



Henan Master Machinery Co., Ltd

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# OPERATION MANUAL



## FVR850 Vibratory Road Roller

PERFORMANCE · EFFICIENT · RELIABLE



**Master** sincerely thanks you for selecting the Plate Compactor Machine. For your Safety and proper operation, before you start to operate or carry out any maintenance on this equipment, YOU MUST READ and STUDY this manual carefully. Be sure to always keep it ready for reference.

**Produced By Henan Master Machinery Co.,Ltd**

**Dear Customer,**

**Thanks for choosing Master machine.**

**To ensure the safety and proper use of the machine, please read the instruction book carefully before use.**

**Also, please fill this card and save it for warranty use.**

Buyer Name		Purchase Time	
Tel		Contact Person	
Address			
Product Name	Road Roller		
MODEL	FVR850		
Motor Model			
Note			

## 1. Preface

Thank you very much that you have purchased the products.

This operation manual will tell you how to correctly operate and maintain your machine. Before using the machine, please read the operation manual thoroughly to guarantee the correct operation. Following the operation requirements in the operation manual will make that your machine is in the best operation state so as to extend the life of the set. For you own safety and protection injury, carefully read, understand and observe the safety instructions described in this manual.

Keep this manual or a copy of it with the machine. This machine is built with user safety in mind; however, it can present hazards if improperly operate and serviced. Follow operating instructions carefully!

With the increasing improvement and enhance of the products made by the company, there may be some differences between the contents described in the operation manual and the practical products, it is our desire that the users will pay attention to the differences.

The walk-behind double drums roller is light road roller. It is used to compress on the asphalt, sand soil gravel and it is also used to planish the lawn and playground.

This machine is with hydraulic unit, variable plunger pump, and constant displacement hydraulic motor, which make the machine has excellent performance.

## 2. Safety alerts

In order to operate the machine safely, it is very necessary to maintain the machine regularly. Please read the Safety alerts carefully to master the skills of maintenance and operation.

DO NOT modify the machine without the written approval of the manufacturer.

In order to provide the operator with important operating instructions and hazard warning, please keep the machine clean and the words on the label distinguishable.

Must check and tighten all external fasteners regularly.

### 2.2 Safety operation

Before using the equipment, must read the relevant operating instructions and be familiar with the equipment. DO NOT operate this equipment without the relevant training or are not familiar with the equipment.

#### **Warning:**

◎Before operating the equipment, must read, understand and follow the manual steps.

◎After starting the machine, immediately check all devices whether they work well or not, or it is prohibited operating the machine.

◎ALWAYS be concerned the location of other equipments and other people's locations and actions.



◎ALWAYS pay close attention to the condition of the road. When operate the machine on the uneven pavement, hills, soft or rough materials, please be more careful, the machine may move or slip.









◎Operate the machine carefully when it closes to the pit, ditch, or

low edge. Ensure that the surface is stable enough to withstand the weight of the machine and the machine has no moving, dropping or rollover risk

- ◎Fuel the oil tank in well-ventilated area.
- ◎Re-cover oil tank cover after oiling.
- ◎In order to reduce the possibility of fire accidents, make sure there are no leaves and paper debris around the exhaust pipe.
- ◎DO NOT use machines which needs maintenance or repair.
- ◎DO NOT operate the machine after taking the drugs cause drowsiness or after drinking.
- ◎DO NOT add or replace the oil during the operation.
- ◎DO NOT operate the machine without the filter or with the damaged filter.
- ◎DO NOT operate the machine without the fuel cap or with the loosened fuel cap.

