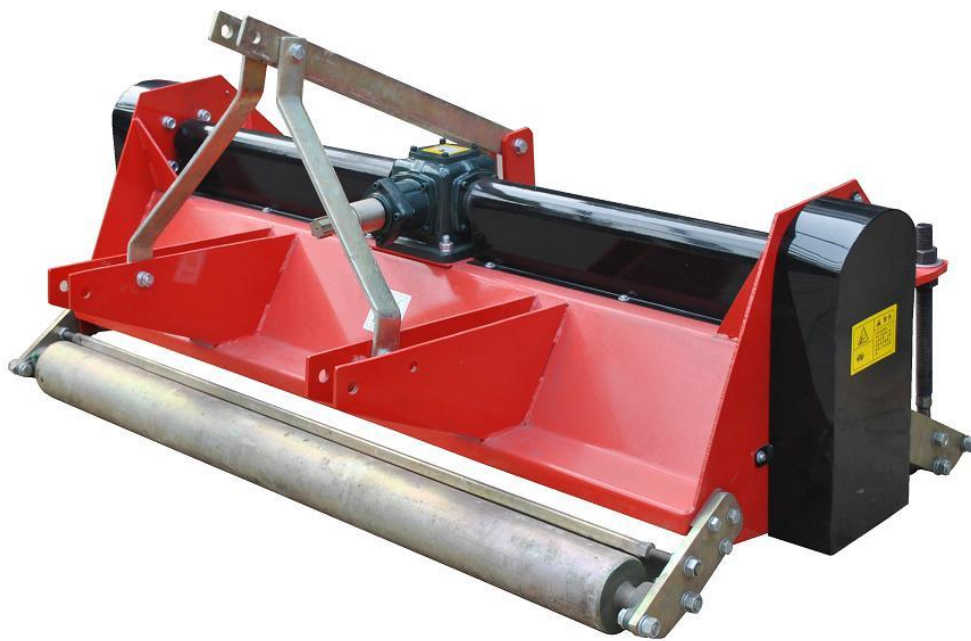


# Vertical lawn mower

## KFM160-A

### Operation Manual



**Shouguang Nake Garden Machinery Co., Ltd.**

Thank you very much for purchasing our products!

Please read this manual completely, otherwise you may be injured or damage the equipment. This manual should be kept permanently and sent to you as a user.

This manual uses the metric standard. The person sits on the main machine and faces the direction of the machine. The left and right of the person are the left and right of the machine. If you encounter a dotted arrow, it means that the parts are hidden inside.

The warranty provided by Naco Machinery to customers who operate and maintain according to the requirements of this manual is part of the entire support program.

The warranty of this product can be explained in the warranty certificate received from the dealer.

This operation manual covers the operation and maintenance of the KFM160-A lawn vertical mower

All contents in the manual are completed based on the latest information when the machine is shipped

In the future, the machine will not be notified separately

No part of this manual shall be copied without written consent

This manual is an integral part of the lawn vertical mower and should be handed over when repurchasing

Please pay special attention to the following warning words

If you do not follow the instructions. Will cause death or serious personal injury.

If you do not follow the instructions. May cause death or serious personal injury.

If you do not follow the instructions. May cause personal injury.

If you do not follow the instructions. The machine or other equipment may be damaged

Before operating the equipment, please read and understand this manual carefully, otherwise it may cause personal injury or equipment damage

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# 1. Safety is the top priority



## Things to ensure safe operation

Please read the instruction manual of this product carefully before use

Please operate the machine according to the instructions in this manual, so that it can operate as designed, safely and reliably. Before operating this equipment, please read and understand this manual carefully, otherwise it may cause personal injury or damage to the equipment.

1. Before using the equipment each time, please do an operation check to avoid personal injury or equipment damage
2. Children or pets must stay away from the operating area to avoid being injured by the running equipment
3. This equipment can only be used for vertical grass combing operations on the lawn, and cannot be used for other work to avoid personal injury or equipment damage.
4. Never allow untrained personnel to operate this equipment to avoid personal injury or damage to the equipment or the lawn.
5. Never allow untrained personnel, minors or people with physical disabilities to operate the power equipment that pulls this equipment to avoid personal injury or damage to the equipment or the lawn.
6. There must be no wire, metal objects or stones on the lawn used for combing grass, which can be combed to avoid personal injury or damage to the equipment or the lawn.
7. When the equipment is running, debugging and other work cannot be

