

**TILLERMAXX**

**Tillers**

# **CAUTION**

**THE FOLLOWING SAFETY PRECAUTIONS SHOULD BE THOROUGHLY UNDERSTOOD BEFORE ATTEMPTING TO BEGIN ASSEMBLING THIS MACHINE.**

1. Select an area for assembly that is clean and free of any debris, which might cause persons working on the assembly to trip.
2. Do not lift heavy parts or assemblies. Use crane, jack, tackle, fork trucks or other mechanical devices.
3. Preview the assembly instructions in your operator's manual before proceeding further.
4. If the assembly instructions call for parts or assemblies to be blocked up, use only blocking material that is in good condition and is capable of handling the weight of the assembly to be blocked. Also insure that the blocking material is on a clean, dry surface.
5. Never put hands, or any part of your body, under blocked up assemblies if at all possible.
6. After completing assembly, thoroughly inspect the machine to be sure that all nuts, bolts, hydraulic fittings or any other fastened assemblies have been tightened.
7. Before operating the machine, thoroughly read the operation section of your operator's manual.
8. Before operating, read the maintenance section of your operator's manual to be sure that any parts requiring lubrication, such as gearboxes, are full, to avoid any possible damage.
9. **Before operating equipment – if you have any questions regarding the proper assembly or operation, contact your dealer or representative.**

## **STATEMENT OF POLICY**

It is the policy of TILLERMAXX/MINOS to improve its products where it is possible and practical to do so. TILLERMAXX/MINOS reserves the right to make changes or improvements in design and construction at any time, without incurring the obligation to make these changes on previously manufactured units.

### **TO THE OWNER:**

Read this manual before using your rotary tiller. This manual is provided to give you the necessary operating and maintenance instructions for keeping your rotary tiller in top operating condition. Please read this manual thoroughly. Understand what each control is for and how to use it. Observe all safety signs on the machine and noted throughout the manual for safe operation of the implement. Keep this manual handy for ready reference. Like all mechanical products, it will require cleaning and upkeep. Lubricate the tiller as specified.

**Use only genuine TILLERMAXX/MINOS Equipment service parts. Substitute parts will void warranty and may not meet standards required for safe and satisfactory operation.**

## **RETAIL CUSTOMER'S RESPONSIBILITY**

**It is the retail customer and/or Operator's responsibility to read the Operator's Manual, to operate, lubricate, maintain, and store the product in accordance with all instructions and safety procedures. Failure of the operator to read the Operator's Manual is a misuse of this equipment. It is the retail customer and/or Operator's responsibility to inspect the product and to have any part(s) repaired or replaced when continued operation would cause damage or excessive wear to other parts or cause safety hazard. It is the retail customer and/or Operator's responsibility to deliver the product to the authorized TILLERMAXX/MINOS Dealer, from whom it was purchased, for service or replacement of defective parts that are covered by warranty. Repairs to be submitted for warranty consideration must be made within thirty (30) days of failure. It is the retail customer and/or Operator's responsibility for any cost incurred by the Dealer for traveling to or hauling of the product for the purpose of performing a warranty obligation or inspection.**

## **CHECKLISTS**

### **DELIVERY CHECKLIST**

**Inspect the tiller thoroughly after assembly to be certain it is set up set up properly. The following checklist is a reminder of points to inspect. Check off each as it is found satisfactory or after proper adjustment is made.**

- Check operator's manual and familiarize the operator with all sections of it.
- Check that all safety shielding is in place.
- Check all bolts to be sure they are tight or adjusted properly at hinged locations.
- Check that all cotter pins are properly installed.
- Check PTO driveline. Make sure it is the correct length to operate tiller with intended tractor.
- Check all lubrication points with grease fittings have been lubricated.
- Check that blades have been properly installed. Check all blade beam bolts.
- Check tiller attitude, after mounting on tractor.
- Check that gearbox is properly serviced and seals are not leaking.
- Check shear bolt for proper grade and installation.
- Check front of input gearbox shaft and make sure that snap ring is properly installed.
- Check that all safety signs (decals) are in place and readable.

## DAILY CHECKLIST

- Check that tiller is properly and securely attached to tractor.
- Check that all nuts and bolts are secure and that all safety shields are in place.
- Check condition of blades and security of attachment.
- Check that PTO driveline shields are securely locked and clear the front all parts of the frame.
- Adjust the tractor top link so the front of the tiller is level with the rear. Then raise the tractor lift very slowly; making sure that the front driveshaft shield does not hit the draw bar. If it does, damage will be done to the driveshaft shield and, if it hits hard enough, it will also damage the driveshaft itself.

**NOTE: This type of damage is not covered under warranty, as it is totally under the control and the responsibility of the operator.**

## IMPORTANT!

**GEARBOXS WERE NOT FILLED AT FACTORY. IT MUST BE SERVICED PRIOR TO OPERATING THE TILLER. FILL TO PROPER WITH LEVEL WITH 80/90 GEAR OIL. FAILURE TO SERVICE WILL RESULT IN DAMAGE TO GEARBOX(S).**

## TO THE OWNER / OPERATOR / DEALER

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

## BEFORE YOU START!!

**Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense! THE SAFETY ALERT SYMBOL IDENTIFIES IMPORTANT SAFETY WARNING MESSAGES. CAREFULLY READ EACH WARNING MESSAGE THAT FOLLOWS.**

FAILURE TO UNDERSTAND AND OBEY A SAFETY WARNING, OR RECOGNIZE A SAFETY HAZARD, COULD RESULT IN AN INJURY OR DEATH TO YOU OR OTHERS AROUND YOU. THE OPERATOR IS ULTIMATELY RESPONSIBLE FOR THE SAFETY OF HIM/HERSELF, AS WELL AS OTHERS, IN THE OPERATING AREA OF THE EQUIPMENT.

## UNDERSTAND SIGNAL WORDS

A signal word – DANGER, WARNING OR CAUTION- is used with the safety-alert symbol. DANGER identifies the most serious hazards. DANGER and WARNING safety signs are located near the specific hazard. CAUTION safety signs list general precautions. The safety-alert symbol is also used in this manual to call attention to safety messages.

## IMPORTANT SAFETY INFORMATION!

Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, before assembly or operating, to acquaint yourself with the machines. It is the implement owner's responsibility, if this machine is used by any person other than you, is loaned or rented, to make certain that the operator, prior to operating:

1. Reads and understands the operator's manuals.
2. Is instructed in safe and proper use.

The use of this equipment is subject to certain hazards, which cannot be protected against by mechanical means or product design. All operators of this equipment must read and understand this entire manual, paying particular attention to safety and operating instructions, prior to using. If there is something in this manual you do not understand, ask your supervisor, or dealer, to explain it to you. Most accidents occur because of neglect or carelessness. Keep all helpers and bystanders' twenty-five feet (25') from an operating rear blade. Only properly trained people should operate this machine. It is recommended the tractor be equipped with Rollover Protection System (ROPS) and a seat belt that is used. Always stop the tractor, set brake, shut off the tractor engine, remove the tractor key, and lower the implement to the ground before dismounting tractor. Never leave tractor or equipment running while unattended. Please remember it is important that you read and heed the safety signs on the rear blade, and the safety rules set forth. Clean or replace all safety signs if they cannot be read clearly or understood. They are there for your safety as well as the safety of others. The safe use of this machine is strictly up to you, the operator.

## EQUIPMENT SAFETY GUIDELINES

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury, study the following precautions and insist those working with you, or for you, follow them. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly With a safety shield removed. However equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use. Replace any CAUTION, WARNING, DANGER or instruction safety sign that is not readable or is missing. Location of such safety signs is indicated in this booklet. Never use alcoholic beverages or drugs, which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications. Review the safety instructions with all users annually. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and how it works.** To prevent **injury** or **death**, use a tractor equipped with a Roll-Over Protective System (ROPS). Do not paint over, remove or deface any safety signs or warning signs on your equipment. Observe all safety signs and practice the instruction on them. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question – **Don't try it.** Do not

modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependant upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to safety messages and operation instruction in each of the appropriate sections of the tractor and tiller manuals. Pay close attention to the safety signs attached to the tractor and tiller. Keep safety signs clean and legible at all times. Replace safety signs that are missing or become illegible. Replaced parts that displayed a safety sign should also display the current sign. Safety signs are available from your Distributor or Dealer Parts Department or the Factory. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment. It has been said, "the best safety device is an informed, careful operator." We ask you to be that kind of an operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. Accidents can be avoided. Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your tractor, before assembly or operating, to acquaint yourself with the machines. It is the implement owner's responsibility, if this machine is used by any person other than you, is loaned or rented, to make certain that the operator, prior to operating:

3. Reads and understands the operator's manuals.
4. Is instructed in safe and proper use.

Know your controls and how to stop the tractor, engine, and tiller quickly in an emergency. Read this manual and the one provided with your tractor.

Train all new personnel and review instructions frequently with existing workers. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible **serious injury or death. Do not allow children to operate this machine.**

## **PREPARATION**




Never operate the tractor or tiller until you have read and completely understand this manual, the Tractor Operator's Manual, and each of the Safety Messages found on the safety signs on the tractor and tiller. Personal protection equipment including hardhat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose clothes or jewelry to be around moving parts.

## **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!**




Tractors with or without Tillers attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80db. Noise over 85db on a long-term basis can cause severe hearing loss. Noise over 90db adjacent to the operator over a long-term basis may cause permanent, total hearing loss. **NOTE:** hearing loss from loud noise (from tractors, chain saws,

radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery. Operate the tiller only with a tractor equipped with an approved Roll-Over Protection System (ROPS). Always wear your seatbelt on tractors equipped with ROPS. Serious injury or even death could result from falling off the tractor, particularly during a turn over when the operator could be pinned under the ROPS or the tractor. Clear the area to be cut of stones, branches or other debris that might be thrown, causing injury or damage. Operate only in daylight or good artificial light. Ensure tiller is properly mounted, adjusted and in good operating condition. Make sure driveline spring-activated locking pin or balls operate freely and are seated firmly in tractor PTO stub shaft groove. Ensure that all safety shielding and safety signs are properly installed and in good condition.

