TMG™ INDUSTRIAL

PRODUCT MANUAL

VIBRATORY ROLLER

Model:TMG-WVR40

⚠ WARNING

- Please read the product manual completely before assembly
- Check against the parts list to make sure all parts are received
- Wear proper safety goggles or other protective gears while in assembly

Missing parts or questions on assembly?
Please call: 1-877-761-2819 or email: cs@tmgindustrial.com
Do not return the product to dealer, they are not equipped to handle your requests

CONTENTS

1. Preface

- Thank you very much that you have purchased the products.
- This is a kind of light ride-on vibratory roller. It is normally used to compress on the small area road surface, sports venues and the base of groove etc. What's more, it can work together with large-scale roller.
- This machine adopts hydraulic drive, mechanical vibration. The main drive is double hydraulic motors with small size and no leak. It is convenient for the workers to operate and maintain this machine.
- The operation manual is the reference of how to operate the machine; please follow the existing guidelines and instruction. Before using the machine, please read the operation manual thoroughly to guarantee the correct operation. If you still have difficulty to operate the machine, please contact with the company or the nearest dealer, we will do our best to serve you.
- For the profit of customers, our company will continue to improve or update the product.

2. Safety Notes

- This manual contains DANGER, WARNING, CAUTION, and NOTE callouts which must be followed to reduce the possibility of personal injury, damage to the equipment, or improper service.

NOTE is the safety alert symbol. It is used to alert you to potential personal injury hazards
NOTE Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER indicates a hazardous situation which, if not avoided, will result in death
DANGER or serious injury

WARNING indicates a hazardous situation which, if not avoided, could result in
WARNING death or serious injury

CAUTION indicates a hazardous situation which, if not avoided,
CAUTION could result in minor or moderate inju
CAUTION: Used without the safety alert symbol, CAUTION indicates a

potentially hazardous situation which, if not avoided, may result in property damage.

Note: Contains additional information important to a procedure

2.1 Operating Safety

Familiarity and proper training are required for the safe operation of equipment.

WARNING Equipment operated improperly or by untrained personnel can be dangerous. Read the operating instructions contained in both this manual and the engine manual and familiarize yourself with the location and proper use of all controls. Inexperienced operators should receive instruction from someone familiar with the equipment before being allowed to operate the machine.

2.1.1 ALWAYS read, understand, and follow procedures in the Operator's Manual before attempting to operate the equipment

2.1.2 ALWAYS check that all controls are functioning properly immediately after start-up!

DO NOT operate the machine unless all controls operate correctly.

ALWAYS remain aware of changing positions and the movement of other equipment and personnel on the job site.

2.1.3 ALWAYS remain aware of changing surface conditions and use extra care when operating over uneven ground, on hills, or over soft or coarse material. The machine could shift or slide unexpectedly.

2.1.4 ALWAYS use caution when operating near the edges of pits, trenches or platforms. Check to be sure that the ground surface is stable enough to support the weight of the machine with the operator and that there is no danger of the roller sliding, falling, or tipping.

2.1.5 ALWAYS wear protective clothing appropriate to the job site when operating equipment ALWAYS keep hands, feet, and loose clothing away from moving parts of the machine.

2.1.6 ALWAYS store the equipment properly when it is not being used. Equipment should be stored in a clean, dry location out of the reach of children.

2.1.7 ALWAYS operate the machine with all safety devices and guards in place and in working order. NEVER allow anyone to operate this equipment without proper training. People operating this equipment must be familiar with the manual.

2.1.8 NEVER touch the engine or muffler while the engine is on or immediately after it has been turned off. These areas get hot and may cause burns

2.1.9 NEVER use accessories or attachments that are not recommended by OUR COMPANY. Damage to equipment and injury to the user may result.

2.1.10 NEVER leave machine running unattended.

2.1.11 NEVER operates the machine with the fuel cap loose or missing.

2.2 Operating safety of engine

Internal combustion engines present special hazards during operation and fueling. Read and follow the warning instructions in the engine owner's manual and the safety guidelines below. Failure to follow the warnings and safety guidelines could result in severe injury or death.

2.2.1 DO NOT smoke while operating the machine.

2.2.2 DO NOT smoke when refueling the engine.

2.2.3 DO NOT refuel a hot or running engine.

2.2.4 DO NOT refuel the engine near an open flame.

2.2.5 DO NOT spill fuel when refueling the engine.

2.2.6 DO NOT run the engine near open flames.

2.2.7 DO NOT run the machine indoors or in an enclosed area such as deep trench unless adequate ventilation, through such items as exhaust fans or hoses, is provided. Exhaust gas from the engine contains poisonous carbon monoxide gas; exposure to carbon monoxide can cause loss of consciousness and may lead to death.

2.2.8 ALWAYS refill the fuel tank in a well-ventilated area.

2.2.9 ALWAYS replace the fuel tank cap after refueling.

2.2.10 ALWAYS keep the area around a hot exhaust pipe free of debris to reduce the chance of an accidental fire.

2.3 Service safety

WARNING Poorly maintained equipment can become a safety hazard! In order for the equipment to operate safely and properly over long period of time, periodic maintenance and occasional repairs are necessary.

2.3.1 DO NOT attempt to clean or service the machine while it is running. Rotating parts can cause severe injury.

2.3.2 DO NOT use gasoline or other types of fuels or flammable solvents to clean parts, especially in enclosed areas. Fumes from fuels and solvents can become explosive.

2.3.3 DO NOT modify the equipment without the express written approval of the manufacturer.

2.3.4 ALWAYS check all external fasteners at regular intervals.

2.3.5 ALWAYS keep the area around the muffler free of debris such as leaves, paper, cartons, etc. A hot muffler could ignite the debris and start a fire.

2.3.6 ALWAYS replace worn or damaged components with spare parts designed and recommended by OUR Corporation.

2.3.7 ALWAYS keep the machine clean and labels legible. Replace all missing and hard-to-read labels. Labels provide important operating instructions and warn of dangers and hazards.

2.3.8 ALWAYS switch off the power supply at the battery disconnect before adjusting or maintaining the electrical equipment.

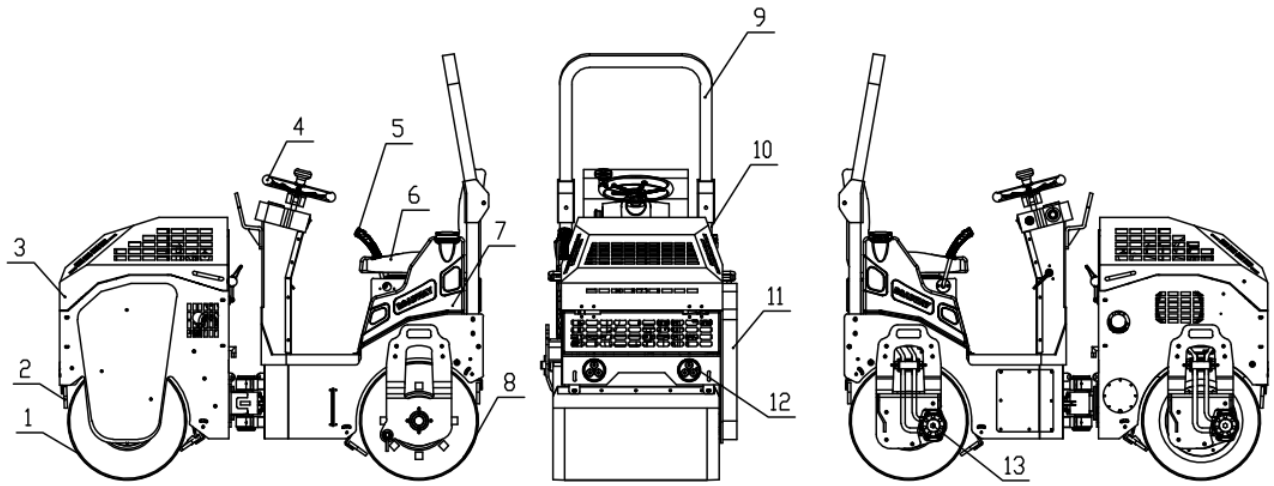
2.3.9 ALWAYS do Periodic Maintenance as recommended in the Operator's Manual.