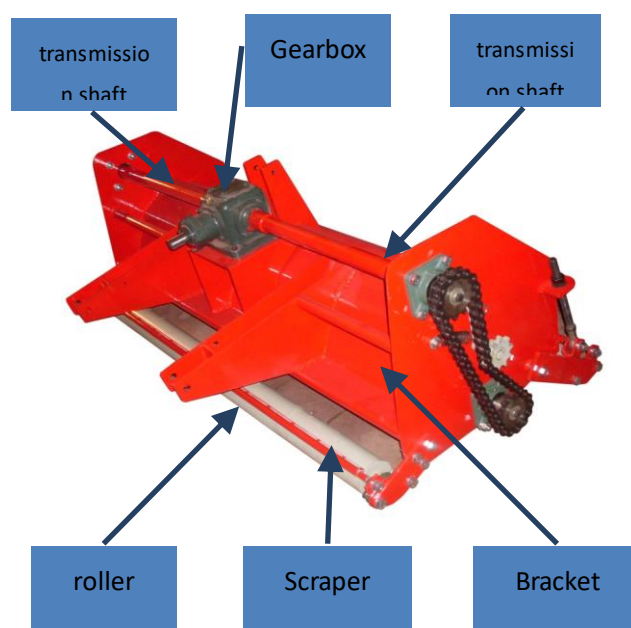
performed to avoid personal injury

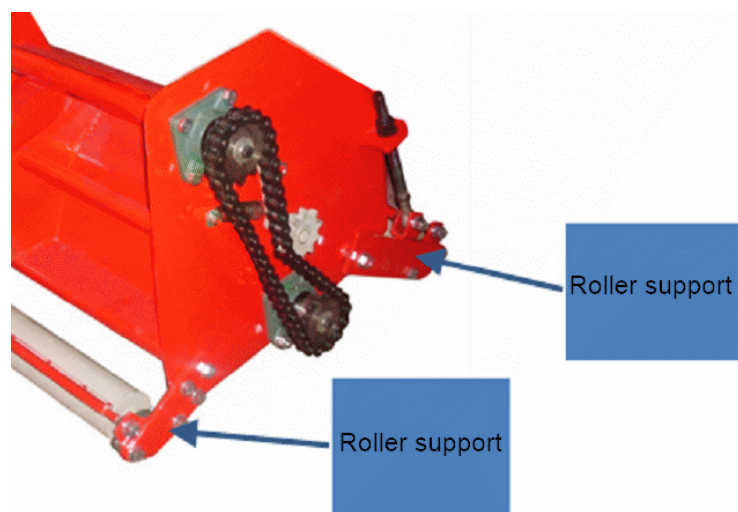
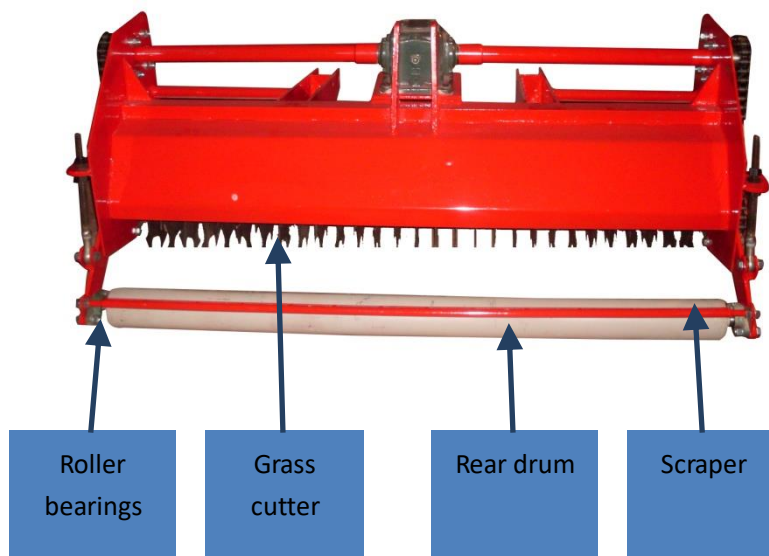


