



LandMax

Suppliers Of Quality Agricultural Machinery

21 Plummers Point Road, Tauranga



Verge Mower

AGL Series

Operator's Manual

FOREWORD

The purpose of this manual is to assist you in operating and maintaining your Flail mower. Read it carefully before operating and maintaining the Flail mower, it furnishes the specifications, construction, instructions and also the maintenance. Some information may be general in nature due to unknown and varying conditions. However, through experience and these instructions, you should be able to develop operating procedures suitable to your particular situation.

“Right” and “left” as used throughout this manual are determined by facing the direction the machine will travel when in use.

Please kindly note that the contents of this operations manual may be a little bit different from the mower that you actually purchase. This is due to the continuous improvement and development of the verge mower. The specifications and structure shall be subject to change without notice.

We aim to make this operations manual as correct as possible. However, we do not guarantee the accuracy or recentness of the information herein. We assume no liability for errors or omission.

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CHAPTER I SAFETY INFORMATION

PLEASE NOTE

Make sure all potential operators of this equipment review this manual and all safety messages contained within.

1.1 Safety First

Read this service manual before using the machine.



This safety alert symbol indicates important safety messages in this manual. When you see this symbol, carefully read this message that follows and be alert to the possibility of personal injury or death.

This machine is designed for cutting grass and bush, and shall be used in the indicated purpose. You take the responsibility if the machine is used in any other purposes.

For safety of personnel and good performance of the machine, you shall check the performance of the machine and the tractor before starting the machine.

All persons and animals shall keep away the machine when you start it.

The operator shall not put on loose clothes during operating the machine.

Do not touch the rotor when the machine rotates.

Keep away the machine when it moves.

When the tractor and the machine are moving on the road, always keep the machine off.

Before repairing the machine, stop all movable parts and the tractor, keep the key with yourself.

Always keep the machine in a good state, if necessary, repair or change the defective parts.

Don't use the machine to transport personnel.

Don't modify the machine.

Pay attention to the sharp and pointed parts during repairing the machine.

All protective parts shall be guaranteed to be in good state before starting the machine.

Don't leave the tractor when moving the machine; and always take away the key of the tractor with you.

The machine shall be operated in the recommended speed.

Don't stay between the tractor and the machine.

Don't start the machine in a closed place (due to the smoke from the tractor).

1.2 Safety Signs

1.2.1 Care of Safety Signs

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. If a component with a safety sign(s) affixed is replaced with a new part, make sure new safety sign(s) are attached in the same locations as the replaced components.
4. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

1.2.2 Safety Signs locations

The types of safety signs and locations on the equipment are shown in the illustrations that follow. Good safety requires that you familiarize yourself with the various safety signs, the type of warning and the area, or particular function related to that area, that requires your **SAFETY AWARENESS**.

CHAPTER II SPECIFICATIONS

2.1 Brief Introduction

This verge mower is designed for pulverizing grass and short bramble, and shall be used in the indicated purpose.

The mower consists of a rotating shaft with many blades attached to it. The blades cut the grass while traveling over the working area. Rotational power to the shaft is provided by the tractor PTO through the gearbox in the center of the machine.

The mower attaches to the 3 point hitch on the tractor.

2.2 Specifications and Parameters

MODEL	AGL-125	AGL-145	AGL-165
Structure Weight (kg)	250kg	280kg	315kg
Cutting width (cm)	120	140	160
Cutting height (mm)	0-50mm	0-50mm	0-50mm
Rotor diameter (mm)	108	108	108
Blade type & Number	Y & 40	Y & 48	Y & 56
Blade type & Number	Hammer & 20	Hammer & 24	Hammer & 28
Offset	Hydraulic Reach	Hydraulic Reach	Hydraulic Reach
Reach angle up	90 Degrees	90 Degrees	90 Degrees
Reach angle down	45 Degrees	45 Degrees	45 Degrees
PTO Turing speed(rpm)	540	540	540
PTO shaft size(mm)	T4-1400	T4-1400	T4-1400
Power Required (hp)	20 - 40	30 - 45	40 - 50
Packing Size (cm)	142×80×60	162×80×60	182×80×60



Hot forged hammer

CHAPTER III OPERATION



CAUTION: Be familiar with the machine before starting. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum field efficiency.