2.4 Safety label

No.	Label	Content
1		Start key
2		Hydraulic oil level
3		Hydraulic oil tank
4		Oil drain hole
5		When add oil, must no Sparks, flame, or burning objects
6		Walk operation
7		Throttle control
8		Lifting point

3. Technical parameters

3.1 Overall structure



NO.	Item	NO.	Item
1	Front drum	8	Rear drum
2	Scraper	9	Upper assembly of ROPS(roll over protection system)
3	Upper cover	10	Lower assembly of ROPS(roll over protection system)
4	Steering wheel	11	Side cover
5	Direction control handle	12	LED lamp
6	Seat	13	Motor
11	Water tank		

Technical parameter

Type	TMG-MVR40
Engine model	GX390
Engine type	Gasoline engine, air cooled, 4 strokes, single cylinder, OHV
Max.power	13hp/3600rpm
Starting method	Electric starting
Fuel tank volume	6L
Run speed	0-4km/h
Drive method	Double hydraulic motor
Drum diamerer and width	Φ500X700
Exciting force	26kN
Exciting frequency	70Hz
Vibratory controlling method	Electromagnetic clutch
Climbing capacity	30%
Weight	1100kg

4. 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.

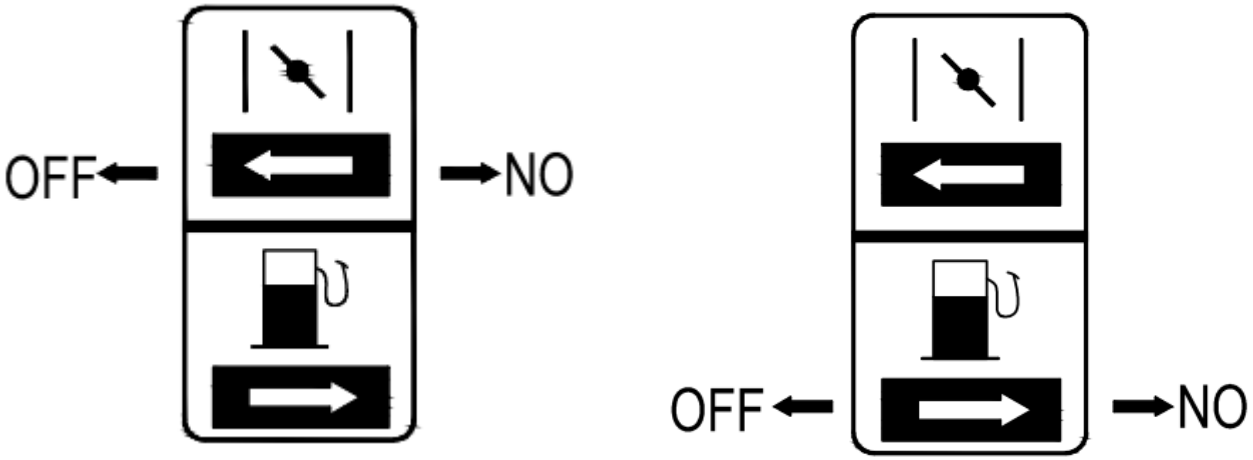
7. Check the connecting bolts loose or not, if loose, tighten in time. Focus on the examination of the important parts such as engine mounting bolts, frame bolts, hinge axis mounting bolts.

4.2 Start the roller

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

4.2.1 Electric starting

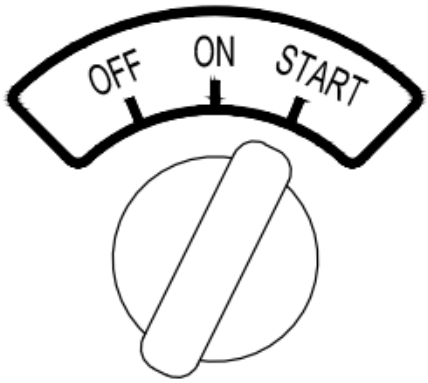
① Turn the fuel switch to the “ON” position.

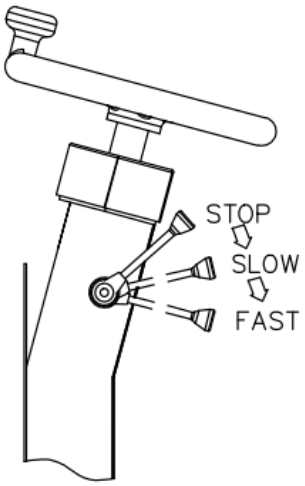


② In the situation of cold start, turn the chock lever to the “OFF”position.
In the situation of warm start, turn the chock lever to the “ON”position.

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

③Turn 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.

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

4.2.2 Recoil type hand start

When the battery voltage is too low, the key will not be able to start the engine.

Then use recoil type hand start. The preparation before start is the same with electric start ① and ②, slowly pull start the handle until feel drag, and then pull fastly, at last slowly putback the handle.

4.3 Drive operations

After start, keep sure not run the machine at once, please note:

1. Preheat the engine for several minutes until the warm the machine.
2. Keep sure the color of exhaust, without the unnormal sounds and smell.

3. 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.

4. When operate the machine on the slop, should take care to reduce personal injury or damage to the machine.

5. For the operation safety, the slop angle shoud be within 17 degree.

6. Don’t operate the machine on the side slop, 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.

1) Turn the start key to (I), vibration start.
2) Turn the start key to (O), vibration stop.

***Note*:** If turn off the power during vibration, The machine will go on vibrating when restart the machine. So ensure the vibration is turn off when start the engine.

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.

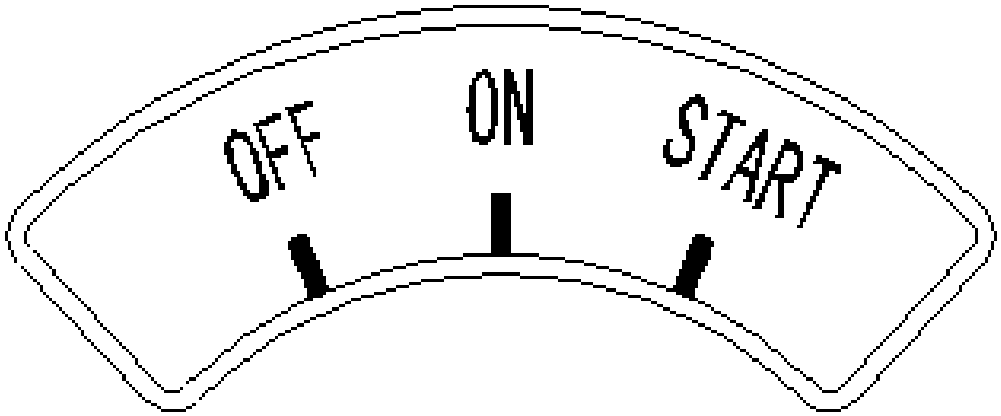
4.6 Stopping and transportation

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. Below the machine it is forbidden to stand and walk.