## Torque Values Chart for Common Bolt Sizes

Bolt Size (Inches)	Bolt Head Identification					
						
	Grade 2		Grade 5		Grade 8	
in-tpi <sup>1</sup>	N · m <sup>2</sup>	ft-lb <sup>3</sup>	N · m	ft-lb	N · m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12
1/4" - 28	8.5	6	13	10	18	14
5/16" - 18	15	11	24	17	33	25
5/16" - 24	17	13	26	19	37	27
3/8" - 16	27	20	42	31	59	44
3/8" - 24	31	22	47	35	67	49
7/16" - 14	43	32	67	49	95	70
7/16" - 20	49	36	75	55	105	78
1/2" - 13	66	49	105	76	145	105
1/2" - 20	75	55	115	85	165	120
9/16" - 12	95	70	150	110	210	155
9/16" - 18	105	79	165	120	235	170
5/8" - 11	130	97	205	150	285	210
5/8" - 18	150	110	230	170	325	240
3/4" - 10	235	170	360	265	510	375
3/4" - 16	260	190	405	295	570	420
7/8" - 9	225	165	585	430	820	605
7/8" - 14	250	185	640	475	905	670
1" - 8	340	250	875	645	1230	910
1" - 12	370	275	955	705	1350	995
1-1/8" - 7	480	355	1080	795	1750	1290
1 1/8" - 12	540	395	1210	890	1960	1440
1 1/4" - 7	680	500	1520	1120	2460	1820
1 1/4" - 12	750	555	1680	1240	2730	2010
1 3/8" - 6	890	655	1990	1470	3230	2380
1 3/8" - 12	1010	745	2270	1670	3680	2710
1 1/2" - 6	1180	870	2640	1950	4290	3160
1 1/2" - 12	1330	980	2970	2190	4820	3560

Bolt Size (Metric)	Bolt Head Identification					
						
	Class 5.8		Class 8.8		Class 10.9	
mm x pitch <sup>4</sup>	N · m	ft-lb	N · m	ft-lb	N · m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

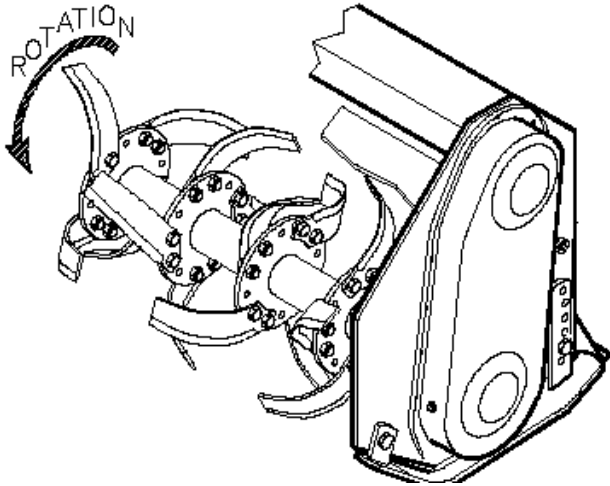
<sup>1</sup> in-tpi = nominal thread dia. in inches-threads per inch

<sup>2</sup> N · m = newton-meters

<sup>3</sup> ft-lb = foot pounds

<sup>4</sup> mm x pitch = nominal thread dia. in millimeters x thread pitch

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.



- **USE ONLY 540 RPM PTO SPEED with TILLERMAXX/MINOS tillers.**

Attach tiller to tractor 3-point hitch per tractor operator's manual. Do not attach driveline at this time. **NOTE** Due to the many variations in tractor/implement hitch points and corresponding differences in distances between tractor PTO shafts and implement input shafts, drivelines may need to be shortened as described in the following steps:

1. Raise and lower tiller to determine position with shortest distance between the tractor PTO shaft and gearbox input shaft. Shut down tractor, leaving tiller in position of shortest distance. **Securely block tiller in position.**
2. Pull driveline apart. Attach outer (female) section to tractor PTO shaft. Pull on driveline section to be sure that yoke locks into place.
3. Hold driveline sections parallel to each other to determine if it is too long. Each section should end
4. Raise and lower tiller to determine position with greatest distance between PTO shaft and gearbox input shaft. Shut down tractor leaving tiller in position of greatest distance. **Securely block tiller in position.**
5. Hold driveline sections parallel to each other and check for minimum 6 inches overlap. If driveline has been marked for cutting, overlap will be the distance between two marks. If driveline has less than minimum overlap, do not use.

## Pre-Operation Check List

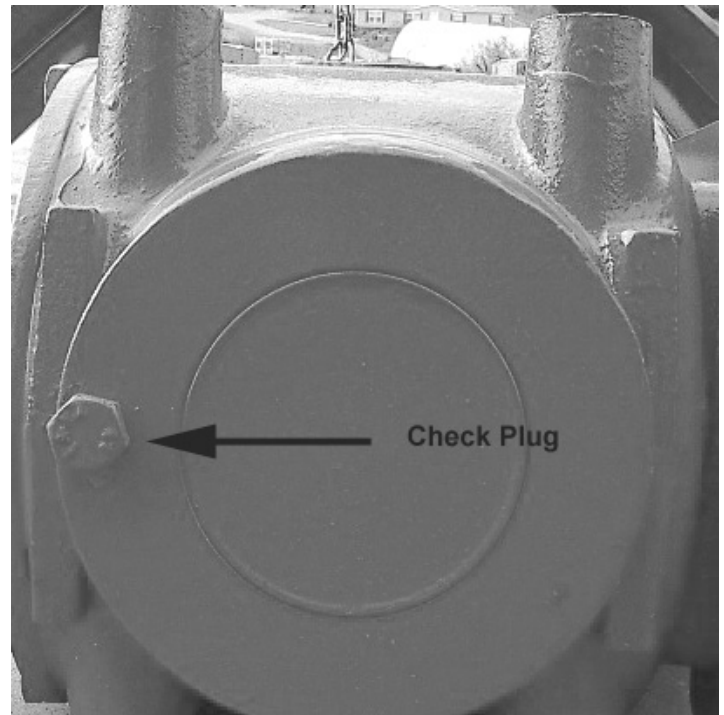
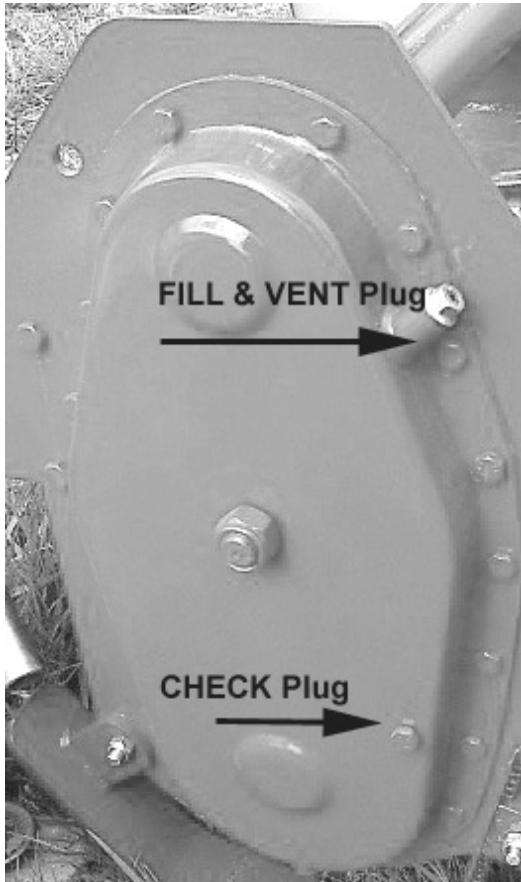
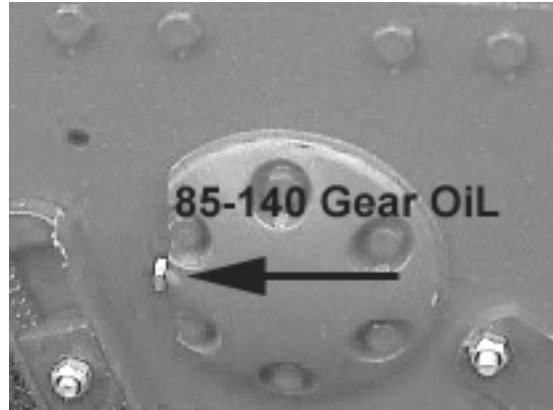
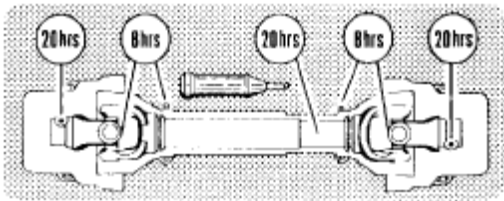
- Check blades and rotor to be sure that no foreign objects such as wire or steel strapping bands are wrapped around them.
- Check blade bolts for tightness. Tighten to 118 ft./lbs.
- Inspect blades for wear. Replace if necessary.
- Make certain driveline shields are in place and in good repair.
- During operation, listen for abnormal sounds
- Driveline Universal Joints - Apply multi-purpose grease with grease gun before use.
- Driveline Guard - Apply 2-3 shots of multipurpose grease with grease gun to plastic fitting.
- Driveline - Disconnect PTO driveline, pull the two sections apart, apply thin coat of multi-purpose grease to inside of outer (female) section. Reassemble sections and install. Pull each section to be sure driveline and shields are securely connected. Make certain PTO shielding is in good condition.
- Rotor Shaft Bearing - Apply 2-3 shots of multipurpose grease with hand pump grease gun every 40 hrs. of operation and before storage.
- Input Gearbox - Add EP80W-90 gear oil, if necessary, to bring oil level to check plug.
- Lateral Gearbox – TILLERMAXX/MINOS Models (Gear Drive) – Add EP80W-90 gear oil, if necessary, to bring oil level to check plug located on side of gearbox.

## Lubrication

- Before Each Use To remove yoke shield, depress the three tabs with a screwdriver and slide cover back. **THE TILLER CAN FALL FROM HYDRAULIC SYSTEM FAILURE. TO AVOID SERIOUS INJURY OR DEATH, SECURELY SUPPORT TILLER BEFORE WORKING UNDERNEATH.**