3.1 Checking Before Operating



ATTENTION: Only use universal joint conforming to CE standard and protect them properly.

Before operating the machine, the following areas should be checked off:

1. **Pay attention to the warning stickers on each greasing point. Before starting the machine, please make sure lubricate each grease point with grease or oil according to requirement on the warning stickers.**
2. Use only an agricultural tractor of horsepower within limits of the machine specified.
3. Check that the machine is properly attached to the tractor. Be sure retainers are used on the mounting pins.
4. Be sure extra weights are mounted on the front of the tractor.
5. Check the oil level in the gearbox. Add as required.
6. Check that the tractor PTO shaft turns freely and that the machine driving shaft can telescope easily.
7. Check the blades. Be sure they are not damaged or broken and swing freely in their mount. Repair or replace as required.
8. Check and tighten the blade bolts.
9. Check for entangled material in all rotating parts. Remove this material.
10. Install and secure all guards, doors and covers before starting.
11. Before installing the universal joint, the tractor and the machine motor shall be stopped and the key be taken away. The universal joints shall be installed in good state, with proper protective parts.
12. The chain on the protective parts of the universal joint shall be guaranteed in good condition, in case, automatic rotation occurs.
13. All other persons shall leave the ground before connecting the driving power from the tractor. Keep the output of the tractor at 540 RPM.
14. Before cleaning, repairing and lubricating the machine, stop the motor and take away the key with you.
15. When the universal joint is not connected with the tractor, they must be connected again through the frame to protect the joint from damaging.
16. Don't approach the machine when the machine runs.

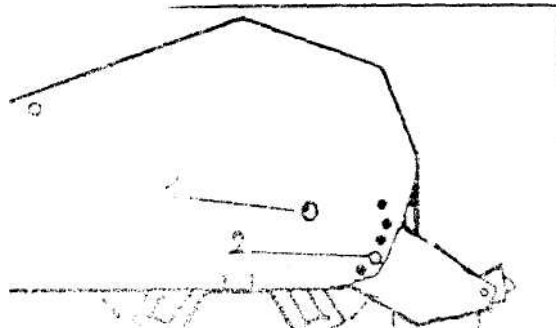
3.2 Adjusting the Height

In order to conduct precise work, the machine shall be operated according to the recommended cutting height.

To save fuel and power, and reduce wear of the machine, the cutting height must

be regulated correctly.

When regulating the working height, loosen the screw (1), remove the screws (2) on both sides; regulate the roller height (see following drawing); fix the parts on the set position. The lowest hole is the highest working height; put the screws (2) into the set hole; tighten screw (1) and screws (2).



3.3 Regulating the Tension of Driving Belt

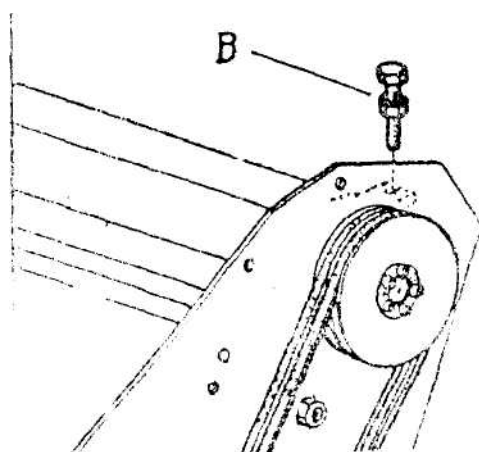


ATTENTION: The machine shall always stand still for regulating the tension.

Remove the driving belt cover, Loosen screws

Tighten the driving belt with screw, Tighten the screws

Put back the driving belt cover.



The recommended moving forward speed is 1.5 km/h, according to the grass height, thickness and working condition.

The driving belts are tightened by hand at the regulating point B up to the correct tension. Tighten all screws after regulating.

The driving belts shall be replaced when they are not in a good condition.