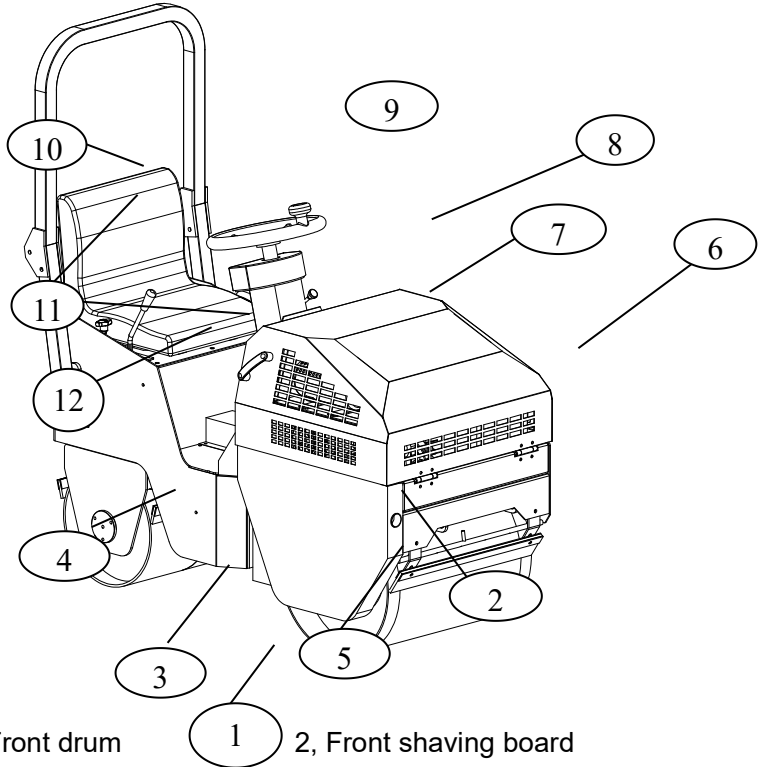
### 2.3 Warning and information labels

Label	Meaning	Label	Meaning
	<p>WARNING Precautions during the use</p>		<p>Start switch operating label</p>

<b>3.0</b>		Water tank filler		Water valve operating label
		WARNING Hot surface		Name Plate Provide the model number, serial number etc. of the machine
		Throttle controlling label		WARNING Pinching hazardous, Rotary machine
		Walking operating label		Vibration operating label

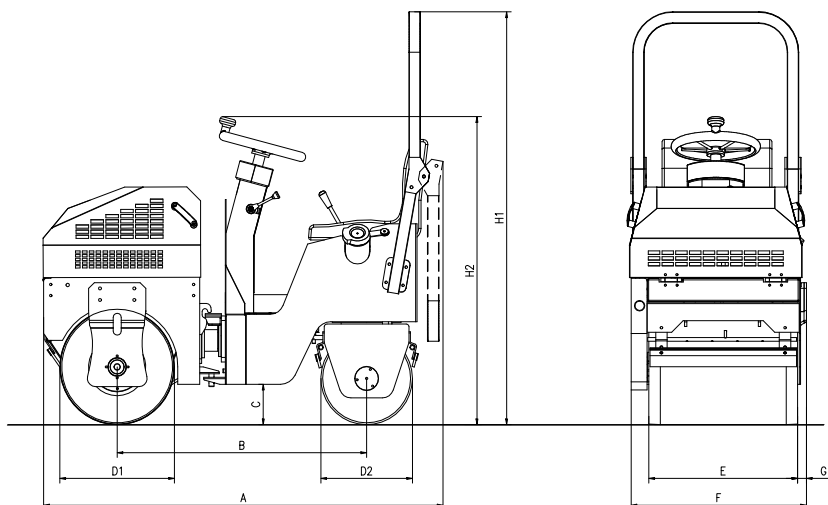
## Technical parameters

### 3.1 Overall structure



- |                         |                        |
|-------------------------|------------------------|
| 1, Front drum           | 2, Front shaving board |
| 3, Back drum            | 4, Back shaving board  |
| 5, Side cover           | 6, Top cover           |
| 7, Throttle lever       | 8, Steering wheel      |
| 9, Seat                 | 10, Anti-roll frame    |
| 11, Front/reverse lever | 12, Water valve switch |