**PTO LUBRICATION SCHEDULE**



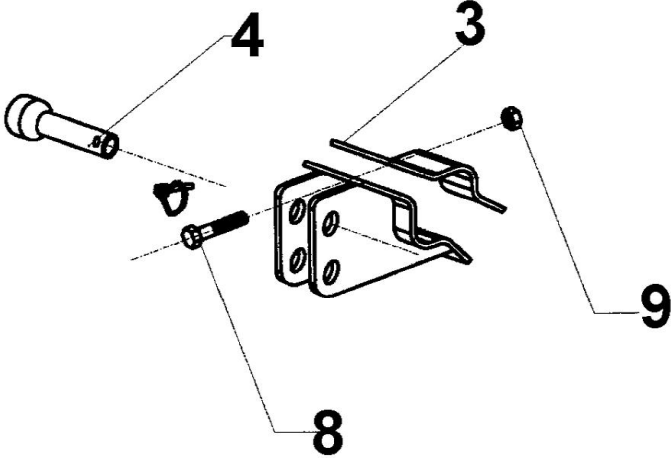
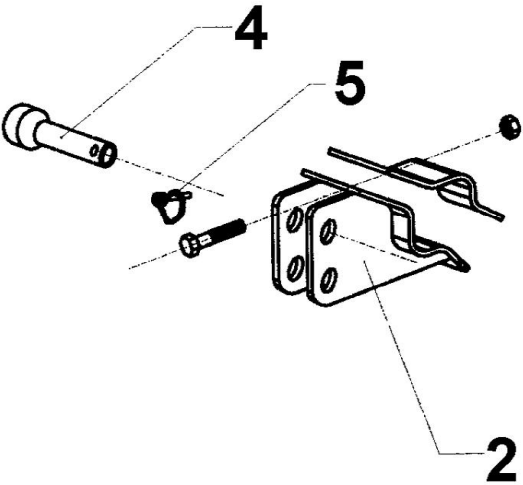
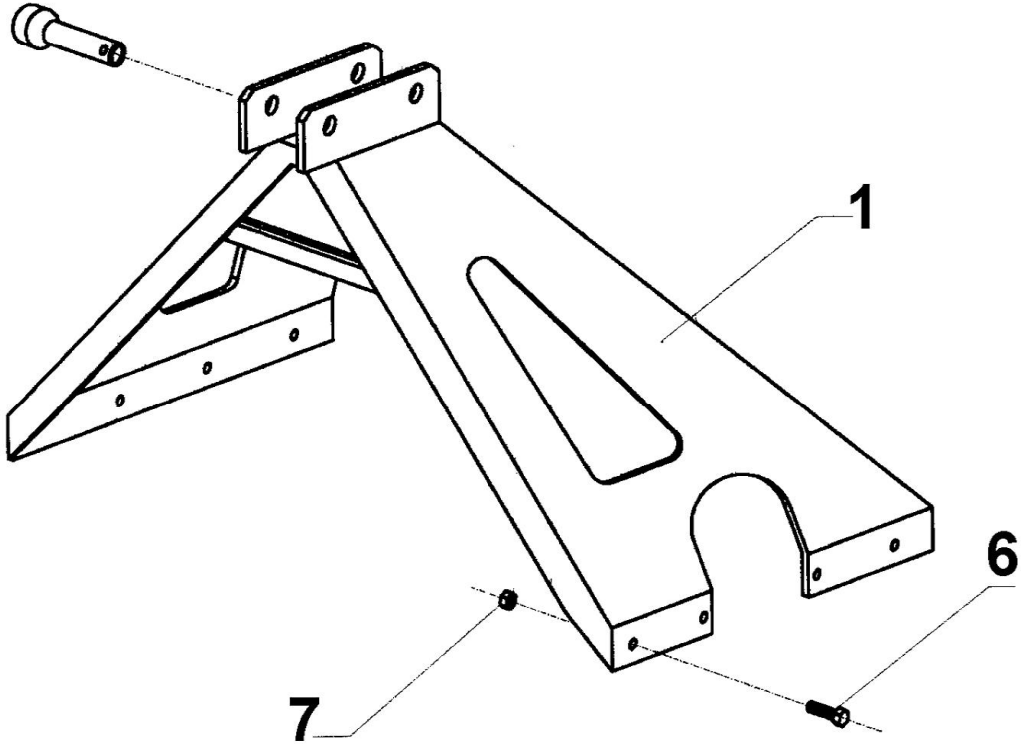
Change Oil every 60 Hours of operation

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>Solution</b>
Uneven Till	Tiller not level right to left	Adjust skids for same depth Adjust tractor lower lift arms
Noisy Loose components	Loose bolts	Check all bolts for tightness. Refer to Torque Specs
Noisy Gearbox	Low oil in gearbox	Check for proper oil level. Refer to Lubrication Section
PTO Knocking	Tiller is tilted towards the rear	Adjust 3-point hitch top link to level tiller
Bogging Tractor	engine speed too slow	Increase engine speed to 540 PTO rpm
Vibrating tillers up and down	Ground speed too fast	Use lower tractor gear

# **MR TILLER SERIES**

# **PARTS**

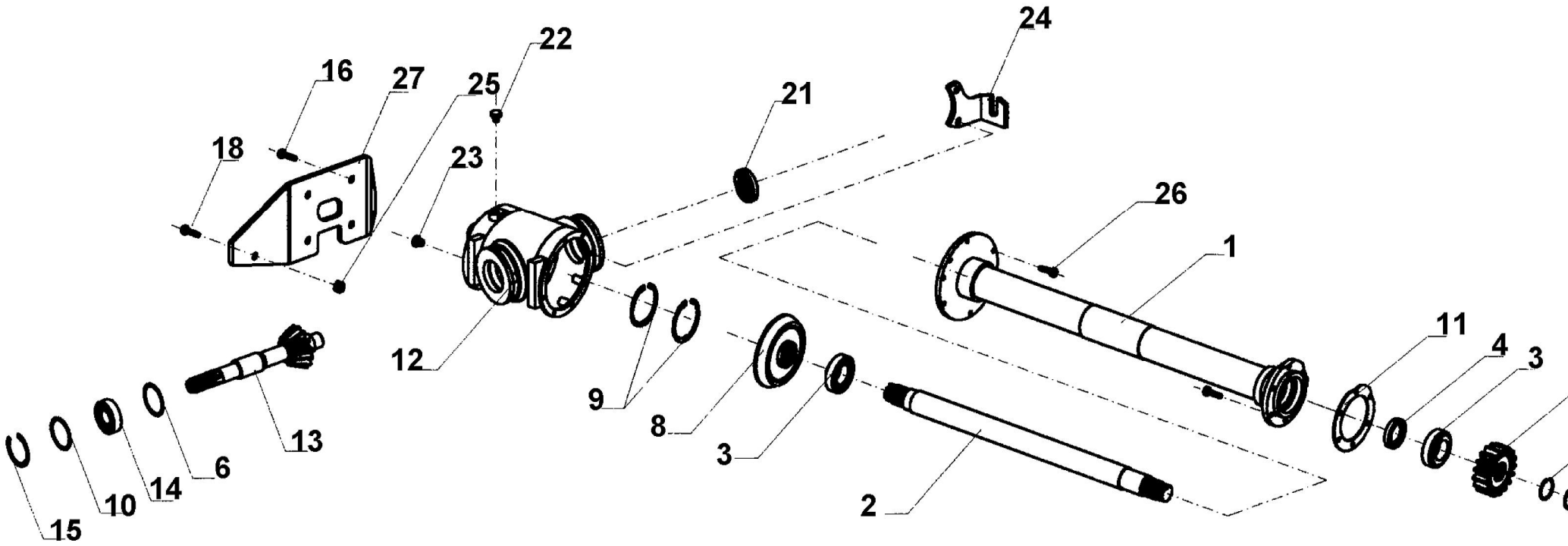
# 133-2 THREE POINT HITCH SYSTEM



**133-2 THREE POINT HITCH SYSTEM**

POS	PART #	PART NAME	QTY	NOTE
1	133-2-1	Three Point Hitch	1	
2	133-2-2	Connection Plate Group	2	
3	133-2-3	Connection Plate	2	
4	133-2-4	Hitch Bolt	3	
5	133-2-5	Wire safety clamp,galv.	3	F Y 8
6	133-2-6	Bolt,galv.	6	M12x1.5 - 25ag
7	133-1-7	Lock Nut	6	M12x1.5agf
8	133-2-8	Bolt,galv.	4	M14x1.5 - 40agf
9	133-2-10	Lock Nut	4	M14x1.5agf

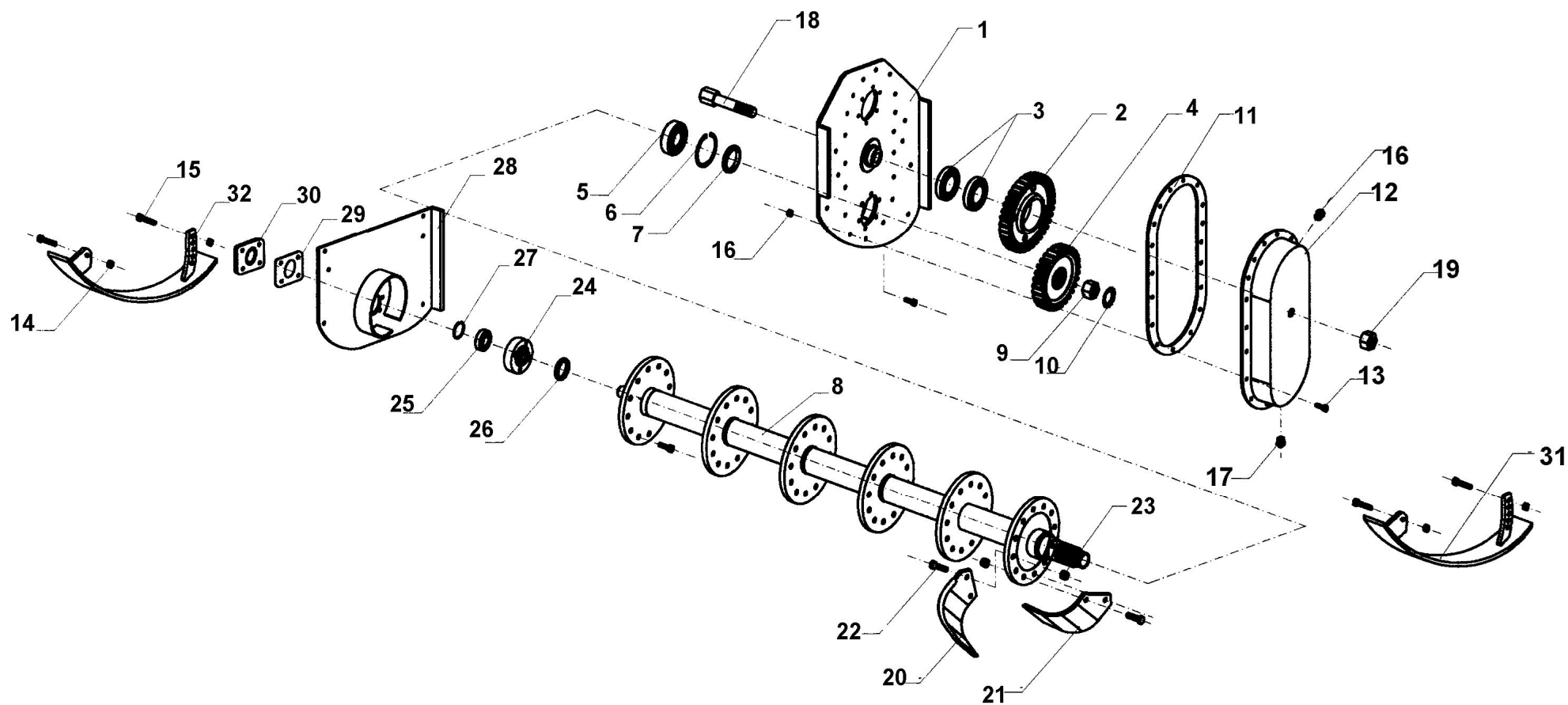
# 133-3 GEAR BOX



**133-3 GEAR BOX MR Tillers**

POS	PART #	PART NAME	QTY	INSTRUCTION
1	133-3-1-1	Gear-box pipe T-MIR-140	1	
1	133-3-1-2	Gear-box pipe T-MR-160	1	
2	133-3-2-1	Spindle T-MR-140	1	
2	133-3-2-2	Spindle T-MR-160	1	
3	133-3-3	Bearing	2	R6308
4	133-3-4	Felt	1	K40x80x10
5	133-3-5	Uppergear	1	
6	133-3-6	Shim	1	S 140x50x1
7	133-3-7	Spindle elastic ring	1	DS 35
8	133-3-8	Pinion	1	
9	133-3-9	Spindle elastic ring	2	DS 40
10	133-3-10	Shim	6	SI 40x50x0.5
11	133-3-11	Seal	1	Karton
12	133-3-12	Gearbox	1	
13	133-3-13	Spindle gear	1	
14	133-3-14	Bearing	1	R6207
15	133-3-15	Shim	1	SI 70x85x0,5
16	133-3-16	Elasticring	1	IS 72
17	133-3-17	Bearing	1	R6209
18	133-3-18	Shim	1	SI 60x70x0,5
19	133-3-19	Elasticring -	1	IS 85
20	133-3-20	Seal	1	K35x72x10
21	133-3-21	Seal	1	K35x85x10
22	133-3-22	Oil filling plug	4	
23	133-3-23	Oil plug	1	
24	133-3-24	Chain connection plate	1	
25	133-3-25	Skafleks	2Ogr	SF 20
26	133-3-26	Hexagonal bolt,galv	6	M10x1.5-20 ag
27	133-3-27	Gear-box connection plate	1	
28	133-3-28	Hexagonal bolt,galv	4	M12x1,5-20 ag
29	133-3-29	Hexagonal bolt,galv	2	M12x1,5-30ag
30	133-3-30	Hexagonal security nut,galv.	2	M12x1,5agf

