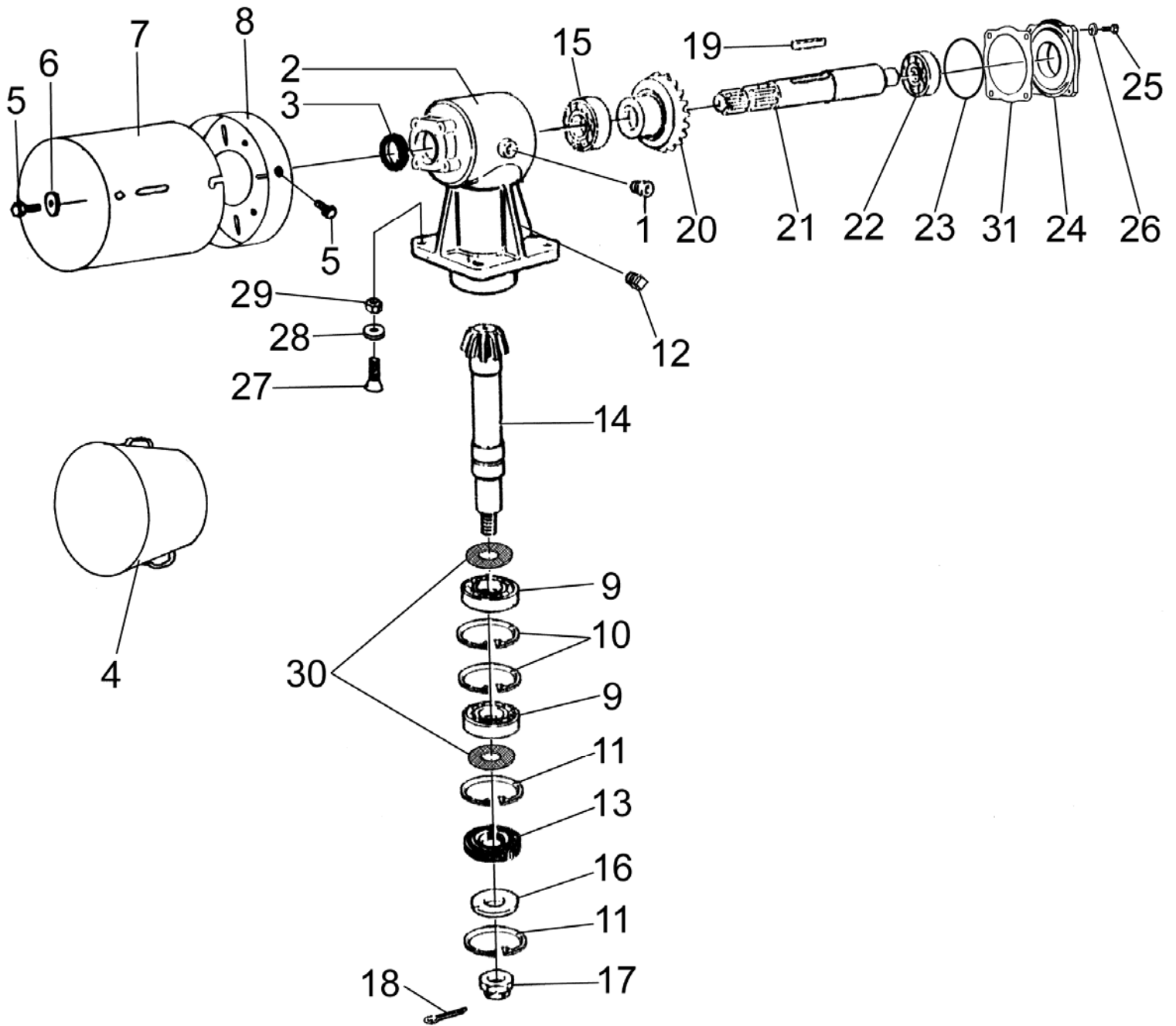
Frame



REF	CODE	QTY	ENGLISH	FRANÇAIS	ITALIANO	DEUTSCH	ESPAÑOL	NOTE
43	900.102.098.T	4	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
44	900.104.047.T	2	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	
45	900.116.012	2	PIN	TOURILLON	PERNO	STIFT	PERNO	
46	900.104.073.T	2	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	
47	900.103.009.T	2	NUT	ECROU	DADO	MUTTER	TUERCA	
48	900.103.035.T	26	NUT	ECROU	DADO	MUTTER	TUERCA	
49	900.116.044	2	PIN	TOURILLON	PERNO	STIFT	PERNO	
50	900.102.379.T	2	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
51	900.104.043.T	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	
52	900.102.254	3	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
53	900.241.166	3	KNIFE	COUPEAU	COLTELLO	MESSER	CUCHILLA	48
53	900.241.167	3	KNIFE	COUPEAU	COLTELLO	MESSER	CUCHILLA	60
53	900.241.168	3	KNIFE	COUPEAU	COLTELLO	MESSER	CUCHILLA	72
53	900.241.170	3	KNIFE	COUPEAU	COLTELLO	MESSER	CUCHILLA	84
54	900.109.016	3	PLUG	BOUCHON	TAPPO	DECKEL	TAPON	
55	900.241.345.2	3	SHAFT	ARBRE	ALBERO	WELLE	EJE	
56	900.105.013	3	KEY	CLAVETTE	CHIAVETTA	KEIL	CHAVETA	
57	900.241.346	3	DUST COVER	PARE-POUDRE	PARAPOLVERE	STAUBDICHTUNG	GUARDA POLVO	
58	900.241.347	9	SPACER	ENTRETOISE	DISTANZIALE	ABSTANDSRING	DISTANCIADOR	
59	900.100.043	6	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	
60	900.241.348	3	SPACER	ENTRETOISE	DISTANZIALE	ABSTANDSRING	DISTANCIADOR	
61	900.105.015	3	GREASE NIPPLE	GRAISSEUR	INGRASSATORE	SCHMIERNIPPEL	ENGRASADOR	
62	900.105.007	4	GREASE NIPPLE	GRAISSEUR	INGRASSATORE	SCHMIERNIPPEL	ENGRASADOR	