### 3.2 Dimensions



	mm
A	1745
B	1090
C	175
D1	580
D2	425
E	500
F	700
G	35
H1	1790
H2	1335

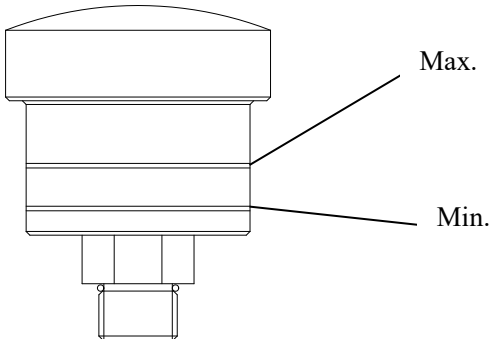
## 4.0 Operation instruction

### 4.1 Preparation before starting



Firstly, finish the maintenance work before the starting, and do the following work:

- 1, Check the front/reverse lever is in the neutral position or not .
- 2, Check vibration switch is in the closed position or not.
3. Check the steering wheel is flexible or not.
4. Check is there enough engine oil and fuel which can meet the requirements in the engine.
5. Check the level of the hydraulic oil in the cup oil.



6, When it is being started, the machine should be stopped on the place with small slope. Generally the slope ratio should not exceed 1:17, avoiding the accident caused automatic slide of the machine.

7, Check the distance between the shaving board and the drum, adjust the gap when the distance is too small or too large. Firstly loosen the fixing bolt, and then move the shaving board up and down, make the gap between the shaving board and the drum is 3-5mm, and ensure the space is even.

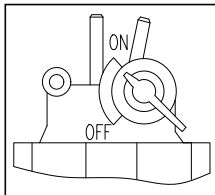
8, Check the connecting bolts loose or not, if loose, tighten in time. Focus on the examination of the important parts such as engine mounting bolts, frame bolts, hinge axis mounting bolts.

## 4.2 Start the roller

Don't starts the engine until verify every device is normal.

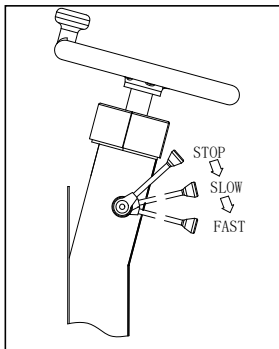
### 4.2.1 Electric start

① Open the fuel switch on the oil cup of the oil filter.

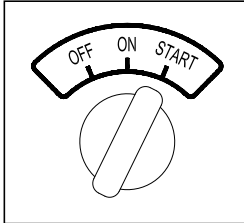


oil cup of the oil

② Pull the throttle lever to the "SLOW" or "FAST" position,



③ Turn the switch clockwise to the "START" position.



④ Once the engine is started, lift the hand from the key. During the normal operation, strictly prohibit turning the switch to "START" position, otherwise it will damage the starter motor, ensure startup key is in the "ON" position.

⑤ If the engine has not started within ten seconds, do not start again until 15 seconds later.

#### 4.2.2 Auxiliary Start

When the battery voltage is too low, the engine can not be started by the start key

Press the decompression handle, turn the start key to the "START" position for 10-15 seconds. At last, release the decompression lever to help auxiliary start.

#### 4.2.3 kick-type hand start

The preparation before start is the same with electric start ① and ②.

Notes: After filling the fuel in the situation the engine flameout because lacking fuel or in the situation run the new machine for the first time, the fuel may be mixed with air, the air should be discharged completely before starting the engine. Firstly unscrew the nut of the injection pump, then pull the start key to the "ON" position till there is no bulb rise from the fuel. At last, tighten the nut and start the engine.



nut of the injection pump

### 4.3 Drive operations

During the work, make sure the bypass valve actuator in the “OFF” position.