***Note*:** If lift the machine, just use the sling hole.

4.7 Storage the machine

Long time not use the machine, PLS pay attention as follows,

1. Clean the machine and storage in the room area

2. Check whether the fuel oil, hydraulic oil and engine oil leak

3. Disconnect the battery cathode, or remove the battery.In order to prevent the battery consuming power automatically during the long distance transportation, main electric circuit is under disconnected condition when the machine leaves factory. Please connect the electric circuit according to the electrical schematic before running the machine for the first time, IF NOT, the engine can not be started.

5. 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.

5.1 Lubricants and fuel

A: Calcium-based grease

B: Engine oil of gasoline engine:

Low temperture: SAE 10W-30
High temperture: SAE40

C: Hydraulic oil: Can choose VG 46 rate hydraulic oil

D. Fuel:

Recommend 90# or higher grade unleaded gasoline.

5.2 Maintenance procedures list

5.2.1 Every 10 hours

1) Eniine oil

Put theengive in horizontal position, check the engine oil level.
If the engine oil level is not between the scale, PLS add engine oil.

2) Fuel oil tank

Check the fuel oil level height

5.2.2 Every 100hours

1) Change the engine oil.When the oil temperature is not fully cooled, open oil plug and discharge the oil.Tighten the oil plug, and add the new oil from the oil port.

2) Clean the fuel filter

3) Clean the air filter

***Note*:** New machine, after working 50 hours, need to change the engine oil.

5.2.3 Every 500 hours

Change the hydraulic oil of hydraulic oil tank

1) When the oil temperature is not fully cooled, open oil plug and discharge the hydraulic oil.

2) Clean the inner of hydraulic oil tank

3) Add the new oil to the remarked scale

4) Start the engine, and idle for 2-5 minutes, and then close the engine, check the oil level. If oil level is lower than the 1/2 of oil level gauge. Please add again

***Note*:** If add to much oil, the hydraulic oil maybe leak at the oil port.

5.2.4 Battery

- Observe the status of battery, confirm whether need to change
- Whether the retaining bolt looseness, if loosen, please tighten

5.2.5 Grease nipple

- At the articulated joint, filling grease by grease nipple for rotating flexible hinge

5.3 Clean the hydraulic system

Keeping the hydraulic oil clean is a vital factor affecting the service life of hydraulic components. Oil in hydraulic systems is used not only to transfer power, but also to lubricate the hydraulic components used in the system. Keeping the hydraulic system clean will help avoid costly

Major sources of hydraulic system contamination include:

- Particles of dirt introduced when the hydraulic system is opened for maintenance
- or repair

- Contaminants generated by the mechanical components of the system during
- Operation
- Improper storage and handling of hydraulic oil
- Use of the wrong type of hydraulic oil
- Leakage in lines and fittings

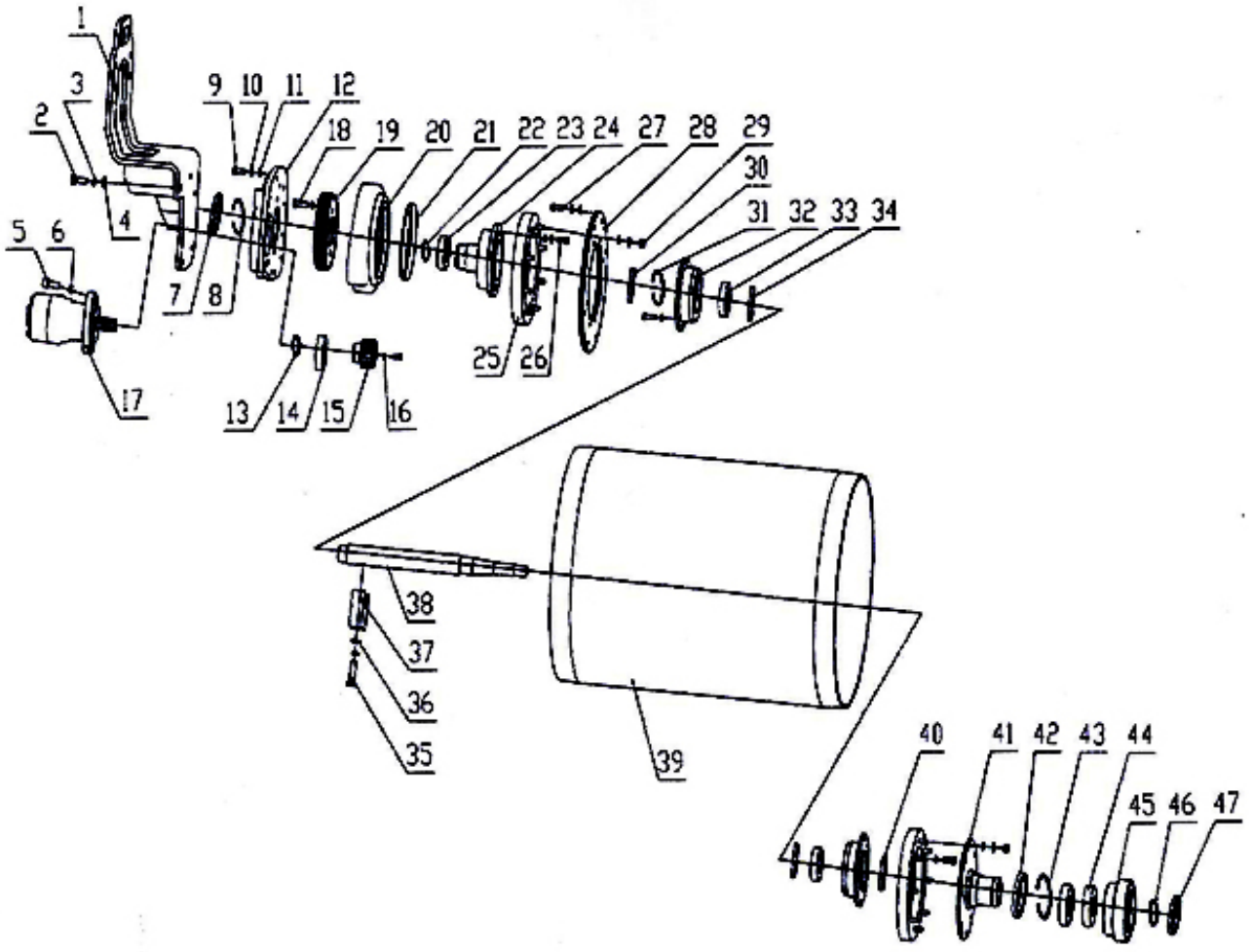
***Note*:** Please change hydraulic oil and filter during the recommended maintenance hours.

5.4 Requirements of hydraulic oil

- Our company recommends the use of a good petroleum-based, anti-wear hydraulic oil in the hydraulic system of this equipment. Good anti-wear hydraulic oils contain special additives to reduce oxidation, prevent foaming, and provide for good water separation. When selecting hydraulic oil for your machine, be sure to specify anti-wear properties. Most hydraulic oil suppliers will provide assistance in finding the correct hydraulic oil for your machine.
- Avoid mixing different brands and grades of hydraulic oils.
- Most hydraulic oils are available in different viscosities.
- The SAE number for an oil is used strictly to identify viscosity—it does not indicate the type of oil (engine, hydraulic, gear, etc.).
- When selecting a hydraulic oil be sure it matches the specified SAE viscosity rating and is intended to be used as a hydraulic oil.