63	900.241.007	3	SPACER	ENTRETOISE	DISTANZIALE	ABSTANDSRING	DISTANCIADOR	
64	900.105.003	1	KEY	CLAVETTE	CHIAVETTA	KEIL	CHAVETA	
65	900.241.419	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	
66	900.103.109.T	4	NUT	ECROU	DADO	MUTTER	TUERCA	
67	900.211.027	2	BUSH	COQUILLE	BOCCOLA	BUCHSE	CASQUILLO	
68	900.102.281.T	2	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
69	900.277.001	1	PIN	TOURILLON	PERNO	STIFT	PERNO	48-60-72
69	900.277.002	1	PIN	TOURILLON	PERNO	STIFT	PERNO	84
70	900.103.018.T	2	NUT	ECROU	DADO	MUTTER	TUERCA	
71	900.103.054.T	7	NUT	ECROU	DADO	MUTTER	TUERCA	
72	900.102.012	12	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
73	900.104.035	12	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	
74	900.103.002	12	NUT	ECROU	DADO	MUTTER	TUERCA	
75	900.102.194.T	4	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
76	900.102.121.T	8	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	USA
76	900.102.121.T	8	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	48-60-72 CAN
76	900.102.098.T	8	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	84 CAN
77	900.104.045.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	USA
77	900.104.045.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	48-60-72 CANADA
77	900.104.046.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	84 CAN
78	900.104.048.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	48-60-72 USA
78	900.104.059.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	84 USA
78	900.104.059.T	8	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHLEIBE	ARANDELA	CAN