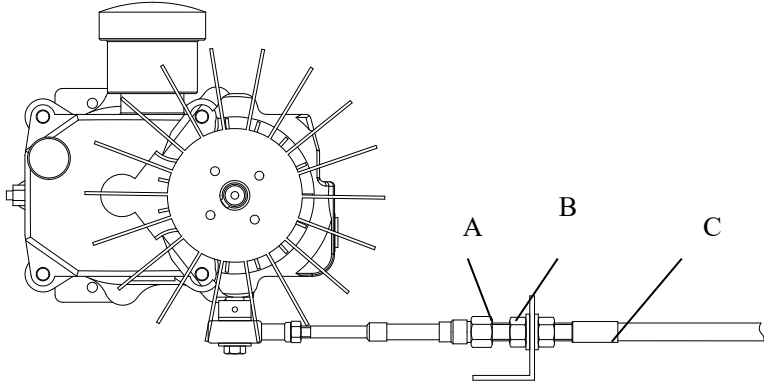
1, The speed, forward and backward of the machine are all controlled by the front/reverse lever.

The machine will go ahead when push the handle to the front. The speed is decided by the moving distance of the handle. From the low speed to high speed can achieve stepless change.

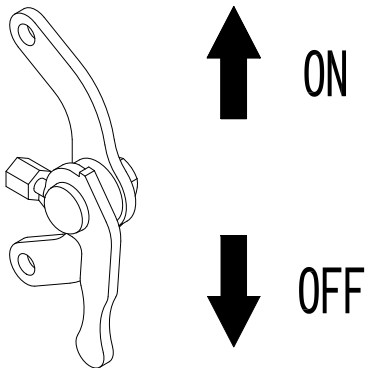
2, The machine will retreat when push the front/reverse lever to the back, speed control method is in contrast with the forward.

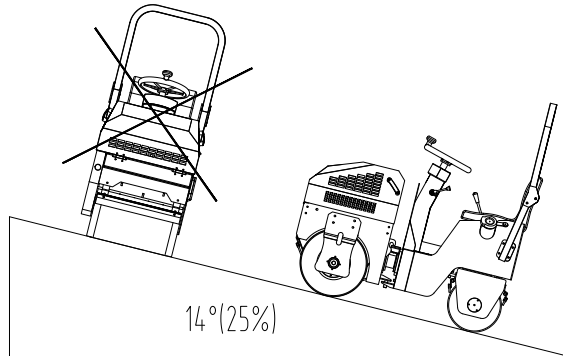
3, Put the front/reverse lever in the neutral position, the roller stop running at once. If the machine still moves, loose the nut B and rotate the nut A counterclockwise, let control line C moves forward until the machine stops moving, then tighten the nuts A and B.

If the machine moves back, loose the nut A and rotate the nut B clockwise, let control line C moves back until the machine stops moving, then tighten the nuts A and B.



4, Be especially careful when operate the machine in the slope or hill. The machine can only work continuously on the slope not more than 14 degrees (25% levels). ALWAYS operate the machine up and down hills rather than from side to side, if not, the machine will roll over.





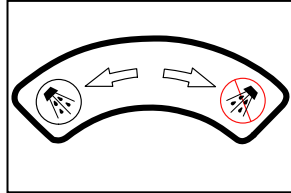
#### 4.4 Vibration operation

The purpose of vibration is to increase the compaction effect. When compress on the very loose or soft material, do not use the vibration, only go through in high-speed in the first pass, and then turn on the throttle and open the vibration switch (electromagnetic clutch-type), the front drum will vibrate in high frequency. At last, compress on the road surface in low speed with the vibration, so as to achieve the desired purpose.

During the vibration operation, be sure to turn the start key to "ON" position, IF NOT, the machine can not vibrate.

#### 4.5 Sprinkler system

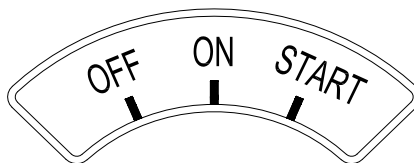
According to different requirements, water tank can be filled with water or diesel fuel which is sprayed to the wheel to prevent the compressed material sticking to wheels. Water content of compressed material can be adjusted by controlling the water valve switch.



Notes: Completely discharge the water in the tanks and sprinkler systems when the machine is not in use and the temperature is below freezing.