3.4 Starting up

Before starting the machine, control and adjust the following items:

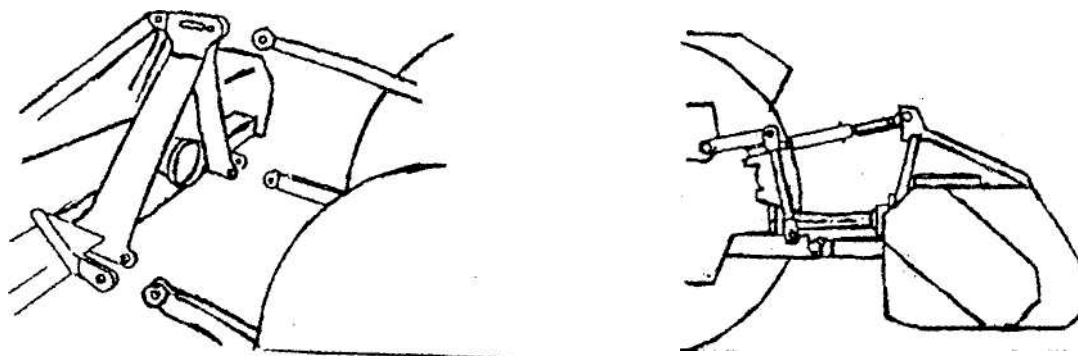
- Tension of trapezoidal driving belt.
- Oil level of gear.
- Point of lubrication
- All bolts, nuts and screws.

In order to keep the machine stable, install the supporting frame on the machine when the machine is stopped (see above drawing).



ATTENTION: When transferring the moving state of the machine to the working state, do not stand between the machine and the tractor.

The machine coupling is equipped with 3 pins so that the machine can be coupled with all tractors with universal coupling with 3 pins. Each telescopic pole on the machine can be adjusted properly according to the type of the tractor. Keep the Flail mower away the tractor with a certain distance. The universal joint shall be tense and the largest distance in the closed state shall be 5/10 cm.



Moving the lifting arm, and putting it between axes, insert the joint pins and fix them with pins. Fix the lifting arm with chain and tensioning device so as to prevent lateral movement of the machine. Connect the universal joint to the PTO shaft of the tractor on the side of the tractor. In any event, it cannot produce a collision in any position. While connecting 3 points, pay attention to that the PTO shaft of the tractor shall be parallel with the ground. It is very important to keep the machine driving axle and the PTO shaft of the tractor in parallel.

The machine shall be lifted from the ground before moving the machine.

CHAPTER IV SERVICE AND MAINTENANCE

4.1 Service

4.1.1 FLUIDS AND LUBRICANTS

1. Grease:

Use multi-purpose lithium based grease.

2. Gear Box Oil:

Use N46 drive & hydraulic dual-purpose oil or equivalent for all operating conditions.

Each Gearbox Capacity: 0.85 liter

3. Storing Lubricants:

Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.

4.1.2 GREASING

- Use a hand-held grease gun for all greasing.
- Wipe grease nipple with a clean cloth before greasing, to avoid injecting dirt and grit.
- Replace and repair broken nipple immediately.
- If nipples will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace nipple if necessary.

4.2 Maintenance



ATTENTION: All maintenance, repairing, cleaning and lubricating shall be conducted when the tractor and motor are stopped and the key is taken away.

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free operation.

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent maintenance.

4.2.1 8 HOURS OR DAILY MAINTENANCE

- Check and screw all nuts and bolts in connection parts.
- Check the blade and fixing parts every day and replace the damaged parts if they are found damaged. Don't install damaged, worn and unbalanced blade. New sleeve shall be used to replace the worn fixing parts on the blade.

NOTE:

The operator shall put on gloves and use suitable tools before changing blade.

- Check the oil in gearbox. Fill them up to line if it's necessary.
- Press butter in each oil nipple three to five times.
- Clean the implement; take away all grass and mud.



IMPORTANT: Check the oil level only when the unit is cold and the machine is on the level.