EM 3

Gearbox



REF	CODE	QTY	ENGLISH	FRANÇAIS	ITALIANO	DEUTSCH	ESPAÑOL	NOTE
1	900.102.079	1	PLUG	BOUCHON	TAPPO	DECKEL	TAPON	
2	900.241.480	1	CASE	BOITE	SCATOLA	KISTE	CAJA	
3	900.101.054A	1	OIL SEAL	PARE-HUILE	PARAOLIO	SIMMERRING	PARA-ACEITE	
4	900.241.302	1	GUARD	PROTECTION	PROTEZIONE	SCHUTZ	PROTECCION	
5	900.102.256.T	5	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
6	900.104.057.T	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
7	900.117.072	1	GUARD	PROTECTION	PROTEZIONE	SCHUTZ	PROTECCION	
8	900.117.070	1	PROT. HOLDER	DISQUE	FONDELLO	ZWSCHUTZHALTER	DISCO	
9	900.100.038	2	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	
10	900.106.013	2	CIRCLIP	SERFLEX	SEEGER	SEEGER	SEEGER	
11	900.106.011	2	CIRCLIP	SERFLEX	SEEGER	SEEGER	SEEGER	
12	900.109.021	1	PLUG	BOUCHON	TAPPO	DECKEL	TAPON	
13	900.101.013	1	OIL SEAL	PARE-HUILE	PARAOLIO	SIMMERRING	PARA-ACEITE	
14	900.241.483	1	PINION	PIGNON	PIGNONE	RITZEL	PINON	
15	900.100.008	1	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	
16	900.241.485	1	LID	COUVERCLE	COPERCHIO	DECKEL	TAPA	
17	900.103.064	1	NUT	ECROU	DADO	MUTTER	TUERCA	
18	900.108.003	1	SPLIT PIN	GOUPILLE	COPIGLIA	ARRETIERUNG	PASADOR	
19	900.105.053	1	KEY	CLAVETTE	CHIAVETTA	KEIL	CHAVETA	
20	900.241.482	1	CROWN	COURONNE	CORONA	TELLERRAD	CORONA	
21	900.241.481	1	SHAFT	ARBRE	ALBERO	WELLE	EJE	
22	900.100.097	1	BEARING	ROULEMENT	CUSCINETTO	KUGELLAGER	COJINETE	
23	900.237.128	1	RING	ANNEAU	ANELLO	RING	ANILLO	
24	900.241.484	1	LID	COUVERCLE	COPERCHIO	DECKEL	TAPA	
25	900.102.008	4	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
26	900.104.024	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
27	900.102.164.T	4	SCREW	VIS	VITE	SCHRAUBE	TORNILLO	
28	900.104.036.T	4	WASHER	RONDELLE	RONDELLA	ZWISCHENSCHIEBE	ARANDELA	
29	900.103.035.T	4	NUT	ECROU	DADO	MUTTER	TUERCA	
30	900.139.117	2	GASKET	JOINT	GUARNIZIONE	DICHTUNG	JUNTA	
31	900.139.116	1	GASKET	JOINT	GUARNIZIONE	DICHTUNG	JUNTA	

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.



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* : _____

<p>DEALER: I HEREBY CERTIFY THAT</p> <ul style="list-style-type: none"> 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. 	<p>PURCHASER: I HEREBY ACCEPT</p> <ul style="list-style-type: none"> 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.
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<p style="text-align: center;">(address)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Date: _____ Signature: _____</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">DEALER</p>	<p style="text-align: center;">(address)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Date: _____ Signature: _____</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">PURCHASER</p>
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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

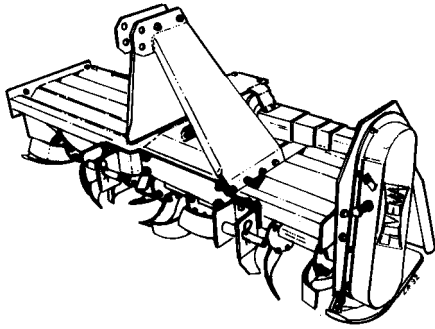
- ❖ *TYPE OF IMPLEMENT* : _____
- ❖ *IMPLEMENT SERIAL NUMBER* : _____
- ❖ *DATE OF PURCHASE* : _____