***Note*:** When change hydraulic oil or engine oil, please collect the drain oil by container.

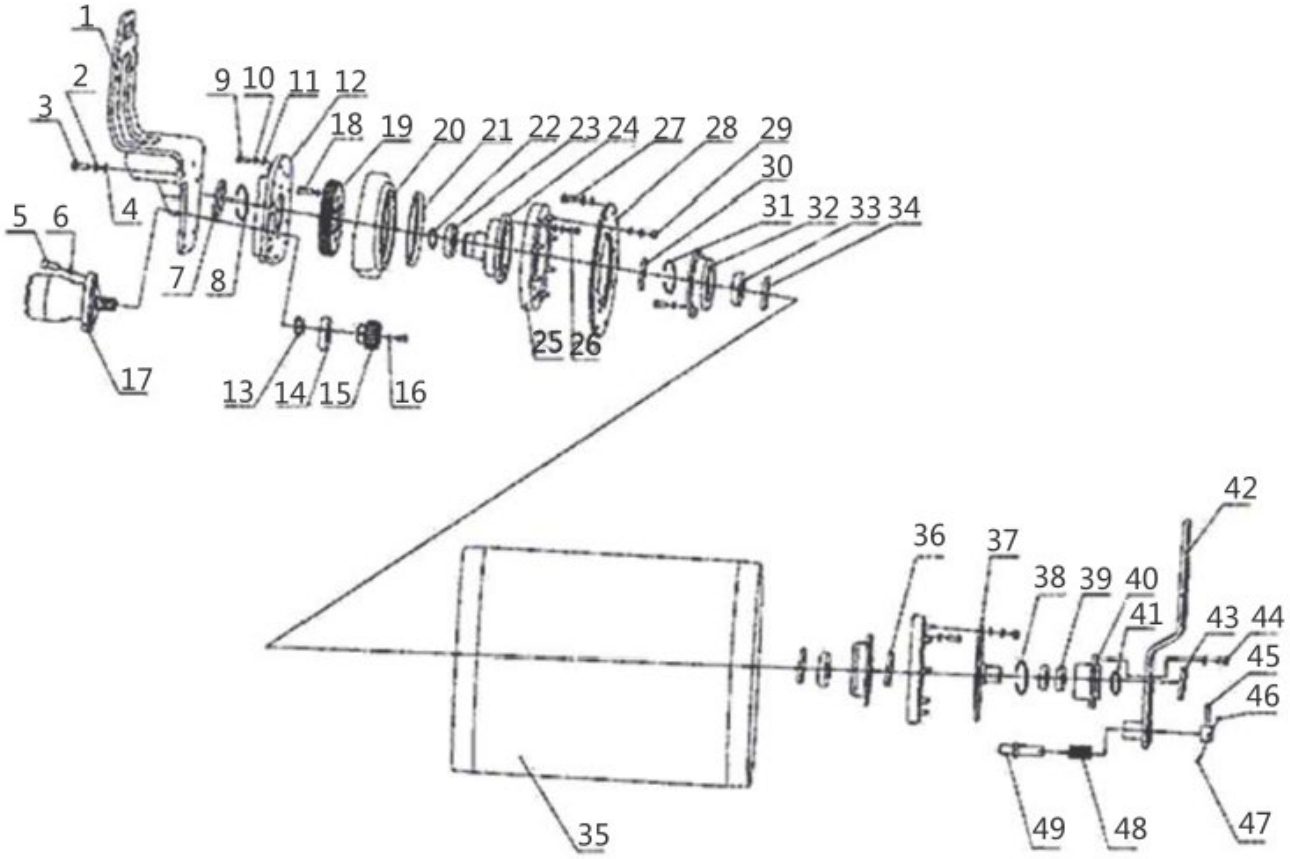
6. Front drum assembly



NO.	Code	Item	Quantity	Remark
1	2290412	Supporting plate of motor assembly	1	
2		Hexagon bolt M10×30	5	
3		Spring washerΦ10	5	
4		Flat washerΦ10	5	
5		Inner hexagon bolt M12×35	4	10.9 grade
6		Flat washerΦ12	11	
7	2290612	End cover	1	90X8
8	DQK020135	Circlip for holes	1	φ90
9		Hexagon bolt M8×30	4	
10		Spring washerΦ8	52	
11		Flat washerΦ8	36	
12	2290406	Gear box cover	1	

13	DQK010117	Circlip for shaft	1	φ40
14	NZK011308	Deep groove bearing	1	6008ZZ
15	2100104（HT)	Small gear	1	
16		Flat washerΦ8	1	
17	2101008	Driving motor	1	
18		Hexagon bolt M12×35	6	10.9 grade
19	2100103	Big gear	1	
20	2100106	End cover of box	1	
21	MFK012801	Framework oil seal	1	125-160-12
22	DQK010120	Circlip for shaft	1	φ50
23	NZK011410	Deep groove bearing	1	6210ZZ
24	2290405	Gear axle	1	
25	0260107	Rubber shock absorber	2	
26		Hexagon bolt M8×20	9	10.9grade
27		Hexagon bolt M8×25	24	10.9grade
28	2290407	Supporting plate of shock absorber	1	
29		Locknut	16	M8
30	2290613	Framework oil seal	1	72X8
31	DQK020119	Circlip for holes	4	φ72
32	0260102A	Bearing pedestal	2	
33	WZK021407	Deep groove bearing	2	6207ZZ
34	MFK010901	Framework oil seal	2	42-72-8
35		Hexagon bolt M12×45	1	10.9grade
36		Flat washer	1	φ12
37	2290411	Flail block	1	
38	2290410	Main alxe of vibration	1	
39	2290404	Front roller assembly	1	
40	MFK010703	Framework oil seal	1	35-72-7
41	2290408	Supporting seat of roller	1	
42	MFK013502	Framework oil seal	1	68-95-10
43	DQK020137	Circlip for holes	1	φ95
44	NZK011312	Deep groove bearing	2	6012ZZ
45	2290409	Bearing pedestal of vertical plate	1	
46	DQK010127	Circlip for shaft	1	φ60
47	MFK011304	Framework oil seal	1	60-75-10