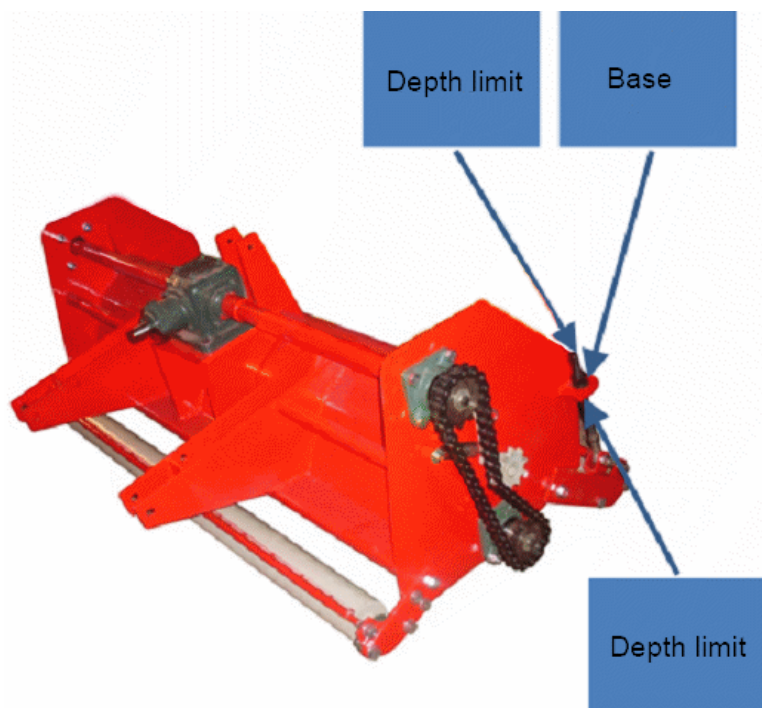
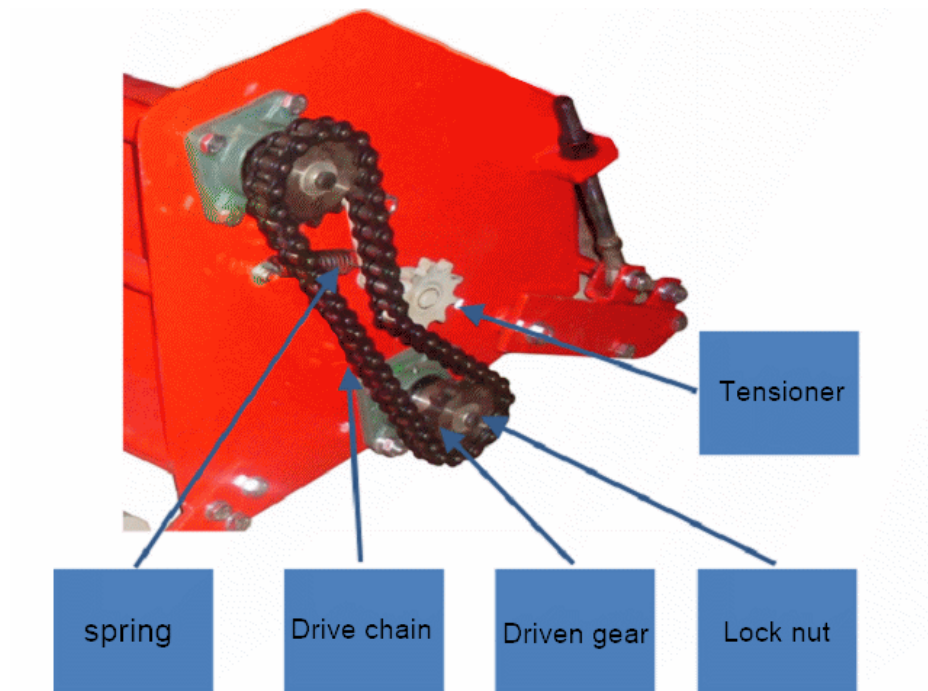
Things to ensure safe operation