#### 4.6 Stopping and transportation

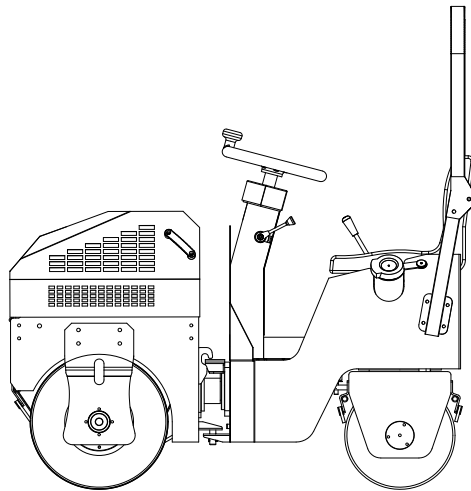
- 1, Set the forward/reverse lever in the neutral position before stopping,
- 2, Pull the throttle lever to “SLOW” position, and let the engine run 3 minutes without any load. If stop the engine suddenly, engine will be damaged seriously.
- 3, Pull the throttle lever to “STOP” position, then engine stop running.
- 4, When the engine stops, turn key switch to “OFF” position, IF NOT, the battery will consume power automatically and the engine can not be started again.



5, When the roller is stopped on slopes and the engine stops, please plugged the front and back wheel with wedges to prevent the machine sliding down along the slopes.

6, DO NOT drag the machine more than 200m, and the speed should be within 18m/min.

7, When transport or lift the machine use the appropriate tool of rope lock, fix the front and rear racks with hinge pins.



Case hooks

Hinge pin





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<b>7</b> , Starter motor	<b>8</b> , Battery (12V)	<b>9</b> , Charging coil
<b>10</b> , Electronic fuel pump	<b>11</b> ,Intermediate relay	<b>12</b> , Oil magnetic valve

## 6.0 Maintenance

Good maintenance is very important for the security, economic, normal operation, proper maintenance can extend the life-time of the machine and reduce or eliminate the faults, improving the working efficiency. The maintenance procedures list should be strictly followed.

### 6.1 Lubricants and fuel

A: Calcium-based grease

B: Diesel Engine Oil

- 1、 (-15℃~-5℃) HCA-8
- 2、 (-10℃~30℃) HCA-11
- 3、 (>5℃) HCA-14

C: Hydraulic oil: Choose the SL, SJ petrol engine oil, CI, CH-4, CG-4, CF-4, CF and CD level diesel engine oil, ISO11158-HM and DIN51524-2HLP level hydraulic oil which can meet API standard.

- 1, (-15℃~-5℃) HCA-8
- 2, (-10℃~30℃) HCA-11
- 3, (>5℃) HCA-14

D: Engine oil

- 1, Higher than -15 °C -20#
- 2, Higher than -10 °C -10#
- 3, Higher than 5 °C 0#
- 4, Higher than 25 °C 10#

**Notes:** In cold or hot working conditions, please select special lubricants and diesel.

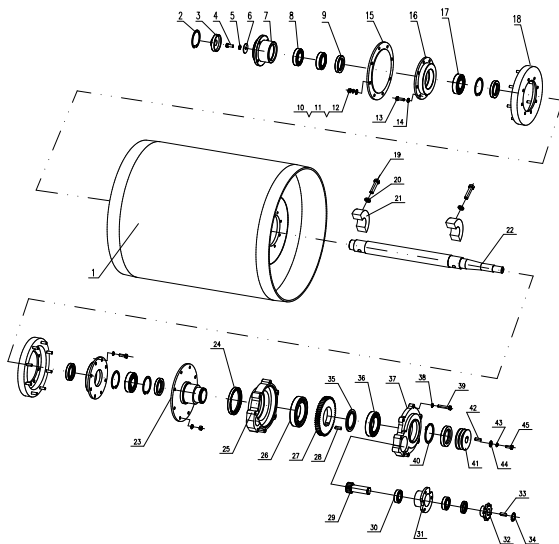
### 6.2 Maintenance procedures list

Item \ Period	Daily before starting	Every 20 hours	Every 50 hours	Every 100 hours	Every 200 hours	Every 500 hours	Every 800 hours
Check the tightness of spare parts	•						
Check the oil level of the hydraulic oil cup	•						
Check the oil level of engine oil	•						
Change engine oil		• The first time		• The second time			
Clean the engine filter		• The first time		• The second time			
Change air filter					•		