# 133-4 ROTARY DRIVE UNIT



**133-4 ROTARY CULTIVATOR UNIT**

POS	PART #	PART NAME	QTY	NOTE
1	133-4-1	Side base	1	
2	133-4-2	Middle gear	1	1
3	133-4-3	Bearing	2	R6009
4	133-4-4	Bottom gear	1	
5	133-4-5	Bearing	1	R 6209
6	133-4-6	Elastic ring	1	IS 85
7	133-4-7	Seal	1	K45x72x10
8	133-4-8-1	Roller T-MR-145	1	
8	133-4-8-2	Roller T-MR-160	1	
9	133-4-9	Nut	1	M35x1,5
10	133-4-10	Safety plate	1	As 35
11	133-4-11	Seal for gear-box cover	1	
12	1334-12	Gear-box cover	1	
13	133-4-13	Hexagonal bolt,galv.	17	M81,5-20
14	133-4-14	Hexagonal-bolt,galv.	12	M10x1,5-25 ag
15	133-4-15	Hexagonalsecuritynut	12	M10x1,5agf
16	133-4-16	Oil filling plug	1	KT R 1/2"
17	133-4-17	Oil plug	1	KT R1/2"
18	133-4-18	Hexagonal bolt,galv.	1	M24x3-90 ag
19	133-4-19	Lock Nut	1	M24x3ag
20	133-4-20-1	Knife (right) T-MR-140	18	
20	133-4-20-1	Knife (right) T-MR-160	21	
20	133-4-20-1	Knife (right) T-MR-175	24	
21	133-4-21-1	Knife (left) T-MR-140	18	
21	133-4-21-1	Knife(left)T-MR-160	21	
21	133-4-21-1	Knife (left) T-MR-175	24	
22	133-4-22-1	Hex bolt,galv.T-MR-140	72	M12x1,5-35 ag
22	133-4-22-1	Hex bolt,galv.T-MR-160	84	M12x1,5-35 ag
23	133-4-22-2	Hex bolt,galv.T-MR-175	96	M12x1,5-35 ag
23	133-4-23-1	Hex security nut T-MR-140	72	M12x1,5 agf
23	133-4-23-1	Hex, security nut T-MR-160	84	M12x1,5 agf
23	133-4-23-1	Hex security nut T-MR-175	96	M12x1,5 agf
24	133-4-24	Bearing housing	1	
25	133-4-25	Bearing	1	R 6206
26	133-4-26	Seal	1	K45x58x10
27	133-4-27	Spindle elastic ring	1	DS 30
28	133-4-28	Roller connection plate	1	
29	133-4-29	Seal for costing protection cove	1	
30	133-4-30	Protection lid	1	
31	133-4-31	Skid (right)	1	
32	133-4-32	Skid (left)	1	

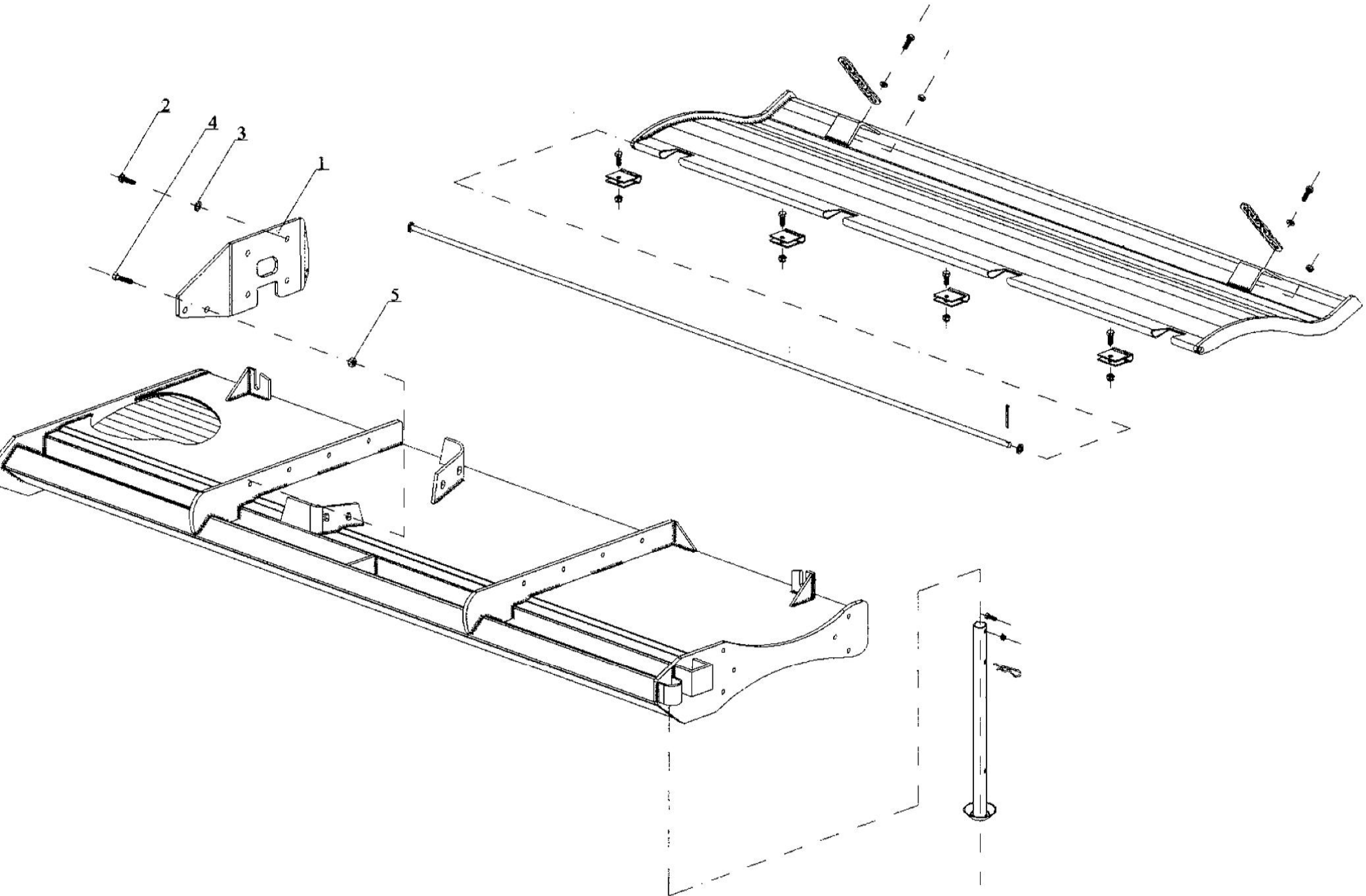


**SR TILLERS**

**185 & 210**

**PARTS**

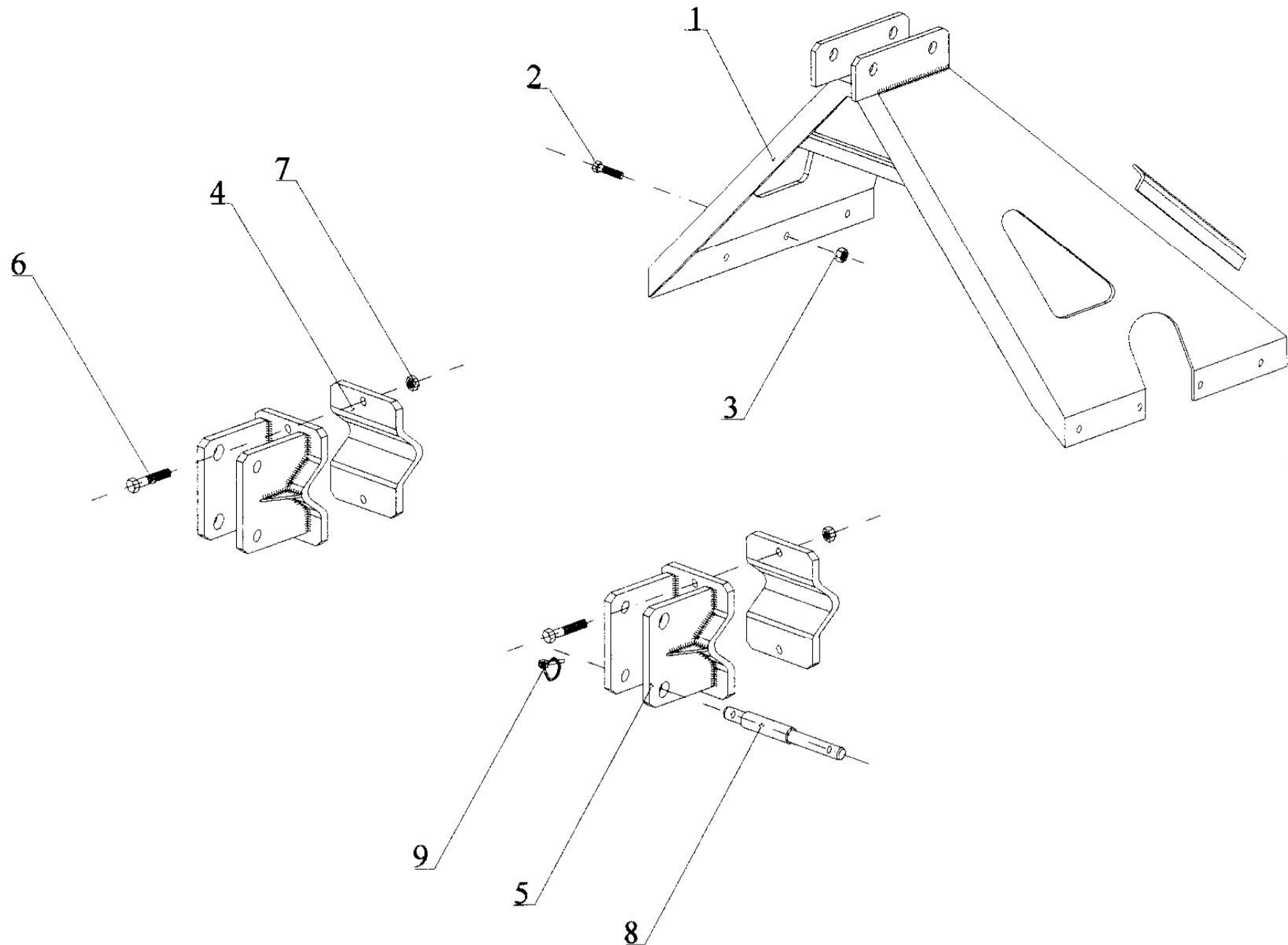
# 183-1 MAIN HOLDER



## SR-1 MAIN HOLDER

Pos.	Part code	Part name	Quantity	NOTE
1	183-1-1	Gear box connection	1	
2	183-1-2	Hexagonal bolt,galv.	4	M16x2-30ag
3	183-1-3	Washer	4	Pul M16
4	183-1-4	Hexagonal bolt,galv.	4	M12x1.5-30ag
5	183-1-5	Hexagonal nut,galv.	4	M12x1.5agf