4.2.2 SEASON MAINTENANCE

- Check the machine as below beside the terms of daily maintenance.
- Check the oil in gearbox; replace it if it is bad.
- Check the bearings of blade spindles whether mud and water have been enter because oil seals are damaged, if it's so, disassemble and clean them and replace them if it is necessary. And then press butter into them.
- Check the distance between bearings and gears. Adjust them if it's necessary.

4.2.3 ANNUALLY MAINTENANCE

- Cleaning mud and grass on the machine thoroughly.
- Check all clearance between bearings and gears if you have replaced them. Please run it without load for 3-5 minutes.
- Check and clean blade axles. Replace oil seals and press butter into them.
- Check all blades, replace then if they are wear-out or damaged.
- Repair the side skirts; let them to original technical condition. Replace damaged or broken protective devices.
- Remove the driving shaft from the machine. Pull the machine driving shaft apart. Check and replace any components that are damaged or worn. Install the driveline on the machine. The machine driving shaft should telescope easily and the guard turn freely on the shaft
- Let the oil in gearbox drain out thoroughly. Check and clean it. Fill new gear oil up to the dedicated oil level.

The oil shall be drained off after 50 hours of using time. Then the oil shall be drained off every 250 hours. One time every year at least.

The draining procedure is as follows: remove the draining bolt under the gear box, so that the oil drains off. After the oil is drained off, put back the cover and fill the gear oil up to the dedicated oil level.



ATTENTION: Don't forget to disconnect the generator cable and batteries when welding on the machine, while the machine is coupled with the tractor.

4.3 Storage

The machine inside and outside shall be cleaned carefully so as to avoid corrosion.

Don't spray water on the rolling bearing if you clean the machine with high pressure sprayer.

Check and clean the universal joint, driving belt press roller, or replace them if they are not in good state.

Spread oil on all parts required.

Recoat the parts rubbed and damaged for anti corrosion.

Store the machine in a dry, level area. Support the frame with planks if require.

4.4 Operation After Storage

Before the machine is started up, check the following items regularly:

Check oil level and add it if not enough.

Check and tighten all screws and nuts;

Check the regulated state of the machine.

Check the blade state.

Check the air hole on the gearbox. If it is blocked, clean or open the hole with compressed air.

Don't spread oil or grease on the driving belts. If there is oil or grease on the belts, wipe the belts, in case belt sliding and wearing occur.



ATTENTION: Check the machine every 10 hours. Repair the damaged parts or replace the blade according to the manufacturer's recommendation, to keep the machine balancing.

Check all tightening parts and replace them if necessary.

Don't remove the protective parts on some points and protect the machine.



ATTENTION: In the case of vibration, stop the machine and check the blade. If the blade breaks or is damaged, replace it with same type of the blade. If the machine vibrates still, send the machine to the authorized repairer.