COPY TO DELIVER TO: SOVEMA

<p>DEALER: I HEREBY CERTIFY THAT</p> <ul style="list-style-type: none"> 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. 	<p>PURCHASER: I HEREBY ACCEPT</p> <ul style="list-style-type: none"> 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.
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<p style="text-align: center;">(address)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Date: _____ Signature: _____</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">DEALER</p>	<p style="text-align: center;">(address)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>Date: _____ Signature: _____</p> <p style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; font-size: 2em;">PURCHASER</p>
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SOVEMA Product Line

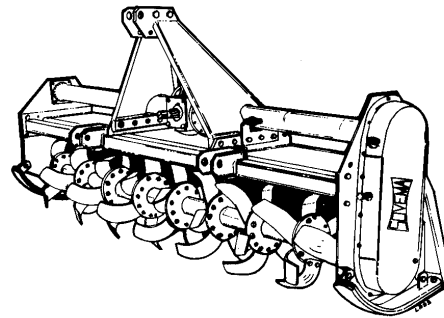


SIDE SHIFT ROTARY TILLERS

- 15 different models;
- For tractors from 12 to 70 HP
- Working width from 80 to 200 cm.

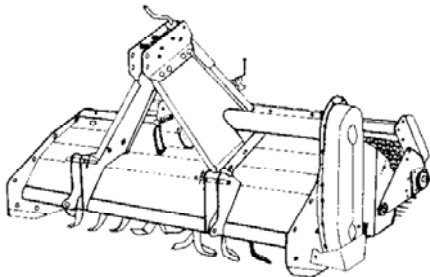
FIXED ROTARY TILLERS

- Over 45 different models;
- For tractors from 15 to 130 HP
- Working width from 80 to 300 cm.



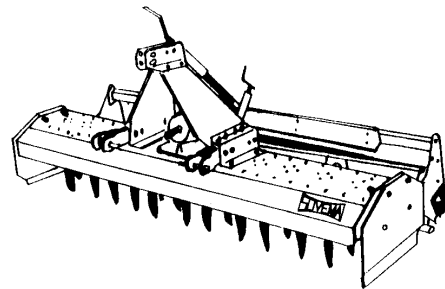
STONE BURRIERS

- 6 different models;
- For tractors from 35 to 90 HP
- Working width from 100 to 200 cm.



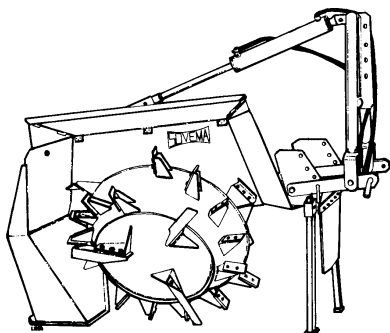
ROTARY HARROWS

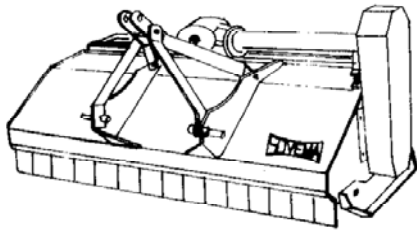
- 13 different models;
- For tractors from 25 to 150 HP
- Working width from 110 to 500 cm.



ROTARY DITCHERS

- 10 different models;
- For tractors from 40 to 130 HP
- Working depth from 45 to 110 cm.



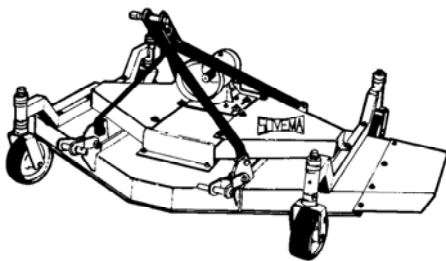
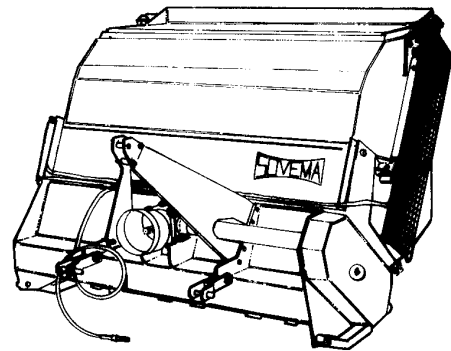


FLAIL MOWERS - SHREDDERS

- 35 different models;
- For tractors from 15 to 120 HP
- Working width from 100 to 470 cm.