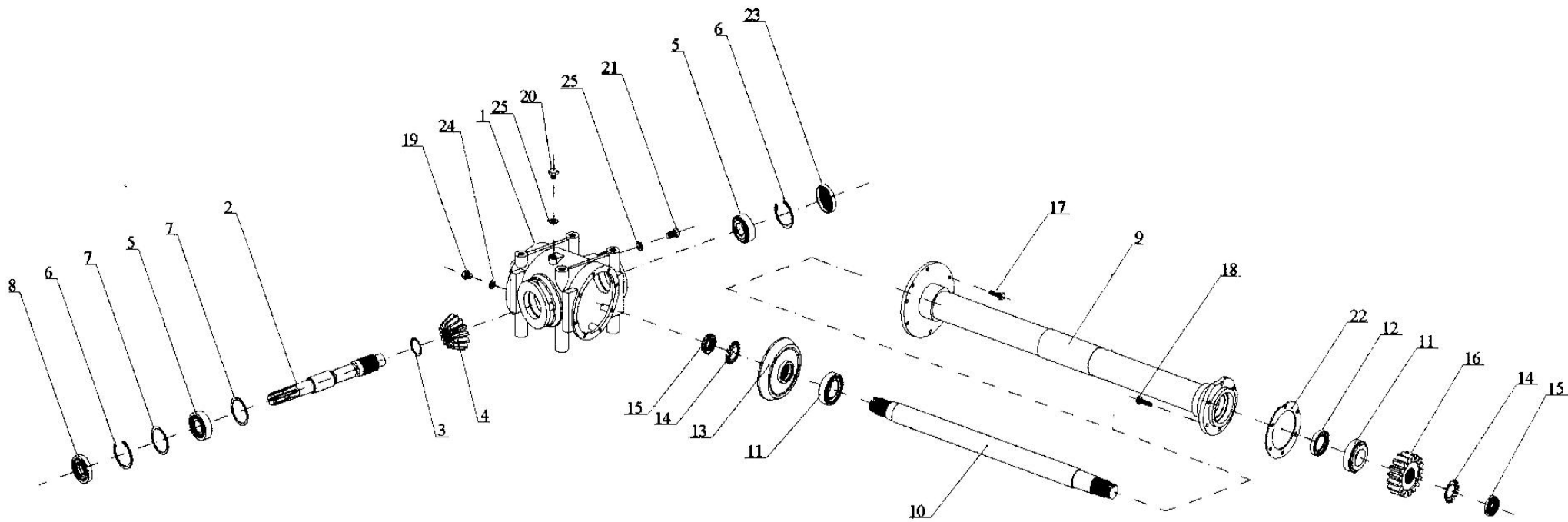
# 183-2 THREE POINT HITCH SYSTEM



## SR-2 THREE POINT HITCH SYSTEM

Pos.	Part code	Part name	Amount	NOTE
1	183-2-1	Three point hitch	1	
2	183-2-2	Hexagonal bolt,galv.	8	M12x1.5-30ag
3	183-2-3	Hexagonal security nut,galv.	8	M12x1.5agf
4	183-2-4	Bottom connection plate	2	
5	183-2-5	Bottom connection plate	2	
6	183-2-6	Hexagonal bolt,galv.	4	M14x2-70ag
7	183-2-7	Hexagonal security nut,galv.	4	M14x2agf
8	183-2-8	Bottom bolt,galv.	2	
9	183-2-9	Safety pin,galv.	2	FY 9.5-g

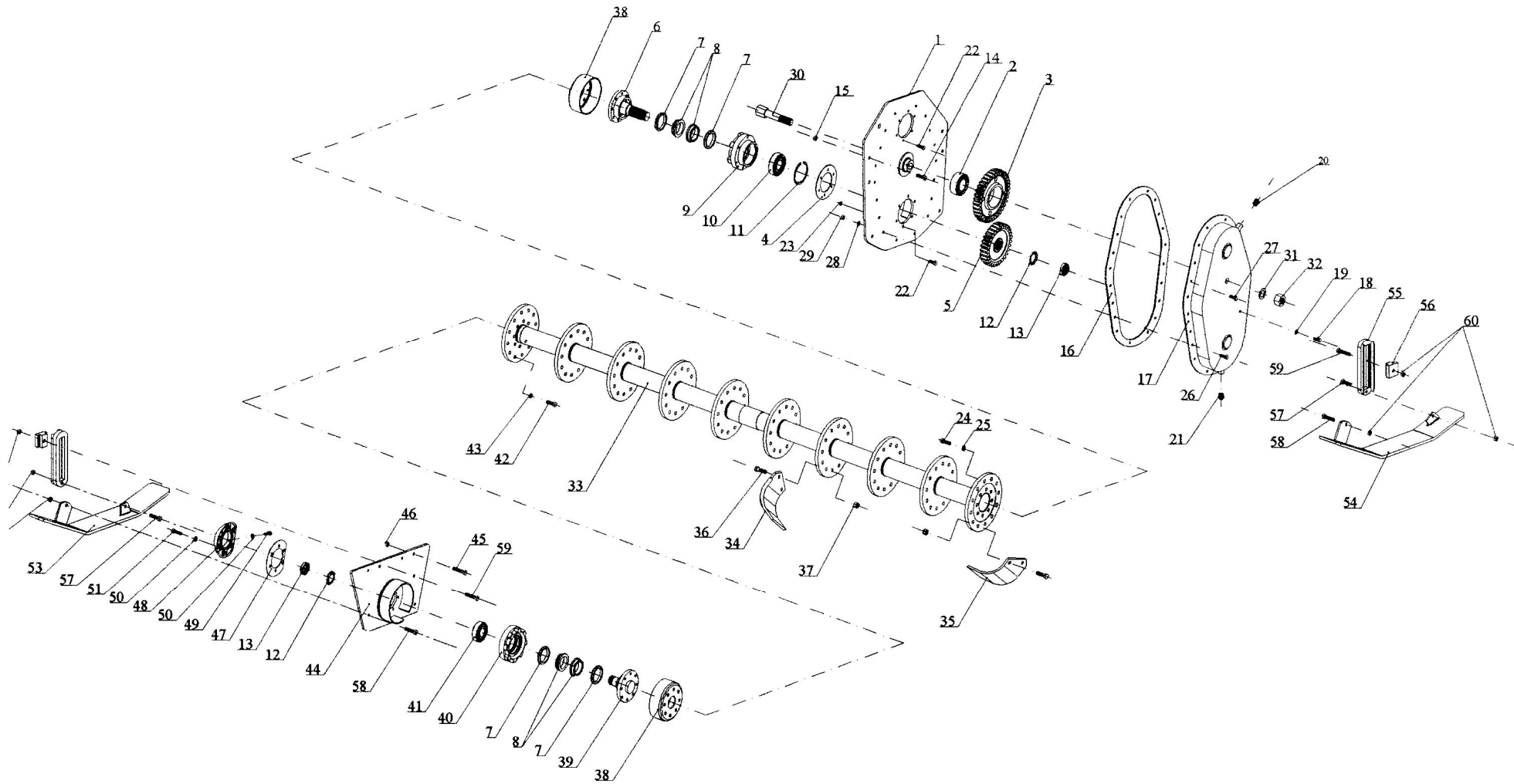
# 183-3 GEAR - BOX UNIT



## SR-3 GEAR BOX UNIT

Pos.	Part code	Part name	Quantity	NOTE
1	183-3-1	Gear Box	1	
2	183-3-2	Power take off shaft	1	
3	183-3-3	Elastic ring	1	DS_45
4	183-3-4	Gear	1	
5	183-3-5	30307 Bearing	2	R_30307
6	183-3-6	Elastic ring	2	IS_80
7	183-3-7	Shim	1	-
8	183-3-8	Seal	2	K_35x80x10
9	183-3-9-1	Gear-box pipe T-SR-185	1	
9	183-3-9-2	Gear-box pipe T-SR-210	1	
10	183-3-10-1	Spindle T-SR-185	1	
10	183-3-10-2	Spindle T-SR-210	1	
11	183-3-11	Bearing	2	R_30210
12	183-3-12	Seal	1	K_50x72x10
13	183-3-13	Bearing	1	
14	183-3-14	Protection plate	2	As_40
15	183-3-15	Splitted nut	2	
16	183-3-16	Upper gear	1	
17	183-3-17	Hexagonal bolt,galv.	8	M10x1.5-30ag
18	183-3-18	Hexagonal bolt,galv.	6	M10x1.5-25ag
19	183-3-19	Hexagonal oil level bolt	1	M10x1.5-15
20	183-3-20	Oil filling plug	1	M16x2-20
21	183-3-21	Oil plug	1	M16x2-20
22	183-3-22	Small flange seal	1	
23	183-3-23	Seal	1	KK_35x80x13
24	183-3-24	Washer, copper	1	P_M10-b
25	183-3-25	Washer, copper	1	P_M16-b
26	183-3-26	Silicon	20g	SI_20g

# 183-4 ROTARY CULTIVATOR UNIT





## SR-4 ROTARY CULTIVATOR UNIT

Pos	Part code	Part Name	#	Note
1	183-4-1	Side lid	1	
2	183-4-2	Bearing	1	R 3211
3	183-4-3	Middle gear	1	
4	183-4-4	Seal of upper sleeve	2	
5	183-4-5	Bottom gear	1	
6	183-4-6	Long axle	1	
7	183-4-7	O-ring	4	OR 65x10
8	183-4-8	Steel ring	4	
9	183-4-9	Long sleeve	1	
10	183-4-10	Bearing	1	R 1309
11	183-4-11	Elastic ring	1	is 100
12	183-4-12	Protection plate	2	AS 40
13	183-4-13	Splitting nut	2	
14	183-4-14	Hexagonal bolt,galv	4	M12x1.5-35ag
15	183-4-15	Hexagonal security nut,galv.	4	M12x1.5agf
16	183-4-16	Seal for gear-box cover	1	
17	183-4-17	Gear-box cover	1	
18	183-4-18	Hexagonal oil level bold	1	M10x1.5-15ag
19	183-4-19	Washer	1	YR M10-g
20	183-4-20	Oil filling plug	1	KT R1/2"
21	183-4-21	Oil plug	1	KT R1/2"
22	183-4-22	Hexagonal bolt,galv	6	M10x1.5-25ag
23	183-4-23	Washer	6	YR M10.5-g
24	183-4-24	Hexagonal bolt,galv	8	M12x1.5-35ag
25	183-4-25	Washer	8	YR M12.5-g
26	183-4-26	Hexagonal bolt,galv	15	M10x1.5-25ag
27	183-4-27	Hexagonal bolt,galv	3	M10x1.5-15ag
28	183-4-28	Washer	15	YR M10-g
29	183-4-29	Hexagonal security nut,galv.	15	M10x1.5agf
30	183-4-30	Hexagonal bolt,galv	1	M24x3-100ag
31	183-4-31	Washer	1	R M24-g
32	183-4-32	Hexagonal security nut,galv.	1	M24x3agf