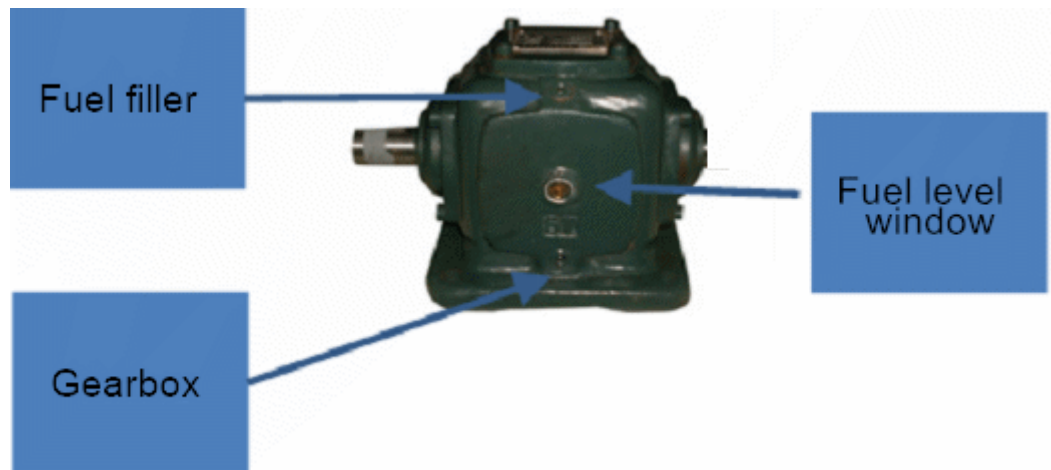
- When the equipment is combing, there should be no staff behind the equipment to avoid combing objects and flying objects, which may injure people
- When the equipment is running, heavy objects or people cannot be placed on the machine, etc., to avoid personal injury or damage to the equipment or the lawn.
- When the equipment is running, the grass combing blade or debris removal cannot be adjusted to avoid personal injury
- For unused lawns, the grass should be combed or roots cut at different depths to avoid damage to the lawn
- Before starting the power equipment, check whether the drive shaft is locked to avoid damage to the equipment or the lawn.

## 2. Component Identification









### 3. Pre-operation inspection

1. Check the gear oil level in the gearbox assembly. When the gear oil is lacking, it may cause gear knocking or gear wear, and the equipment damage caused by this is not covered by the warranty

2. Check whether the fixing screws are loose to avoid equipment damage

3. Check whether the grass combing blade is deformed or severely worn.

If this happens, please replace the grass combing blade to avoid equipment damage or damage to the lawn.

4. Check the drive shaft

a: Is it installed correctly? b: Is it locked? c: Is the drive shaft damaged?

d: Is there lubricating oil on the drive shaft?

If there are any problems, please eliminate the problems before operating the equipment to avoid equipment damage

5. Check whether the grass combing blade is adjusted to the required size.



## 4. Maintenance



### 1) Gearbox maintenance

#### A: Gear replacement schedule

First use: Please replace the gear after 20 hours of operation

**注**

Subsequent use: Please change the engine oil after 150 hours of operation. Do not add multiple mixed oils when updating the engine oil.

B: Check the gear oil regularly. Check the gear oil regularly to prevent oil shortage or lack of oil,

C: Check the gear oil seal regularly to prevent oil leakage,

D: Clean regularly. Clean the gear shaft regularly, and the oil seal gear housing is cleaned of dust and other debris.

#### 1) Maintenance of the transmission shaft

A: Dust removal and lubrication oil filling regularly, B: Check the transmission shaft for cracks regularly

When not in use for a long time, add lubricating oil and pack it in a dry and ventilated place to prevent corrosion or rust.

### 1) Equipment maintenance

A: Perform regular maintenance to check if there are loose screws, wear, rust, etc.

b: After each use of the machine, rinse the machine housing, inner housing, grass cutter, front and rear rollers with clean water to ensure there is no grass or dirt, then blow dry and park in a dry and ventilated place

c: Regularly lubricate the bearings

**注**

#### **maintenance**

When not in use for a long time, lubricant should be added to the places where lubricant is needed, and other places should be treated with three anti-corrosion treatments, and then packed and placed in a dry and ventilated place to prevent corrosion or rust.

#### Chain maintenance

A: Clean regularly and add lubricating oil regularly (do not add too much to prevent it from falling on the lawn after work to avoid damaging the lawn).

B: Check the chain regularly for deformation and loose buckles.

C: When replacing the chain, both chains must be replaced at the same time. Replacing one chain is not allowed.

**注** D: Lubricating oil needs to be replaced after 50 hours of work.

The lubricant replacement time can be changed appropriately in different working environments

## 5. Knife Adjustment Method

1. Adjustment steps
2. 1. The power three-point suspension equipment should be at a height that is convenient for the adjuster to observe the front and rear rollers. It should not be too high.
3. 2. Take the horizontal surface below the front and rear rollers and adjust the adjustment screw.
4. 3. Measure the distance from the horizontal surface below the rear roller to the tip of the combing blade. This distance is the combing depth.
5. 4. Fix the adjustment screw
6. 5. Check the equipment
7. 6. Adjustment is completed

8. Before adjusting the blade, the grass combing machine must be stopped and the power traction equipment must be stopped.