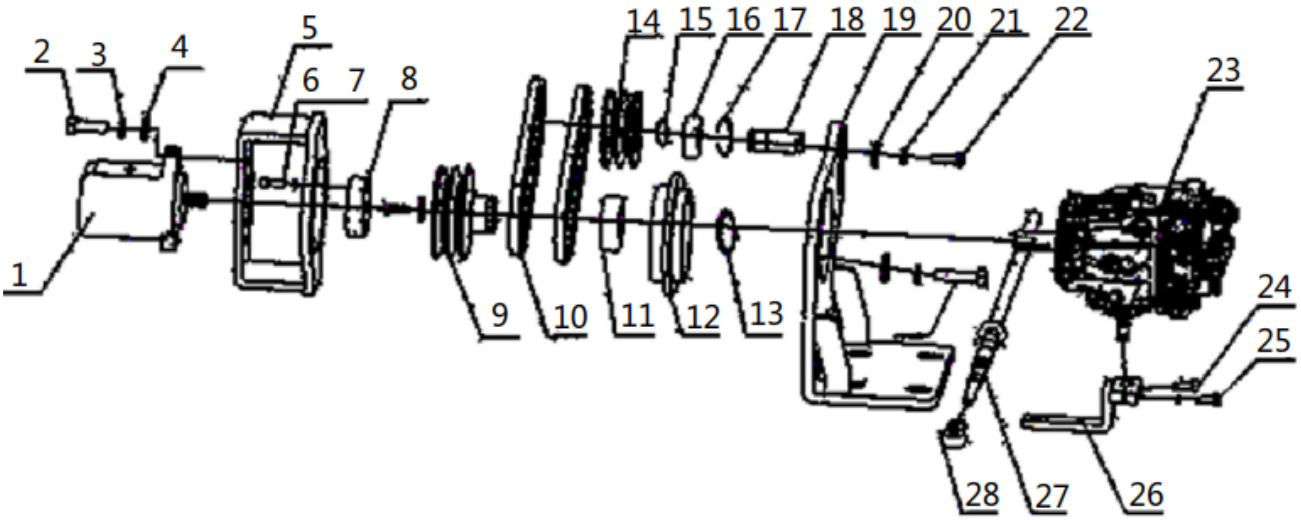
7. Rear drum assembly



NO.	Code	Item	Quantity	Remark
1	2290412	Supporting plate of motor assembly	1	
2		Hexagon bolt M10×30	5	
3		Spring washerΦ10	5	
4		Flat washerΦ10	5	
5		Inner hexagon bolt M12×35	4	10.9 grade
6		Flat washerΦ12	11	
7	2290612	End cover	1	90X8
8	DQK020135	Circlip for holes	1	φ90
9		Hexagon bolt M8×30	4	
10		Spring washerΦ8	52	
11		Flat washerΦ8	36	
12	2290406	Gear box cover	1	
13	DQK010117	Circlip for shaft	1	φ40
14	NZK011308	Deep groove bearing	1	6008ZZ
15	2100104（HT)	Small gear	1	

16		Flat washerΦ8	1	
17	2101008	Driving motor	1	
18		Hexagon bolt M12×35	6	10.9 grade
19	2100103	Big gear	1	
20	2100106	End cover of box	1	
21	MFK012801	Framework oil seal	1	125-160-12
22	DQK010120	Circlip for shaft	1	φ50
23	NZK011410	Deep groove bearing	1	6210ZZ
24	2290405	Gear axle	1	
25	0260107	Rubber shock absorber	2	
26		Hexagon bolt M8×20	9	10.9grade
27		Hexagon bolt M8×25	24	10.9grade
28	2290407	Supporting plate of shock absorber	1	
29		Locknut	16	M8
30	2290613	Framework oil seal	1	72X8
31	DQK020119	Circlip for holes	4	φ72
32	0260102A	Bearing pedestal	2	
33	WZK021407	Deep groove bearing	2	6207ZZ
34	MFK010901	Framework oil seal	2	42-72-8
35	2290401	Rear roller assembly	1	
36	MFK010703	Framework oil seal	1	35-72-7
37	0260211B	Driven end cover	1	
38	DQK020117	Circlip for holes	2	Φ62
39	NZK011307	Deep groove bearing	2	6007ZZ
40	3140203A	Plate bearing support	1	
41	DQK010116	Circlip for holes	1	Φ35
42	2290402	Left support plate assembly	1	
43	2121027	Bearing cover	1	Φ62X10
44		Hexagon bolt M8×25	4	
45	1620312	Handle	1	
46		Locknut	1	M5
47		Hexagon bolt M5×35	1	
48	1622806	Coil compression spring	1	
49	2290403A	Fixed pin	1	

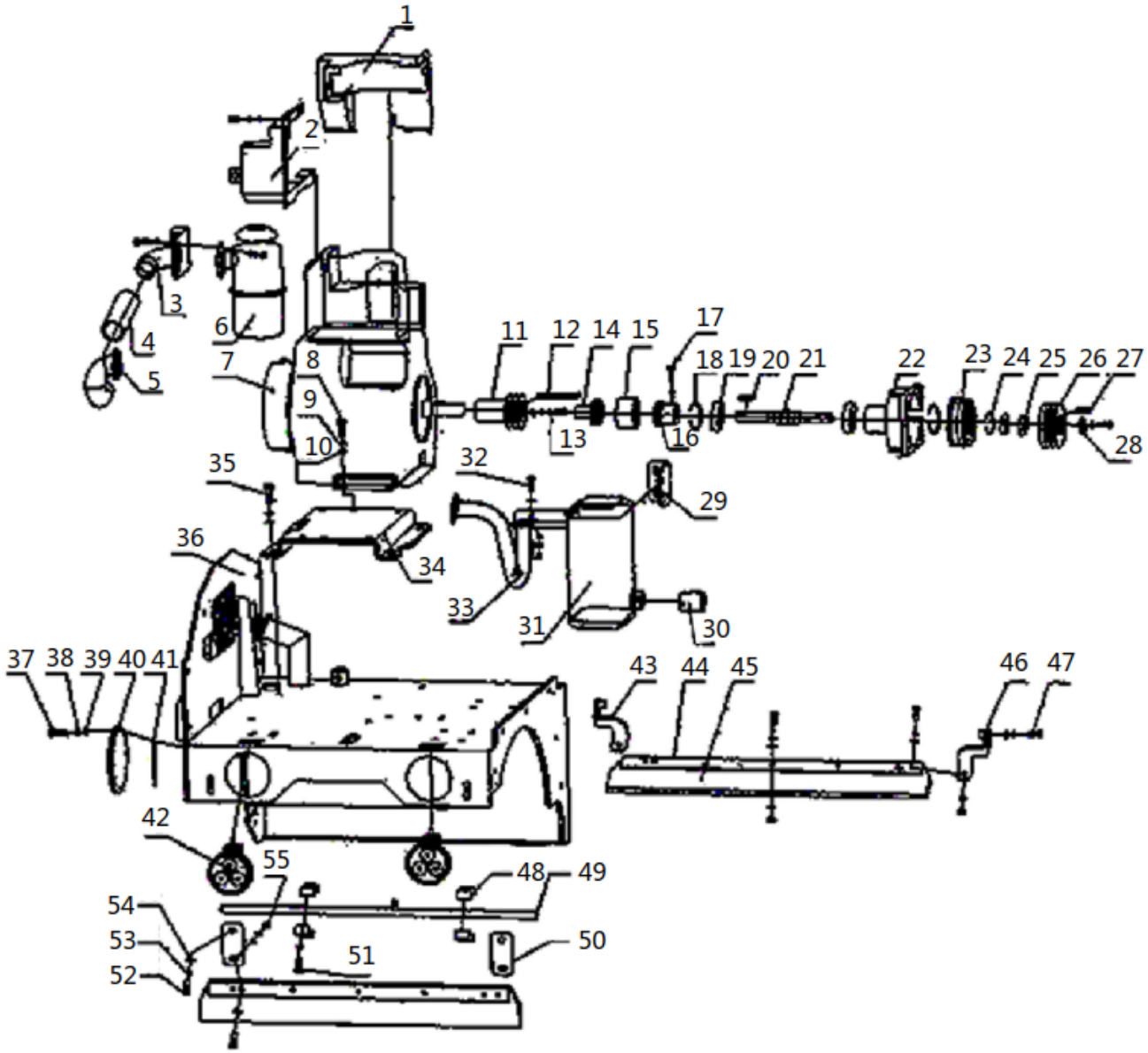
8. Hydraulic pump assembly



NO.	Code	Item	Quantity	Remark
1	2290608	Gear pump	1	
2		Outer hexagon bolt M10×20	2	
3		Spring washerΦ10	8	
4		Plate washerΦ10	8	
5	2290115	Gear pump support	1	
6		Inside hexagon bolt M6×15	6	
7		Spring washerΦ6	7	
8	2290106	Joint sleeve of gear pump	1	
9	2290113	Belt pulley	1	
10	PDK010107	Belt	2	SPZ710
11	NZK011307	Deep groove bearing	1	6007ZZ
12	2290114	Flange	1	
13	DQK010116	Circlip for bearing	1	Φ35
14	3600708	Vibration tighten pulley	1	
15	DQK010110	Circlip for bearing	2	Φ20
16	NZK011304	Deep groove bearing	1	6004ZZ
17	DQK020112	Circlip for hole	1	Φ42