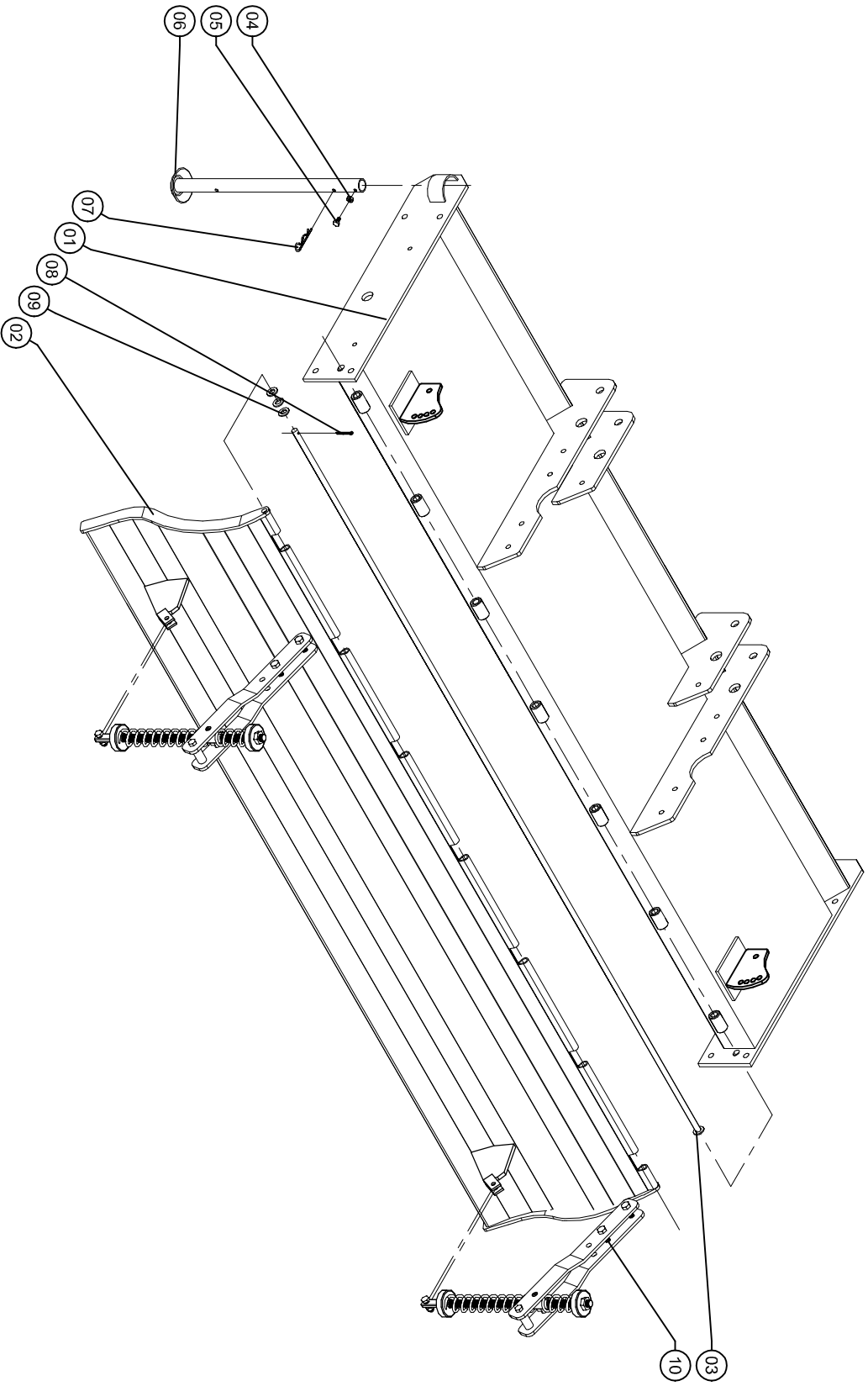
## SR-4 ROTARY CULTIVATOR UNIT

Pos	Part code	Part Name	#	NOTE
33	183-4-33	Roller T-SR-185	1	
33	183-4-33	Roller T-SR-210	1	
34	183-4-34-1	Knife (right)T-SR-185	21	
34	183-4-34-2	Knife (right)T-SR-210	24	
35	183-4-35-1	Knife (left) T-SR-185	21	
35	183-4-35-2	Knife (left) T-SR-210	24	
36	183-4-36-1	Hexagonal bolt,galv T-SR-185	84	M14x1.5-
36	183-4-36-2	Hexagonal bolt,galv T-SR-210	96	M14x1.5-
37	183-4-37-1	Hexagonal security nut,galv.T-SR-185	84	M14x1.5agf
37	183-4-37-2	Hexagonal security nut,galv.T-SR-210	96	M14x1.5agf
38	183-4-38	Plate	2	
39	183-4-39	Short axle	1	
40	183-4-40	Short sleeve	1	
41	183-4-41	Bearing	1	R 6308
42	183-4-42	Hexagonal bolt,galv	8	M12x1.5-
43	183-4-43	Washer	8	YR M12-g
44	183-4-44	Roller connection plate	1	
45	183-4-45	Hexagonal bolt,galv	4	M12x1.5-
46	183-4-46	Hexagonal security nut,galv.	4	M12x1.5agf
47	183-4-47	Seal for costing protection cover	1	
48	183-4-48	Protection lid	1	
49	183-4-49	Hexagonal oil control bolt	1	M10x1.5-
50	183-4-50	Copper,washer	2	Pul M10
51	183-4-51	Hexagonal bolt,galv	6	M10x1.5-
53	183-4-53	Skid(right)	1	
54	183-4-54	Skid(left)	1	
55	183-4-55	Big Perforation	2	
56	183-4-56	Small Perforation	2	
57	183-4-57	Hexagonal bolt,galv	2	M12x1.5-
58	183-4-58	Hexagonal bolt,galv	2	M12x1.5-
59	183-4-59	Hexagonal bolt,galv	2	M12x1.5-
60	183-4-60	Hexagonal security nut,galv.	6	M12x1.5agf

**SR TILLERS**

**240**

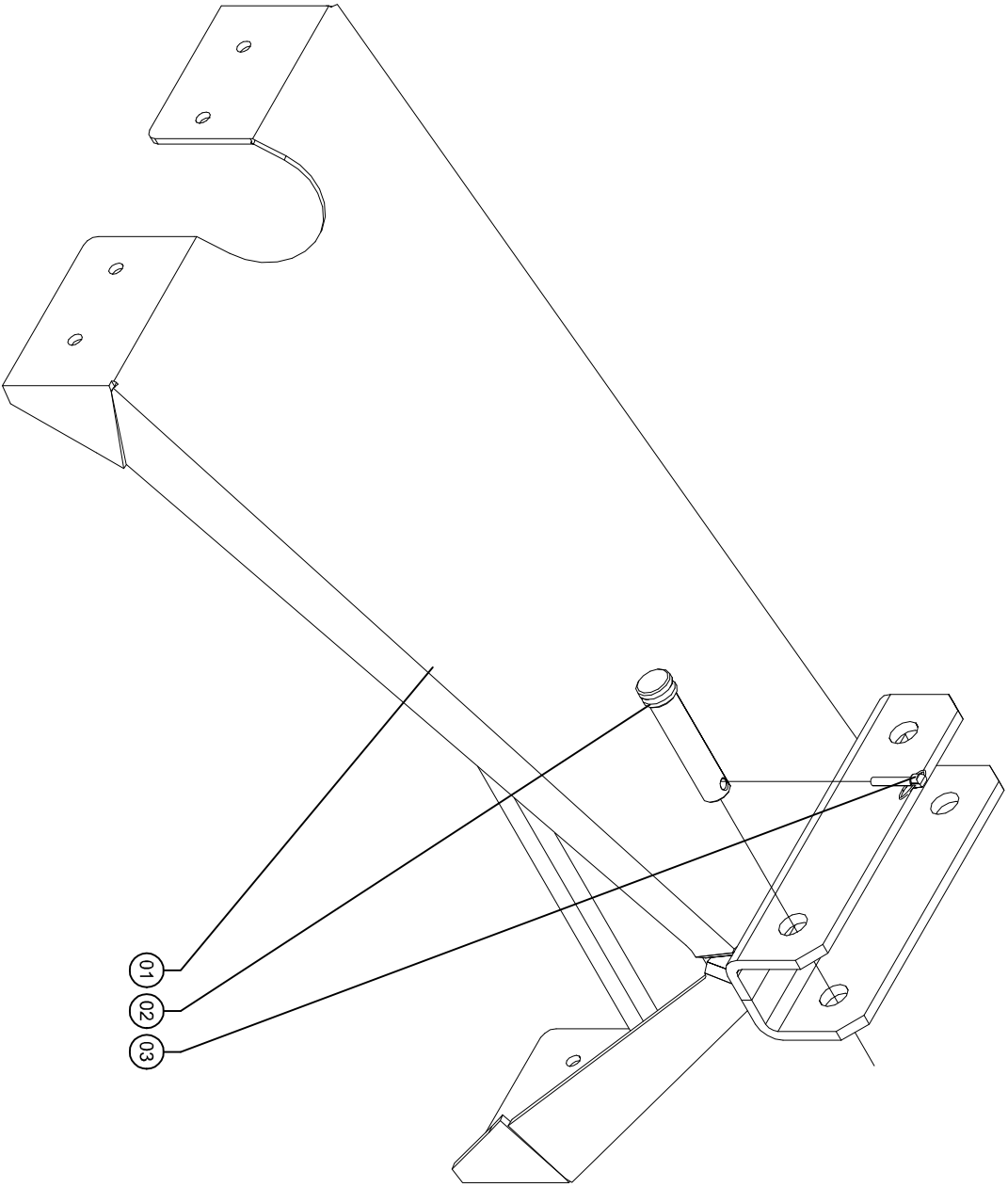
**PARTS**



ITEM	GROUP NAME	
TDDSR24001-1.2	MAIN FRAME	

	<b>SR-240</b>		<b>ITEM</b>
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TDDSR24001-1.2</b>
	<b>GROUP</b>		
	<b>MAIN FRAME</b>		