9. Another staff member must be on the side to observe and prevent emergencies, so as to avoid personal injury or equipment damage.

10. Never allow untrained personnel, minors or people with physical disabilities to operate and adjust the blade.

### Technical parameters

● Essential machinery for fairway lawn maintenance

● Tractor PTO directly provides power, with less loss

● Adjustable support roller

● Single-piece trapezoidal blade and diamond blade can be freely selected

Specifications	KFM160-A
Transmission mode	PTO
Machine weight	270kg
Blade speed	<1000r/min
Working width	160cm
Support method	Front and rear double rollers
Power Matching	25-50HP Tractor
Transmission mode	PTO



The tractor PTO speed must be at low speed (540 rpm)



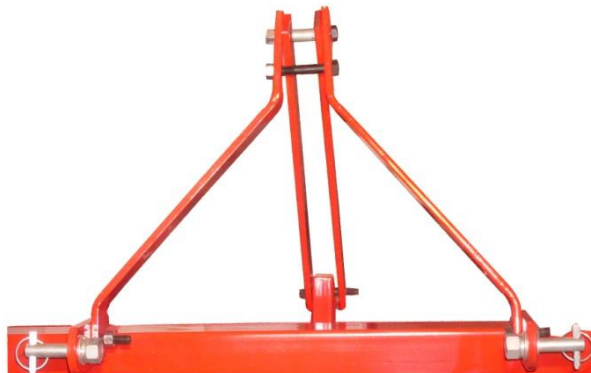
## ● 5. Precautions before use

Number of speed-adjustable grass cutters

- Please adjust the number of blades according to the actual required grass combing width to achieve the best grass combing effect.
- When the tractor is pulling the grass trimmer, please turn on the PTO first, make the grass trimmer in operation, and then slowly lower the grass trimmer to the lawn. It is not allowed to lower the grass trimmer before the PTO is turned on. It is also not allowed to raise and lower the grass trimmer suddenly, otherwise the equipment may be damaged.
- Please adjust the knife height before first use
- The tractor PTO output speed must be at a low speed (540 rpm), otherwise the equipment will be damaged.

## Installation Guide

Please refer to the following figure to install the three-point suspension device



## **Product Quality Limited Liability Warranty Terms**

1: The product is under warranty by the authorized dealer and the relevant engine manufacturer.

2: The insurance period is one year from the date when the authorized dealer issues the invoice to the user.

3: The products covered by this limited warranty specifically refer to those that have not been misused, abused, neglected, maintained, or have not been misused, neglected, maintained, or modified without authorization, and must be properly operated and properly maintained according to the accompanying instructions.

4: The manufacturing problem of the product refers to any product part or component defect caused by material defects and manufacturing process. The authorized dealer of Naco Machinery Company undertakes the obligation to repair or replace the defect and problem free of charge for the purchaser.

5: During the warranty period, the manufacturing quality problem of the product can only be handled as a warranty after being identified and certified by the authorized dealer's technicians. If the user has any objection to the identification result, he can apply for quality identification to the relevant national authoritative technical identification department.

6: There is no warranty for normal wear parts and components. The definition of normal wear parts or components includes batteries, belts, blades, tires, grass bags, seats, bearings, springs, etc.

7: The transportation costs of any part of the entire machine body that

needs warranty shall be borne by the user.

8. This clause does not cover the normal degradation or deterioration of the product appearance and damage caused by long-distance transportation.

9. The following faults are not covered by the warranty

1. Damage caused by improper use is not covered by the warranty. Please refer to the following maintenance knowledge for correct use

2. Damage caused by improper maintenance, such as premature wear or damage caused by not changing the gear oil for a long time, is not covered by the warranty

3. Damage caused by improper storage, such as man-made damage and rust or internal rust caused by long-term non-use, resulting in inability to use normally

4. No warranty card or warranty card is lost and there is no invoice proof

5. Normal wear and tear of the machine, consumable parts, etc.

6. Parts cannot be used due to disassembly or man-made damage by the user

7. Improper use of gear oil

10. The whole machine cannot be returned for repair without the prior written consent of the Naco Machinery Product After-Service Center.

## Equipment maintenance record

Maintenance items	Check the results		Maintenance status	Remark
	normal	Fault		

Shouguang Naco Garden Machinery Co., Ltd.

The pictures are for reference only. Please refer to the actual product. The contents and models published are subject to change without prior notice.



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