MOWERS COLLECTOR

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

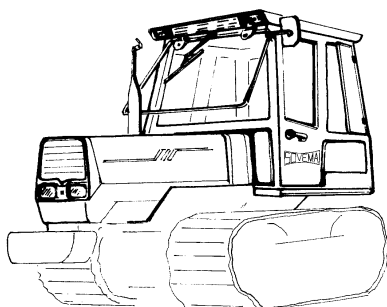
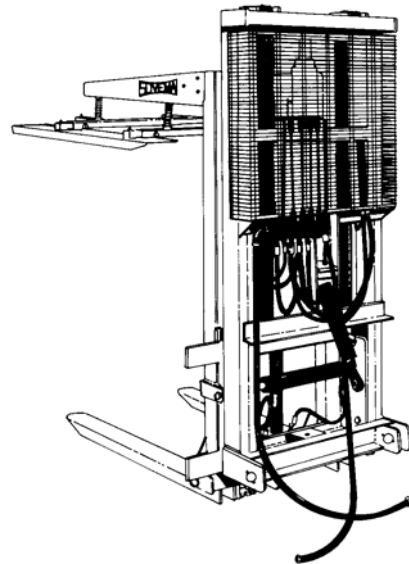


FINISHING MOWERS

- 14 different models;
- For tractors from 15 to 70 HP
- Working width from 100 to 300 cm.

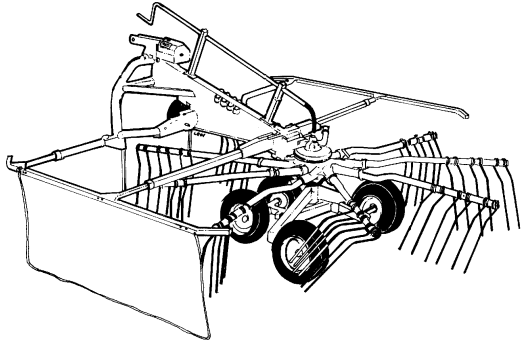
HYDRAULIC FORK-LIFTS

- 11 different models;
- For tractors up to 60 HP
- Lifting capacity from 1.300 Kg to 2.000 Kg.



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.

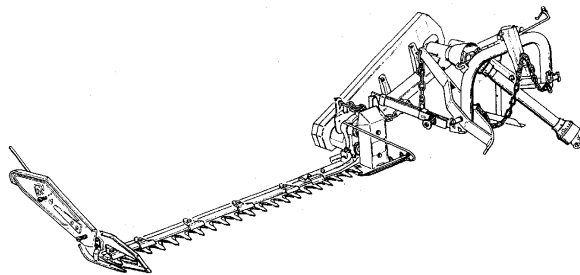
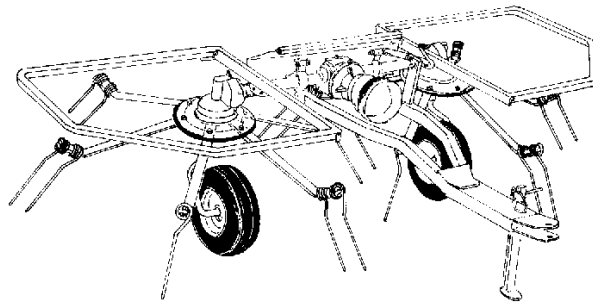


ROTARY RAKE

- 4 different models
- For tractors from 30 to 70 HP
- Working width from 340 to 695 cm.

HAY TEDDERS

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



SICKLE BAR MOWER

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

FINGER WHEELS

- 8 different models (8-20 stars)
- For tractors from 30 to 80 HP
- Working width from 7.35 to 12.50 m.