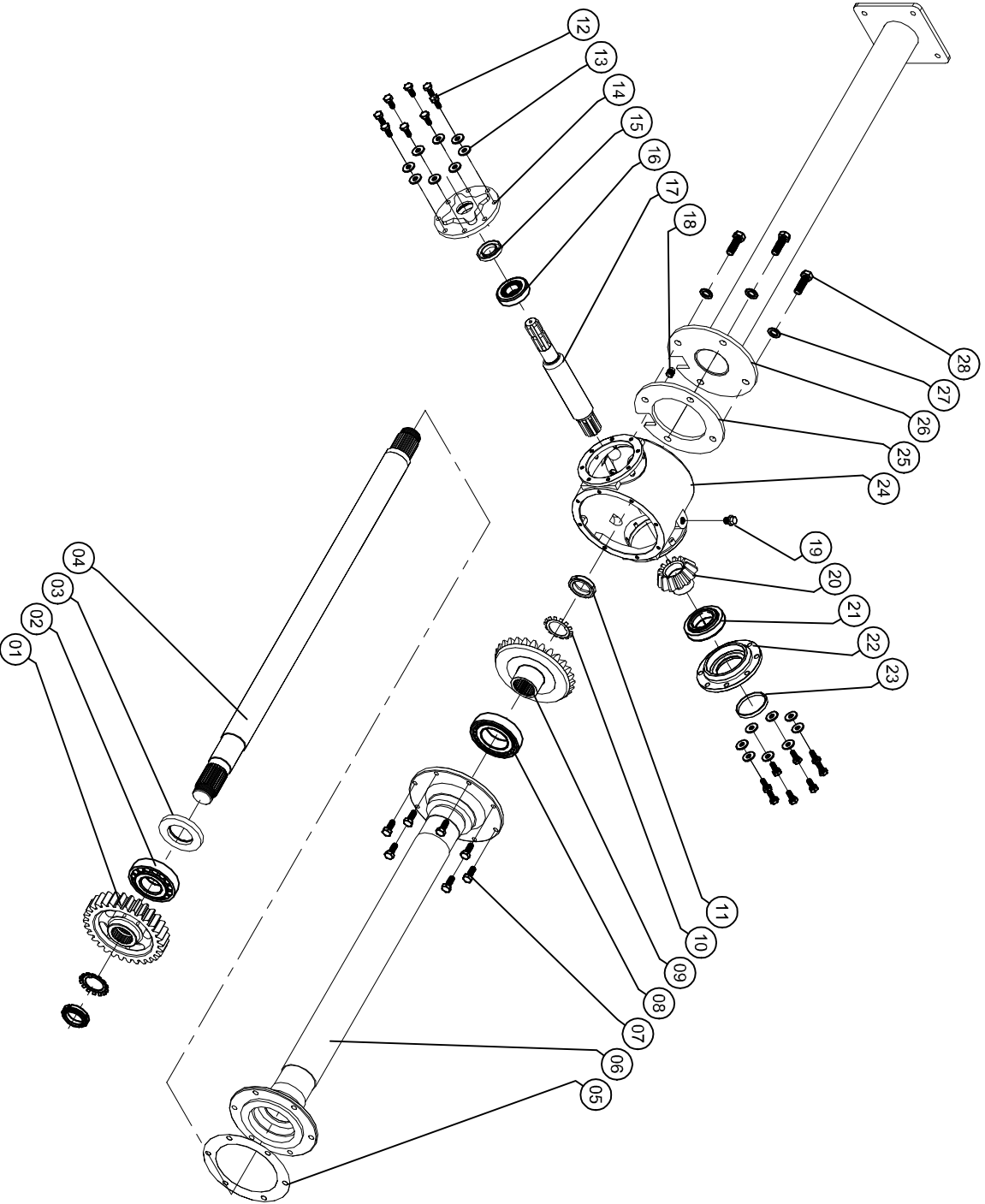
NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
01	1	Frame	TDDSR24001-1.2.1		
02	1	Rear Lid	TDDSR24001-1.2.2		
03	1	Lid Pin	TDDSR24001-1.2.3		
04	1	Nut	SOM-AKS-M8x1,25-8,8		M8x1,25-8,8
05	1	Bolt	CIV-M8x1,25x20-8.8		M8x1,25x20-8.8
06	1	Support Leg	T-CDSR-210-YH9DOZA- 1.2.3		
07	1	Hair Pin	FIRKETE-MAS-Ø6		Ø6
08	1	Split Pin	GUP-5x40 DIN 94		5x40 DIN 94
09	3	Washer	RON-DUZ-M14		
10	2	Tension Mechanism Assembly	TRT210D8SA-1.2.13		



ITEM	GROUP NAME	
TSR2400100-1.1	TREE POINT HITCH	

	<b>T-SR-240</b>		ITEM
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TSR2400100-1.1</b>
	GROUP		

NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
01	1	Three Point Hitch	TSR2400100-1.1.1		
02	1	Top Link Pin	TSR2400100-1.1.2		
03	1	Safety Pin	PIM-MAS-ARM Ø8		PIM-MAŞ-ARM Ø8

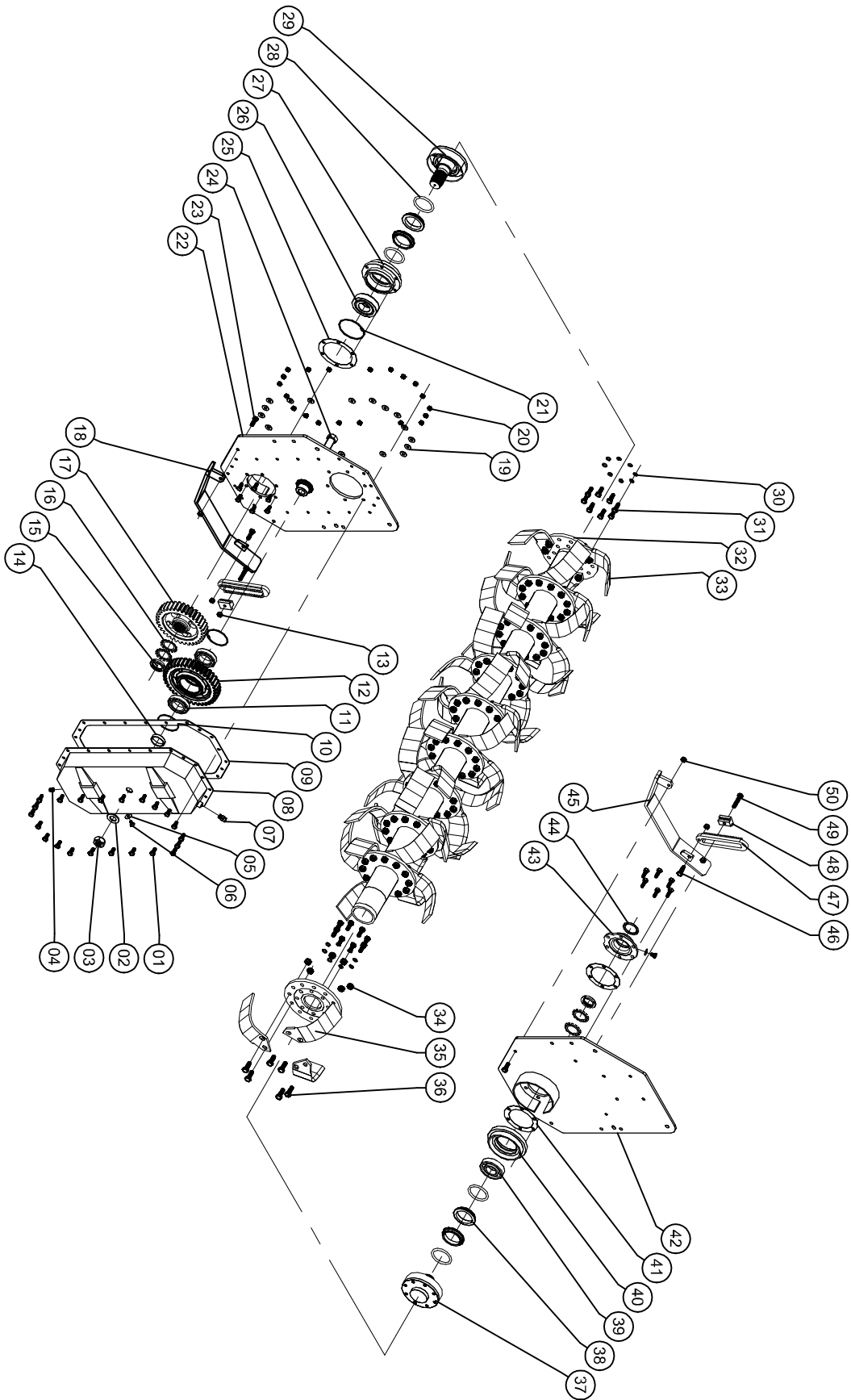


ITEM	GROUP NAME
TSR2400100-1.3	GEAR BOX

	<b>T-SR-240</b>		ITEM
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TSR2400100-1.3</b>
	GROUP		
	<b>GEAR BOX</b>		

NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
01	1	Gear Z:30	TDDSR21001-1.3.27		
02	1	Bearing	RUL-30311 URB		RUL-30311 URB
03	1	Oil Seal	KEÇE-YAG-60x110x13 AS		60x110x13 AS
04	1	Spindle	TSR2400100-1.3.04		
05	1	Seal	TDDSR24001-1.3.43		
06	1	Pipe	TSR2400100-1.3.6		
07	8	Bolt	CIV-M12x1,5x30-8.8		M12x1.5x30
08	1	Bearing	RUL-32214 URB		RUL-32214 URB
09	1	Gear Z:28	TDDSR21001-1.3.31		
10	2	Washer	RON-KUL-M50x1,5		M50x1,5
11	2	Splitted Nut	SOM-YAR-M50x1,5-8,8		M50x1,5-8,8
12	16	Bolt	CIV-M10x1,5x25-8.8		M10x1,5x25-8.8
13	16	Washer	RON-DUZ-M10		RON-DUZ-M10
14	1	Cover	TSR2400100-1.3.14		
15	1	Oil Seal	KEÇE-YAG-35x62x10 AS		YAG-35x62x10 AS
16	1	Bearing	RUL-30307 ZWZ		RUL-30307 ZWZ
17	1	Shaft	TSR2400100-1.3.17		
18	1	Oil Level Plug	TUSP250A-1.3.13		3/8"
19	1	Oil Filling Plug	TCSP150A-1.3.4		M20x1.5
20	1	Gear	TDDSR21001-1.3.4		
21	1	Gear	RUL-30211 URB		RUL-30211 URB
22	1	Cover	TSR2400100-1.3.22		
23	1	Plug	TAPA-80x10		TAPA-80x10
24	1	Gear Box	TSR2400100-1.3.24		
25	1	Support Sheet	TSR2400100-1.3.25		
26	1	Support Sheet	TSR2400100-1.3.26		
27	4	Washer	RON-DUZ-M16		RON-DUZ-M16
28	4	Bolt	CIV-M16x2x50-8.8		M16x2x50-8.8