CHAPTER V ILLUSTRATED PARTS CATALOGUE

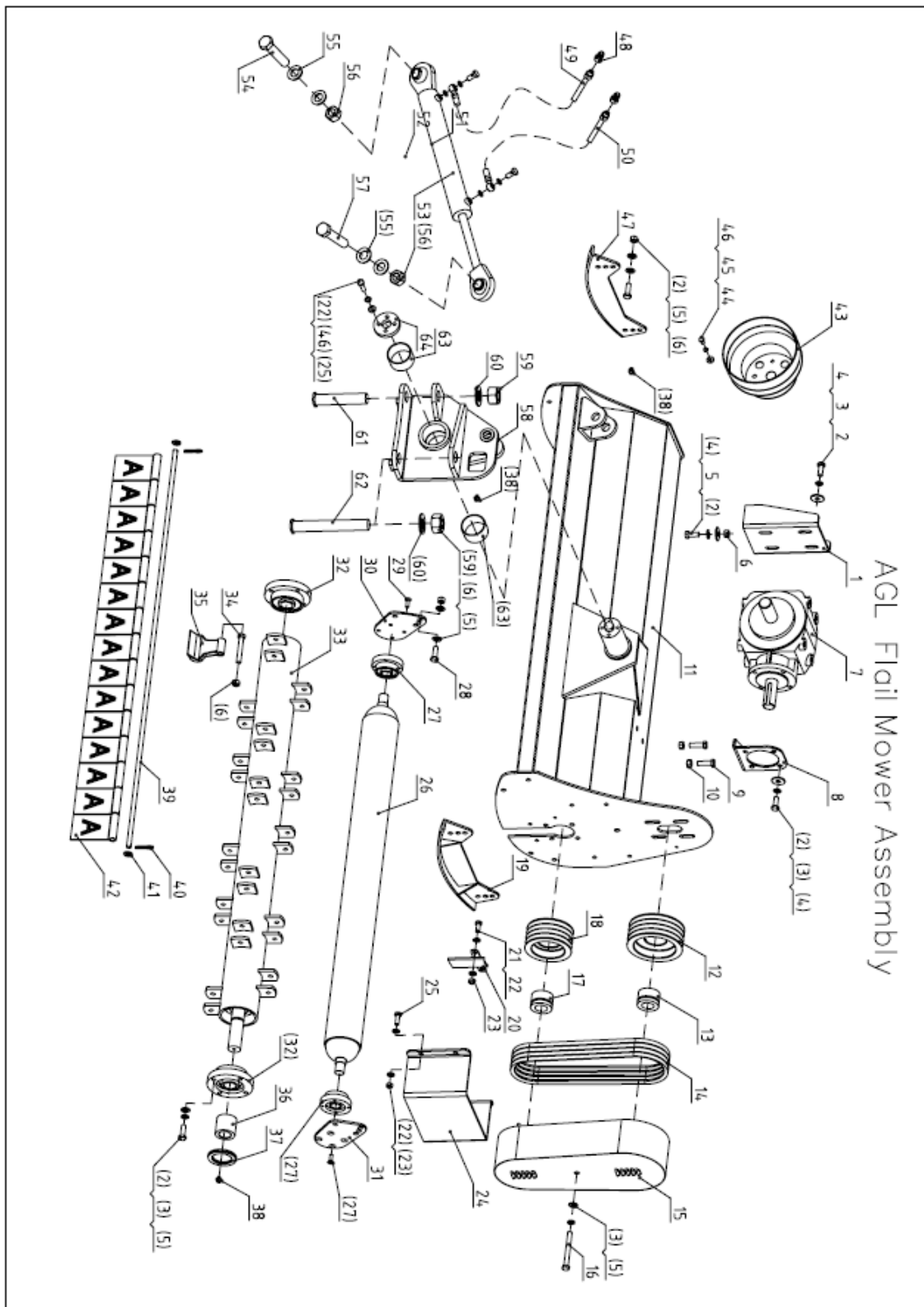
The manual contains a parts list for your machine. It is divided into major sections, which correspond to the groups shown in the Table of Contents and the accompanying illustration.

The first page of each major section lists the contents of that section, each of which consists of exploded views and related tabular listings.

When ordering parts

Always give your dealer the Model of your machine to assist him in ordering and obtaining the correct parts. Use the exploded view and tabular listing of the area of interest to exactly identify the required part.