18	2290129	Engine tighten axle	1	
19	2290127	Hydraulic pump support assembly	1	
20		Plate washerΦ8	1	Thicken and larger
21		Spring washerΦ8	1	
22		Outer hexagon bolt M8×20	1	
23	2132001	Hydraulic pump	1	
24	3070306	Crank arm tighten bolt	1	
25		Outer hexagon bolt M6×25	2	
26	2290112	Crank arm of hydraulic pump	1	
27	2290219	Direction control line	1	
28	NZK120102	Rod-end bearing M8	1	SI8T/K
29		Outer hexagon bolt M10×45	4	

9. Engine installation assembly

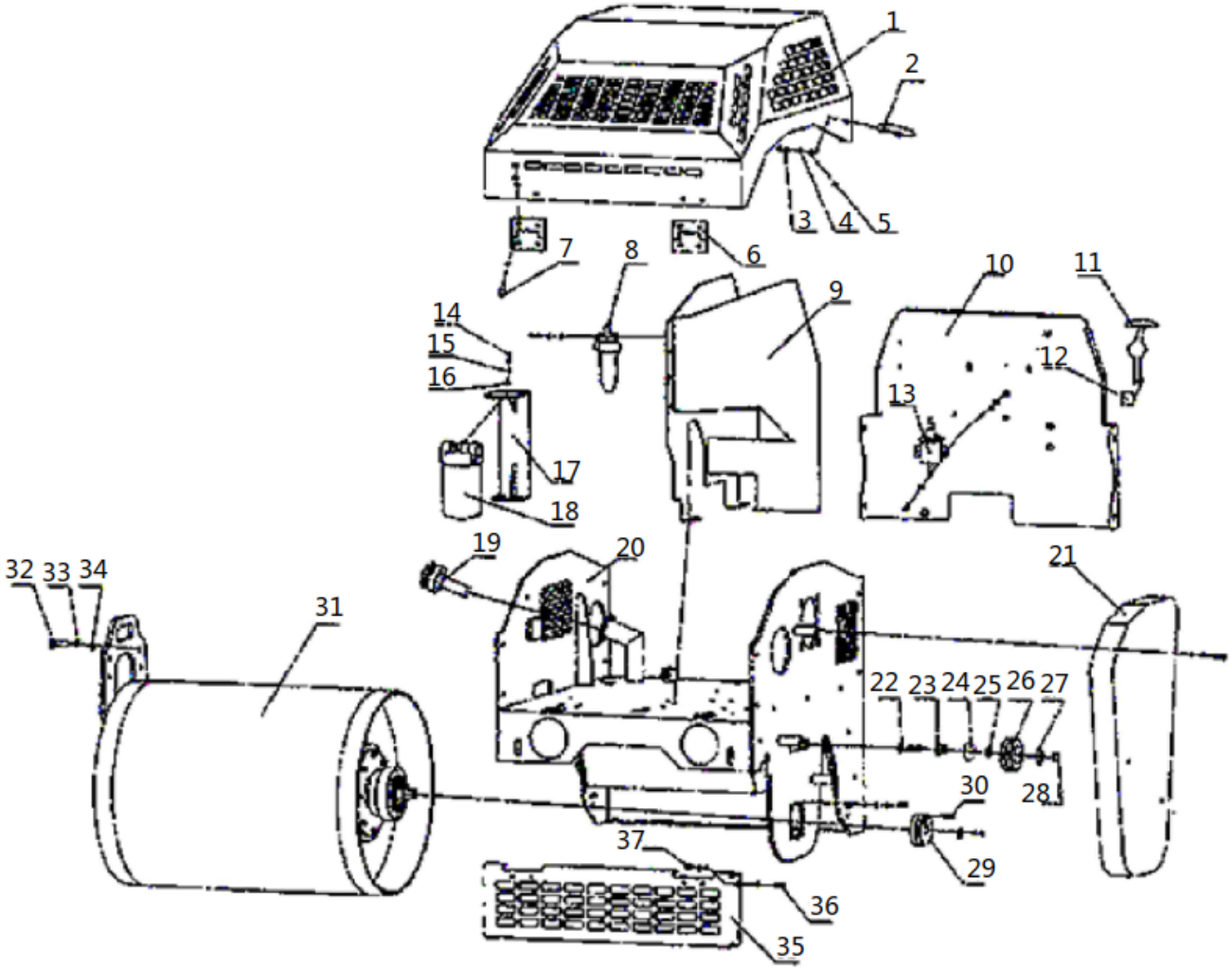


NO.	Code	Item	Quantity	Remark
1	2290124	Left fairing	1	
2	2290123	Right fairing	1	
3	2290117	Connector of air filter	1	
4	2290118	Connect pipe of air filter	1	
5	2290116	Mounting assy of air filter	1	
6	2290606	Air filter	1	
7	2290601	Engine	1	
8		Hexagon bolt M10x45	4	

9		Spring washer Φ10	8	
10		Plate washer Φ10	8	
11	2290121	Engine belt wheel	1	
12	2290152	Engine key7x90	1	
13		Hexagon bolt M8x40	1	
14	2290151	V-belt coupling	1	
15	3070418	Gear coupling	1	
16	3070428	Vibration roller coupling	1	
17		Inside hexagon bolt M8×40	1	10.9 grade
18	DQK020117	Circlip for hole	2	φ62
19	WZK011505	Deep groove bearing	2	6305ZZ
20	3531201	Key 5x20	1	
21	3070424	Driving shaft	1	
22	3070423	Vibration shaft sleeve	1	
23	3070503A	Electromagnetic clutch	1	
24	DQK020112	Circlip for hole	1	φ42
25	WZK011304	Deep groove bearing	2	6004ZZ
26	3070425	Pulley of electromagnetic clutch	1	
27	3070427	Key of drive shaft	1	5X28
28		Plate washer Φ8	1	
29	2290107	Holder of silencer	1	
30	2290119	Draft tube		
31		Silencer	1	
32		Joint pipe of Silencer	1	
33		Hexagon bolt M8x20	1	
34	2290110	Base plate of diesel engine	1	
35		Hexagon bolt M10x30	4	
36	2290101	Front frame assembly	1	
37		Hexagon bolt M6x20	16	
38		Spring washerΦ6	16	

39		Plain washerΦ6	20	
40	2290125	Cover plate of cleaning hole	2	
41	MFK020183	O-ring	2	109x3.55
42	3150405	Lamp	2	
43	2290207	Right fixed plate of scraper	1	
44	2290205	Base plate of scraper	4	
45	2290204	Scraper	2	
46	2290206	Left fixed plate of scraper	1	
47		Hexagon bolt M8×25	4	
48	3070419	Pipe clamp	4	
49	2290128	Water pipe assembly of front drum	1	
50	2290120	Front fixed plate of scraper	2	
51		Inner Hexagon bolt M6×30	4	
52		Hexagon bolt M8×30	8	
53		Spring washer Φ8	26	
54		Plain washer Φ8	31	
55		Lock nut	22	