ITEM	GROUP NAME	
TDDSR24001-1.4	ROTARY CULTIVATOR	

	<b>T-SR-240</b>		ITEM
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TDDSR24001-1.4</b>
	GROUP		
	<b>ROTARY CULTIVATOR</b>		

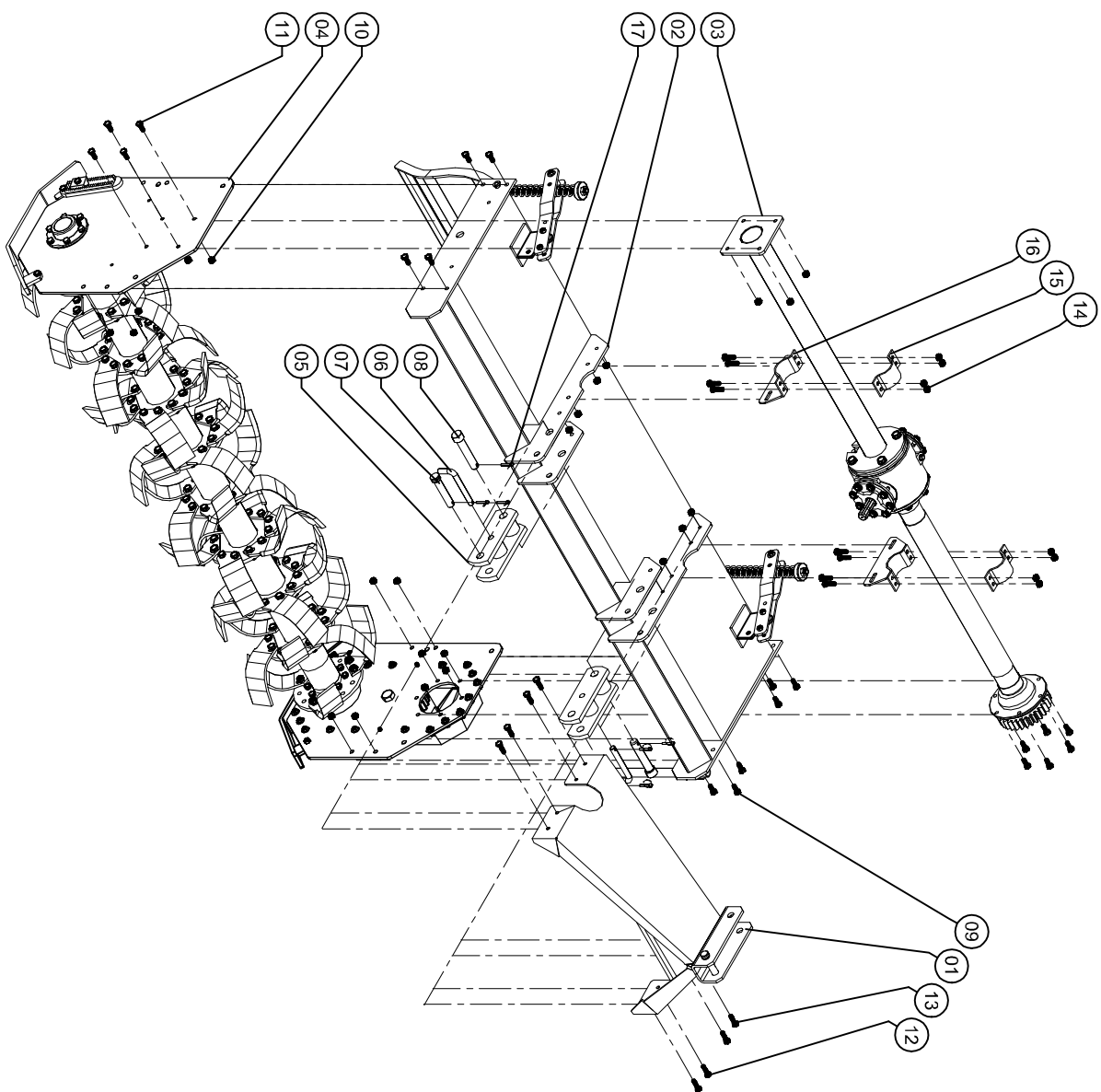
NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
01	22	Bolt	CIV-M10x1,5x25-8.8		M10x1,5x25-8.8
02	1	Washer	RON-DUZ-M30		M30
03	1	Nut	SOM-AKS-M30x3,5 8,8		M30x3,5 8,8
04	1	Oil Level Plug	T-USP-250-0-1.3.13		G 3/8"
05	2	Washer	RON-BAK-M10		M10
06	2	Bolt	CIV-M10x1,5x16-8.8		M10x1,5x16-8.8
07	1	Oil Filling Plug	T-USP-250-0-1.3.14		G 3/8"
08	1	Gear Box Cover	TDDSR21004-1.4.26		
09	1	Seal	TDDSR21004-1.4.25		
10	2	Snap Ring	SEG-DIN472Ø100x3-CK75		DIN472Ø100x3-CK75
11	2	Bearing	RUL-6211 ORS		6211 ORS
12	1	Gear Z: 38	TDDSR21004-1.4.3		
13	2	Nut	SOMFIB-AKS-M12x1,5		M12x1.5
14	1	Shim	TDDSR21004-1.4.18		
15	2	Nut	SOM-YAR-M50x1,5-8,8		M50x1,5-8,8
16	4	Aspelya	RON-KUL-M50x1,5		M50x1,5
17	1	Gear Z:34	TDDSR24001-1.4.17		
18	1	Skid Left	TDDSR24001-1.4.18		
19	22	Spring Washer	RON-YAY-M10		M10
20	22	Nut	SOMFIB-AKS-M10x1,5		M10x1.5
21	1	Snap Ring	SEG-DIN472Ø120x4-CK75		DIN472Ø120x4-CK75
22	1	Left Side Pannel	TDDSR24001-1.4.22		
23	2	Bolt	CIV-M12x1,75x35-8.8		M12x1,75x35-8.8
24	1	Bolt	SAP-M30x3.5x140x50-8.8		M30x3.5x140x50-8.8
25	1	Shim	TDDSR24001-1.4.25		
26	1	Bearing	RUL-1311 ZWZ		1311 ZWZ
27	1	Housing	TDDSR24001-1.4.27		
28	4	O-Ring	O-RING80x10 NBR		80x10
29	1	Hub	TDDSR24001-1.4.29		
30	16	Spring Washer	RON-YAY-M12		M12
31	22	Bolt	CIV-M12x1,5x35-8.8		M12x1,5x35-8.8
32	1	Rotor	TDDSR24001-1.4.32		

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	<b>T-SR-240</b>		ITEM
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TDDSR24001-1.4</b>
	GROUP		
	<b>ROTARY CULTIVATOR</b>		

NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
33	24	Blade Left	TDDSR24001-1.4.33		
34	108	Nut	SOMFIB-AKS-M14x1,5		M14x1.5
35	24	Blade Right	TDDSR24001-1.4.35		
36	108	Bolt	CIV-M14x1,5x40-8.8		M14x1,5x40-8.8
37	1	Stub Axle	TDDSR24001-1.4.37		
38	4	Shim	TDDSR24001-1.4.38		
39	1	Bearing	RUL-6310 C3 ORS		6310 C3 ORS
40	1	Housing	TDDSR24001-1.4.40		
41	1	Housing Seal	TDDSR24001-1.4.41		
42	1	Right Side Pannel	TDDSR24001-1.4.42		
43	1	Cover	TDDSR24001-1.4.43		
44	1	Plug	TAPA-72x7x1		72x7x1
45	1	Skid Right	TDDSR24001-1.4.45		
46	2	Bolt	CIV-M12x1,75x40-8.8		M12x1,75x40-8.8
47	2	Big Perforation	TSR14005O-1.4.11		
48	2	Small Perforation	TSR14005O-1.4.9		
49	2	Bolt	CIV-M12x1,5x50-8.8		M12x1,5x50-8.8
50	4	Nut	SOMFIB-AKS-M12x1,75		M12x1.75

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TSR2400100

COMPLETE MACHINE

	<b>T-SR-240</b>		ITEM
	<b>ROTARY TILLERS FIXED POSITION-240 CM</b>		<b>TSR2400100</b>
	GROUP		
	<b>COMPLETE MACHINE</b>		

NO	QTY	DESCRIPTION	TECH.DRW.NUMBER	DETAILS	
01	1	Three Point Hitch Group	TSR2400100-1.1		
02	1	Main Holder Group	TDDSR24001-1.2		
03	1	Gear Box Group	TSR2400100-1.3		
04	1	Rotary Cultivator Group	TDDSR24001-1.4		
05	2	Pin	TSR2400100-1.5		
06	2	Pin Middle	TSR2400100-1.6		
07	2	Pin Front	TSR2400100-1.7		
08	2	Pin	TDDSR24001-1.1.6		
09	8	Civata	CIV-M14x1,5x40-8.8		M14x1,5x40-8.8
10	8	Nut	SOMFIB-AKS-M14x1,5		M14x1.5
11	6	Bolt	CIV-M12x1,5x30-8.8		M12x1,5x30-8.8
12	12	Bolt	CIV-M12x1,5x40-8.8		M12x1,5x40-8.8
13	10	Bolt	CIV-M12x1,5x35-8.8		M12x1,5x35-8.8
14	26	Nut	SOMFIB-AKS-M12x1,5		M12x1.5
15	2	Pipe Sheet	TDDSR21001-1.16.02		
16	2	Support	TDDSR21001- 1.16		
17	6	Safety Pin	PIM-MAS-ARM Ø8		PIM-MAS-ARM Ø8

## LIMITED WARRANTY

Tillerm maxx/Minos provides a limited warranty on this tiller against material defects in the parts and workmanship for the period of one year from the date of purchase by the original purchaser.

This limited warranty is only extended to the original purchaser and is non-transferable.

The warranty is restricted to 90 days for commercial applications, golf courses, and municipalities and for rental purposes.

This limited warranty covers all material of the tiller, with the exception of the normal wear items, including but not restricted to, blades. This warranty does not cover any cleaning, repair labor or transportation to and from the dealer and or transportation cost of the repair parts.

The Tillerm maxx/Minos will provide at no charge a replacement part for any item it deems defective. The Tillerm maxx/Minos has the right to inspect the part before committing to replace it.

This warranty is voided in the event the tiller has been used in applications not recommended, accidental damage, and improper operation, incorrect or lack of maintenance and/or for a machine that has been modified by sources not authorized by Tillerm maxx/Minos.

A claim needs to be addressed to the dealer, who will contact and place the warranty claim with Tillerm maxx/Minos.

This warranty shall not be interpreted to render Tillerm maxx/Minos liable for damages of any kind, direct, consequential, or contingent to property. Tillerm maxx/Minos is neither liable for any damage beyond its control. This warranty does not cover loss of income, rental, penalties, legal action, and labor for any reason.

No other warranty of any kind whatsoever, express or implied, is made with retrospect to this sale. All implied warranties of merchantability and fitness for a particular purpose, which exceed the obligations set forth in this warranty, are disclaimed and excluded.

Tillerm maxx/Minos reserves the right to change designs and drawings without notice.