5.1 Main Frame Parts



AGL Flail Mower Assembly

No.	Part NO.		Name&Specifications	Q' ty	Remark
1	AGL125.016	齿轮箱座焊合作件	Gear box seat	1	
2	GB5783-M12*30	螺栓 M12*30	Blot M12*30	8	
3	GB93-12	弹簧垫圈 12	Plain washer 12	17	
4	GB96.1-12	大垫圈 12	Big washer 12	10	
5	GB97.1-12	垫圈 12	Plain washer 12	27	
6	GB/T889.1-M12	锁紧螺母 M12	Locking nut 12	N	
7	XH50.300Z.02W	齿轮箱	Gear box	1	
8	AGL125.020	齿轮箱调节板焊合作件	Adjustment plate gear box	1	
9	GB5783-M12*40	螺栓 M12*40	Blot M12*40	2	
10	GB/T6170-M12	普通螺母 M12	Ordinary nut M12	N	
11	AGL125.019	机罩焊合作件	Deck weldment	1	AGL125
	AGL145.019	机罩焊合作件	Deck weldment	1	AGL145
	AGL165.019	机罩焊合作件	Deck weldment	1	AGL165
12	AGL125-114	大皮带轮	Big pulley	1	AGL145、AGL165
	EFG125.102	大皮带轮	Big pulley	1	AGL125
13	AGL125.150	胀套 33*60	Taper-lock 33*60	1	
14	GB/T1154-XPA13*1016	皮带 XPA 13*1016	belt XPA 13*1016	3	AGL125
	GB/T1154-XPA13*1016	皮带 XPA 13*1016	belt XPA 13*1016	4	AGL145、AGL165
15	EFGC175.014	皮带轮罩焊合作件	Pulley cover	1	
16	GB5782-M12*130	螺栓 M12*130 (半螺纹)	Blot M12*130	1	
17	EFGC175.131	胀套 35*60	Taper-lock 35*60	1	
18	AGL125-113	小皮带轮	Small pulley	1	AGL145、AGL165
	EFG125.103	小皮带轮	Small pulley	1	AGL125
19	AGL125-017	左调节板焊合作件	adjust plate welded parts (L)	1	
20	AGL125-023	侧挡板焊合作件	Side platens	1	
21	GB5783-M10*25	螺栓 M10*25	Blot M10*25	4	
22	GB97.1-10	垫圈 10	Plain washer 10	16	
23	GB/T889.1-M10	锁紧螺母 M10	Locking nut 10	N	
24	AGL125-115	皮带轮罩保护板	Belt guard protection board	1	
25	GB5783-M10*30	螺栓 M10*30	Blot M10*30	22	
26	EFGC125.012	滚筒焊合作件	Blade axle	1	AGL125
	EFGC145.012	滚筒焊合作件	Blade axle	1	AGL145
	EFGC165.012	滚筒焊合作件	Blade axle	1	AGL165
27	EFGC175.127	外球面球轴承90205 付座总成	UC205-Z bearing block with oilcup	2	
28	GB5783-M12*35	螺栓 M12*35	Blot M12*35	4	
29	GB/T70.3-M8*25	内六角沉头螺栓 M8*25	flush bolt M8*25	8	