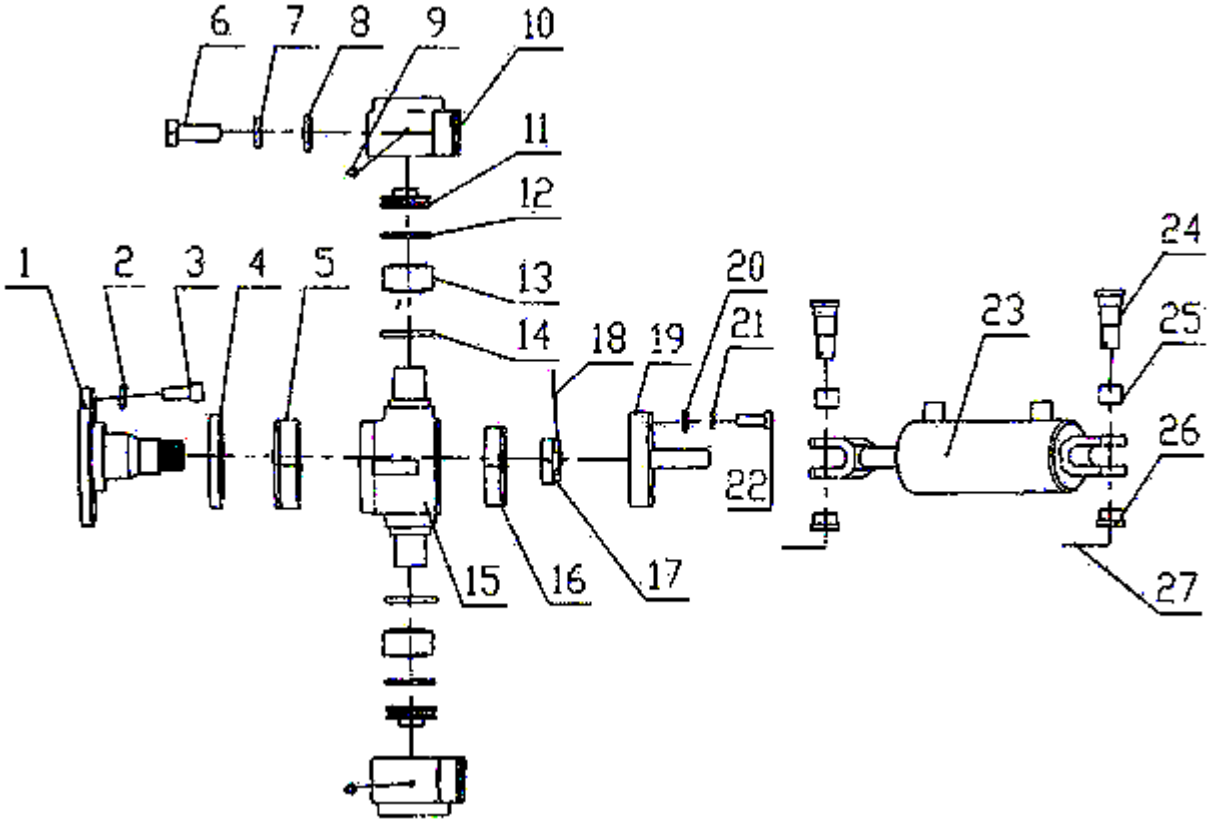
10.Front machine frame assembly



NO.	Code	Item	Quantity	Remark
1	2290109	Top cover	1	
2	3070507A	Bridge type handle	2	
3		Outer hexagon bolt M8×20	6	
4		Spring washer Φ8	16	
5		Plain washer Φ8	26	
6	2150112	Hinge	2	
7		Half round inside hexagon bolt M8×30	2	
8	3150407	Fuel filter	1	
9	2290105	Engine guide plate assembly	1	
10	2290108	Back shield assembly	1	

11	2150120	Rubber handle	2	
12	2150118	Fixed block	2	
13	3150406	Oil pump	1	
14		Outer hexagon bolt M6×20	4	
15		Spring washer Φ6	4	
16		Plain washer Φ6	6	
17	2290104	Mounting plate assembly of hydraulic filter	1	
18	2121007	Rotary filter	1	SP-06x10
19	3601005	Air filter	1	EF1-25
20	2290101	Front frame assembly	1	
21	2290111	Side shield	1	
22	3600210A	Vibration tensioned shaft	1	
23	2290130	Vibration tensioned shaft sleeve	1	
24	NZK011304	Deep groove bearing	1	6004ZZ
25	DQK010110	Circlip for shaft	1	φ20
26	3600708	Vibration tensioner	1	
27	DQK020112	Circlip for hole	1	
28		Locknut M14	1	
29	O260805	Vibration pulley	1	
30	O260108	Flat Key	1	
31		Front roller	1	See picture 1
32		Hexagon bolt M12×30	4	
33		Spring washer Φ12	4	
34		Plain washer Φ12	4	
35	2290103	Front shield	1	
36		Hexagon bolt M8×30	12	
37		Locknut M8	6	