Adjust the control line of throttle					•			
Adjust the forward/reverse control lever					•			
Check the tension extent of chain	check			•				
	adjust						•	
Check the tension extent of V-belt	check			•				
	adjust						•	
Check the wear extent of V-belt	check				•			
	adjust							•
Check the wear extent of Coupling	check				•			
	adjust							•

## 7.0 Graphical interpretation of the components

### 7.1 Front drum assembly



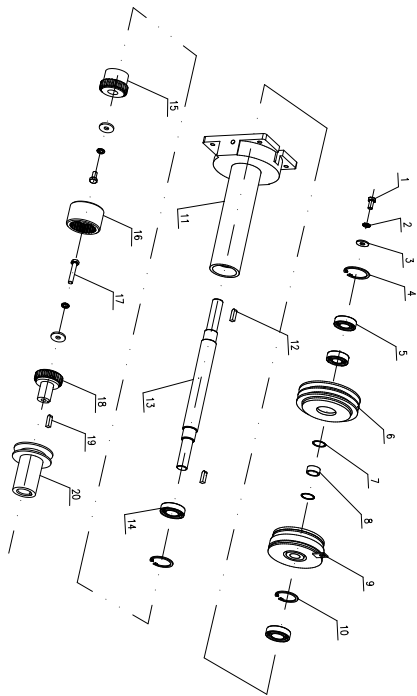
No.	Code name	Name	Quantity	Remark
1	0720101	Roller assembly	1	
2	DQK020117	Hole ring 62	1	
3	0260213	Driven end cap	1	
4	LSK020502	Hexagon socket screw M8×20	1	
5	DZK020104	Spring washer 8	1	

6	0260818	Outsize flat washers 8	1	
7	3040701	Support bearing seat	2	
8	NZK011307	Deep groove ball bearings 6007-2Z	2	
9	MFK011001	Labiose gasket ring Φ45×Φ62×8	1	
10	LMK040104	Screw nut M8	16	
11	DZK020104	Spring washer 8	16	
12	DZK010104	Flat washers 8	16	
13	LSK050503	Hexagon bolt M8×25	16	
14	DZK020104	Spring washer 8	16	
15	0260211	Driven end cap	1	
16	0260102	Bearing end seat	2	
17	WZK021407	Deep groove ball bearings 6207-2Z	2	
18	0260107	Vibration Damper	2	
19	LSK050703	Hexagon bolt M12×45	2	
20	DZK020106	Spring washer 12	2	
21	0260105	Thrown block	2	
22	3040702	Main spindle	1	
23	0260210	Drive end cover	1	
24	MFK011701	Labiose gasket ring Φ80×Φ100×10	1	
25	0260201	Gear box	1	

26	NZK011314	Deep groove ball bearings 6014-2Z	1	
27	0260203	Gear	1	
28	0260207	Flat key 12×8×17	1	
29	0260204	Input gear	1	
30	NZK011305	Deep groove ball bearings 6005-2Z	3	
31	0260205	Bearing seat	1	
32	0260209	Driven sprocket wheel	1	
33	0260208	Flat key 8×7×25	1	
34	DQK010112	Shaft ring 25	1	
35	0260206	Boundary sleeve	1	
36	NZK011311	Deep groove ball bearings 6011-2Z	1	
37	0260202	Gear box cover	1	
38	DZK020104	Spring washer 8	7	
39	LSK010507	Hexagon bolt M8×45	7	
40	DQK010121	Shaft ring 55	1	
41	0260805	Vibration belt	1	

42	0260452	Flat key 8×35	1	
43	DZK020104	Spring washer 8	1	
44	0260818	Outsize flat washers 8	1	
45	LSK010501	Hexagon bolt M8×16	1	