AGL Flail Mower Assembly

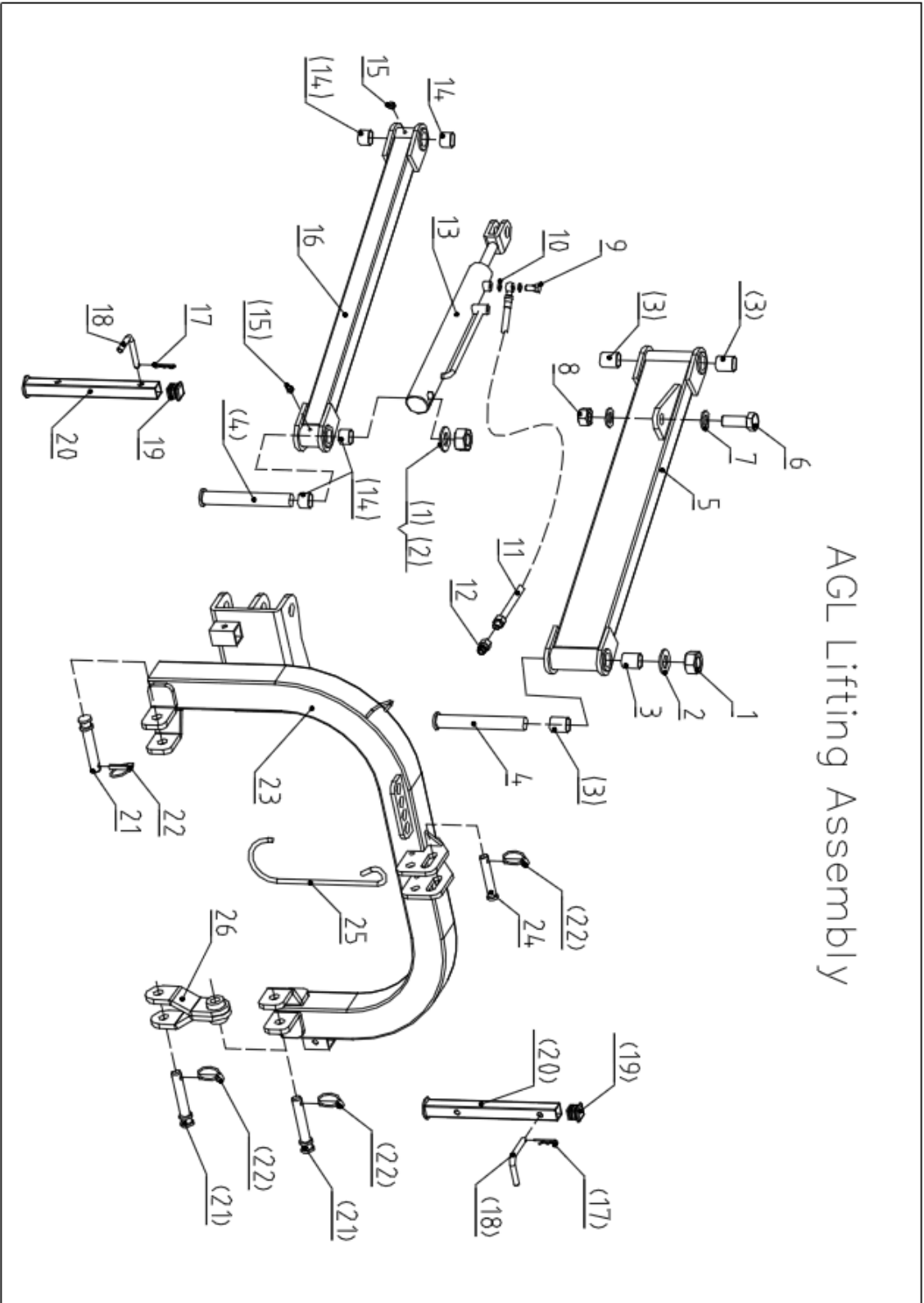
No.	Part NO.		Name&Specifications	Q' ty	Remark
30	AGL125-109	滚筒安装板(左)	Drum connection plate (left)	1	
31	AGL125-108	滚筒安装板(右)	Drum connection plate (Right)	1	
32	EFGC175.128	外球面球轴承90207 付座总成	UC207-Z bearing block with oilcup	2	
33	AGL125.026	刀轴焊合件	Knife shaft welded parts	1	AGL125
	AGL145.026	刀轴焊合件	Knife shaft welded parts	1	AGL145
	AGL165.026	刀轴焊合件	Knife shaft welded parts	1	AGL165
34	GB5783-M12*80	螺栓 M12*80 (12.9级)	Blot M10*80 (12.9 level)	N	
35	AGL125-112	锄头刀片	Hoe blade	N	
36	EFGC175.103	衬套	Bushing	1	
37	GB13871-94	油封 55*80*8	Oil seal 55*80*8	1	
38	JB/T7940.1-M8*1	油嘴 M8*1	Oil cup M8*1	3	
39	EFGC125.110	挡板轴	Damper shaft	1	AGL125
39	EFGC145.110	挡板轴	Damper shaft	1	AGL145
	EFGC165.110	挡板轴	Damper shaft	1	AGL165
40	GB/T 91	开口销	Cotter pin	2	
41	GB97.1-14	垫圈 14	Plain washer 14	2	
42	EFGC175.108/109	挡板	baffle	N	
43	EFGC175.123	PTO 保护罩	PTO shielding	1	
44	GB5783-M10*16	螺栓 M10*16	Blot M10*16	4	
45	GB93-10	弹簧垫圈 10	Plain washer 10	4	
46	GB96.1-10	大垫圈 10	Big washer 10	4	
47	AGL125-017	右调节板焊合件	Adjust plate welded parts (R)	1	
48	AGF140.146	快换接头R1/2"	Quick connector R1/2"	2	
49	AGF140.022	油管3700	Oil pipe 3700	1	
50	AGF140.023	油管3350	Oil pipe 3350	1	
51	EFGCH175.106	空心螺栓 M12*1.25	Hollow stay bolt M12*1.25	2	
52	JB 982-12	组合垫圈 12	Gasket 12	4	
53	AGL125.011	翻转油缸	Flip oil cylinder	1	
54	GB5783-M24*110	螺栓 M24*110	Blot M24*110	1	
55	GB97.1-24	垫圈 24	Plain washer 24	4	
56	GB/T889.1-M24	锁紧螺母 M24	Locking nut M24	2	
57	GB5783-M24*120	螺栓 M24*120	Blot M24*120	1	
58	AGL125.015	旋转架焊合件	Rotating frame	1	
59	GB/T 889.1-M30	锁紧螺母 M30	Locking nut M30	2	
60	GB97.1-30	垫圈 30	Plain washer 30	2	

AGL Flail Mower Assembly

No.	Part NO.		Name&Specifications	Q' ty	Remark
61	AGL125.103	摆臂销轴（短）	Swing arm pin (short)	1	
62	AGL125.105	摆臂销轴（长）	Swing arm pin (long)	1	
63	SF-2 6340	边界润滑轴承 63*68*40	Brone Bearing 63*68*40	2	
64	AGL125.104	限位板	limit board	1	
备注：以上螺栓如未备注，则均默认8.8级、镀锌（Note: the above bolt if not note, the default 8.8 magnitude, galvanized）					

5.1 Lifting Parts

AGL Lifting Assembly



AGL Lifting Assembly

No.	Part No.		Name & Specification	Q'ty	Remark
1	GB6184-M30	锁紧螺母 M30	Locking nut 30	2	
2	GB97.1-30	垫圈 30	Plain washer 30	2	
3	SF-2 3040	边界滚珠轴承 30*34*40	Brone Bearing 30*34*40	4	
4	AGL125.103	摇臂销轴(长)	Swing arm pin(long)	2	
5	AGL125.022	大旋转臂焊合件	Large rotating arm welded pieces	1	
6	GB5783-M24*70	螺栓 M24*70	Blot M24*70	1	
7	GB97.1-24	垫圈 24	Plain washer 24	2	
8	GB6184-M24	锁紧螺母 M24	Locking nut 24	1	
9	EFGCH175.106	空心螺栓 M12*1.25	Hollow stay bolt M12*1.5	2	
10	JB 982-12	组合垫圈 12	Gasket 12	4	
11	AGF140.032	油管 2000	Oil pipe 2000	2	
12	AGF140.146	快换接头 G1/2"	Quick connector G1/2"	2	
13	AGL125.012A	摆动油缸	Swinging cylinder	1	
14	SF-2 3025	边界滚珠轴承30*34*25	Brone Bearing 30*34*25	4	
15	JB/T7940.1-M8*1	油嘴 M8*1	Nozzle M8*1	4	
16	AGL125.013	小旋转臂焊合件	Small rotating arm welded pieces	1	
17	EFGC175.130	R销 3	R pin 3	2	
18	EFGC175.115	直角销	Right Angle pin	2	
19	EFGC175.122	方管塞	pipe plug	2	
20	AGL125.014	brace 焊合件	Brace welded parts	2	
21	LS-22T-107	下悬挂销	suspension pin	3	
22	EFGC175.129	锁销组合件 11	Locking pin assembly	4	
23	AGL125.021A	悬挂架焊合件	Suspension welded parts	1	
24	EFGC175.116	上悬挂销	Hanging on the pin	1	
25	AGL125.111	挂钩	hook	1	
26	AGL125.024	下悬挂限位焊合件	Suspension limit welding	1	
备注：以上螺栓如未备注，则均默认8.8级、镀锌 (Note: the above bolt if not note, the default 8.8 magnitude, galvanized)					

The information contained in this operations manual is a general introduction only. The information contained herein may be modified at any time, for any reason. Modification may affect the details or specifications of the product described in this manual. Therefore, users – dealers must include the manufacturing date and serial number when placing an order for spare parts and components. Thanks.