## 7.2 Vibration system

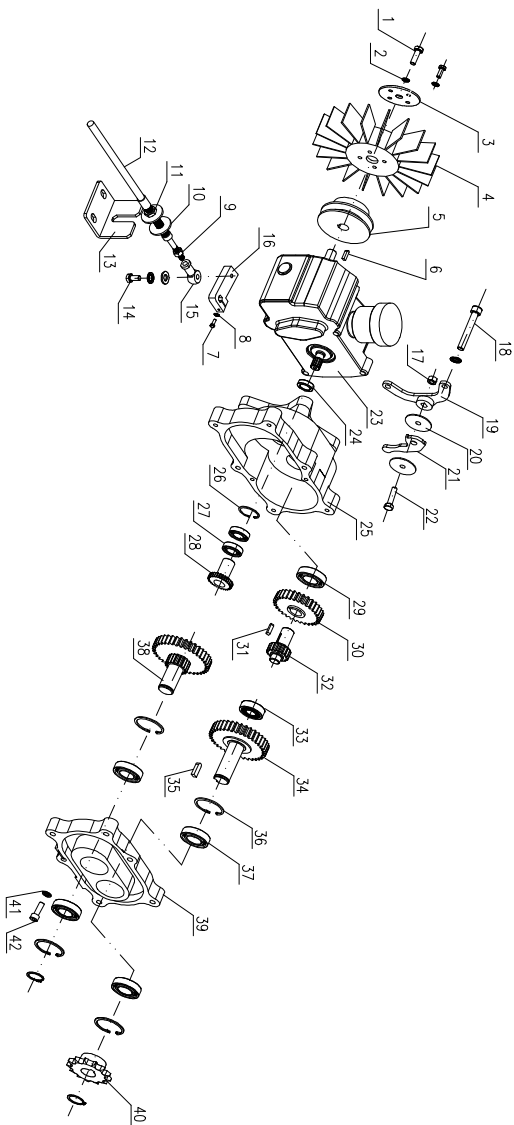




No.	Code name	Name	Quantity	Remark
1	LSK010501	Hexagon bolt M8×16	2	
2	DZK020104	Spring washer 8	2	
3	0260818	Outsize flat washers 8	2	
4	DQK020113	Hole ring 47	1	
5	WZK011304	Deep groove ball bearings 6004-2Z	2	
6	0790704	Electromagnetic clutch pulley	1	
7	0240808	Adjusting washer	2	
8	0790703	Clutch adjusting sleeve	1	
9	0240804	Electromagnetic clutch CDE2S5AA-12V	1	
10	DQK010112	Circlip for shaft 25	2	
11	3040501	Engine vibration sleeve assembly	1	
12	0240407	Key 5×28	2	
13	3040502	Diesel engine transmission shaft	1	
14	WZK011304	Deep groove ball bearings 6004-2Z	2	

15	0240403	Vibratory tube coupling ( interchangeable )	1	
16	0120522	Flexible coupling	1	
17	0240545	Screw bolt M10×1.25×25	1	
18	0240402	Belt coupling		
19	0240406	Key ( 6x6 )	1	
20	3040503	Engine pulley	1	

### 7.3 Power transmission system



No.	Code name	Name	Quantity	Remark
1	LSK010402	Hexagon bolt M6×16	5	
2	DZK020103	Spring washer 6	5	
3	0260311	Fan gland	1	
4	0260905	Fan	1	
5	0260310	Belt pulley	1	
6	0240407	A key 5×30	1	
7	LSK010402	Hexagon bolt M6×12	2	
8	DZK020103	Spring washer 6	2	
9	LMK010103	Hexagon nut M8	1	
10	DZK010106	Gasket 12	2	
11	LMK010105	Hexagon nut M12	2	
12	0240214	Direction control wire	1	
13	0240118	Line inverter support	1	
14	LSK010502	Hexagon bolt M8×20	1	
15	NZK120102	Joint bearing M8	1	
16	3040602	Crank arm	1	
17	LMK040104	Lock nut M8	1	
18	LSK020510	Hexagon socket screw	2	
19	0240303	Wrench block of by-pass	1	
20	0240801	Disc spring 12	2	
21	0240304	Wrench of by-pass valve(s)	1	