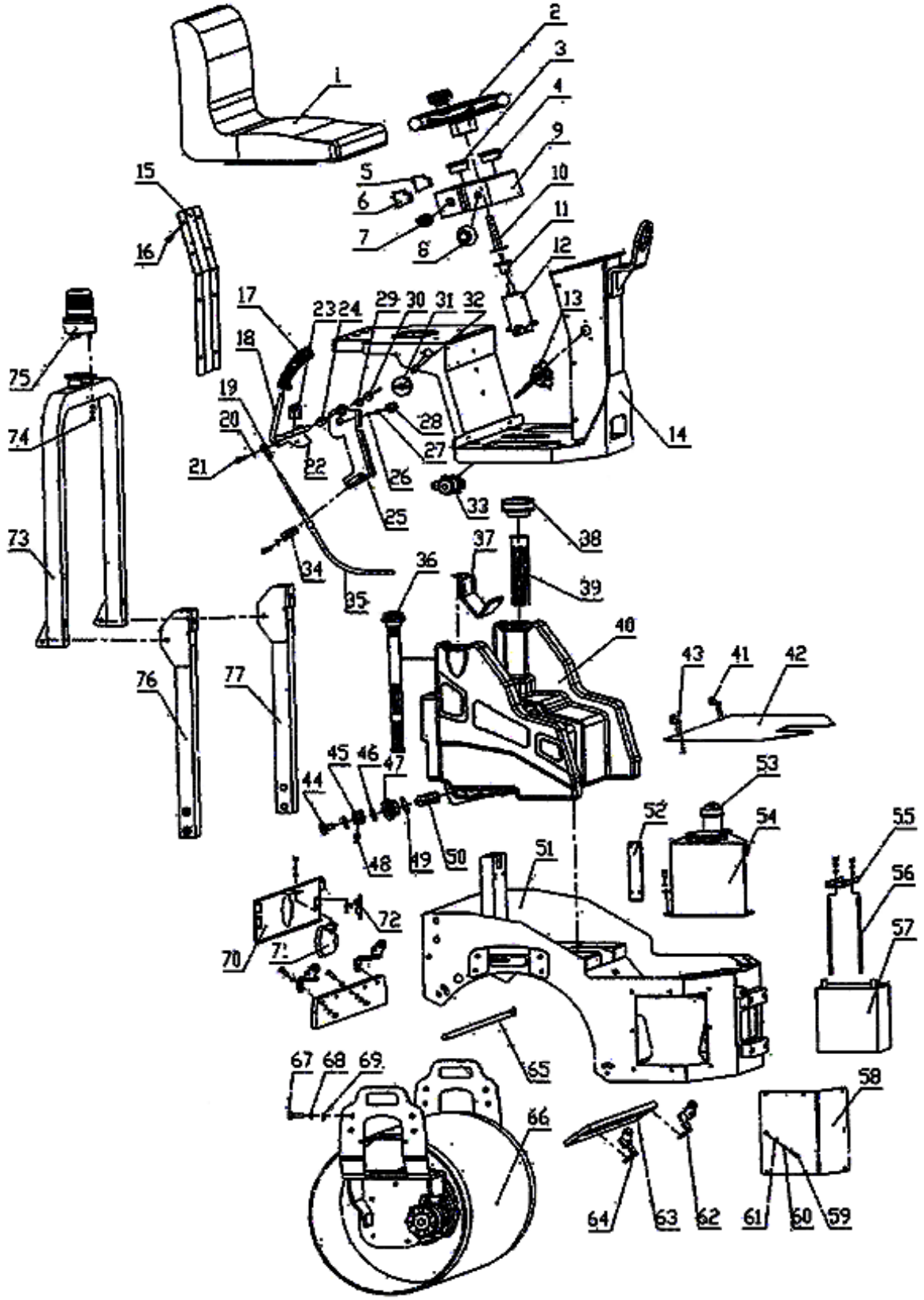
11. Articulated assembly



NO.	Code	Item	Quantity	Remark
1	2290502	Articulated shaft	1	
2		Spring washer Φ12	4	
3		Outer hexagon bolt M12×25	4	10.9 grade
4	MFK011502	Framework oil seal	1	85-70-8
5	NZK070209	NZK070209	1	33009
6		Outer hexagon bolt M16×40	4	
7		Spring washer Φ16	4	
8		Plain washer Φ16	4	
9	0040302	Oil nozzle	2	
10	2120312	Bearing support	2	
11	2120313	End cap	2	
12	MFK020165	O type ring	2	44.4 x3.1
13	NZK110331	Inner joint bearing	2	GEZ 31ES

14	MFK010902	Framework oil seal	2	62-42-8
15	2290501	Articulated shaft sleeve	1	
16	NZK070207	NZK070209	1	33007
17	2290154	Slotted nut M30 x2	1	
18	XZK020703	Split pin	1	Φ5 x50
19	2290503	Articulated connection receptacle	1	
20		Plain washer Φ10	4	
21		Spring washer Φ10	4	
22		Hexagon bolt M10×35	4	
23	2290239	Steering cylinder	1	
24	2290147	Steering shaft	2	
25	2290615	Oil-contained bearing	2	2018
26	2290148	Spacer sleeve	2	
27	XZK020303	Split pin	2	Φ3 x25

12. Rear drum assembly

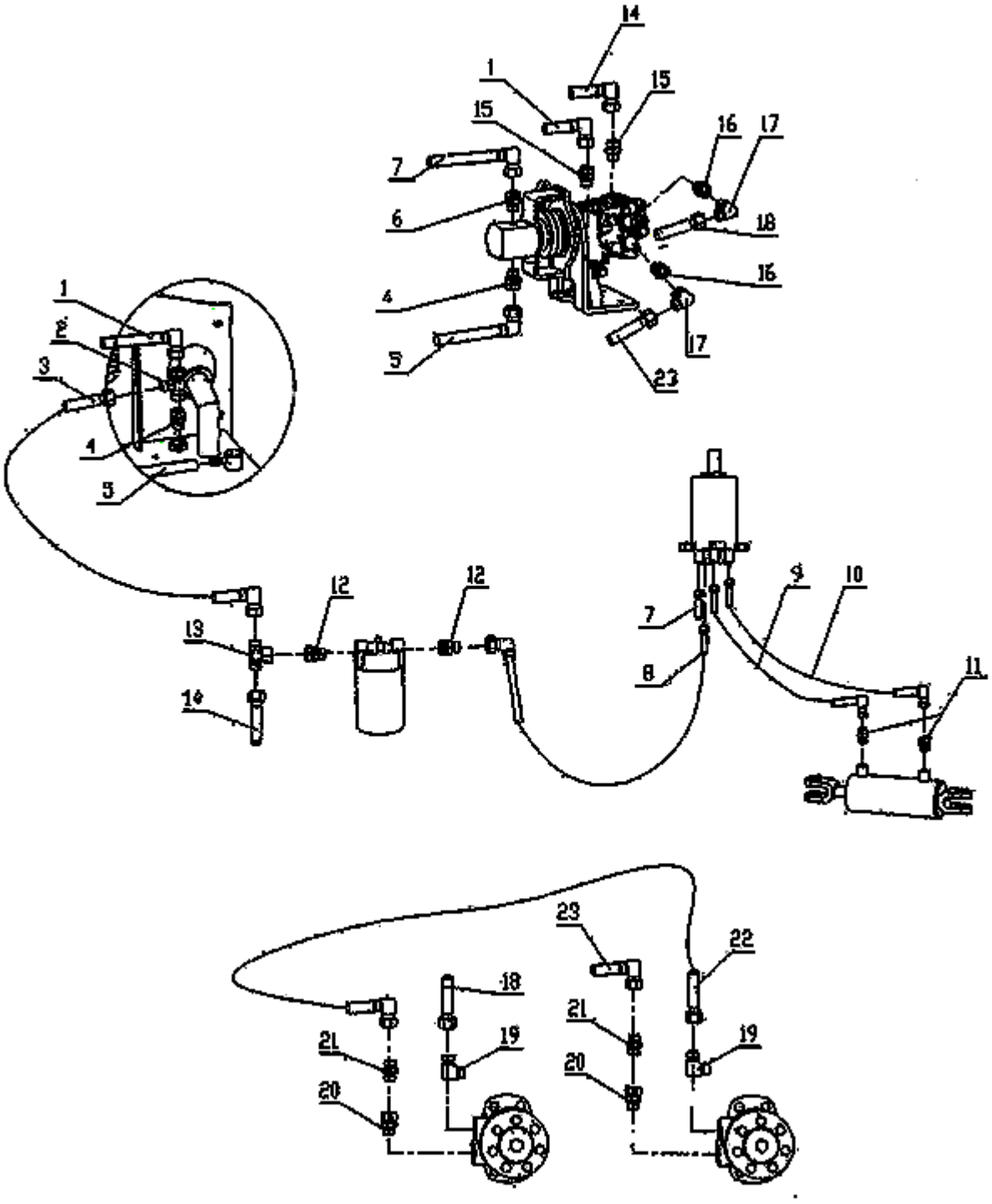


NO.	Code	Item	Quantity	Remark
1	3150408	Seat	1	
2	2121026	Steering wheel	1	
3	DDB110403	Voltage meter	1	
4	DDB050104	Timer	1	
5	2121022	Switch for working lamp	1	
6	2121030	Switch for spraying	1	
7	DFJ760114	Ignition switch	1	
8	DAN020203	Emergency stop switch	1	
9	2300105	Steering upper cover	1	
10	2290245	Spline connection shaft	1	
11	2290248	Shaft sleeve assembly	1	
12	2290611	Steering gear	1	
13		Throttle switch assembly	1	
14	2290202	Seat frame assembly	1	
15	2290213B	Steering cover plate	1	
16		Inner hexagon bolt M6×15	8	
17	2101061/2101062	Handle assembly	1	
18	2290218A	Push rod	1	
19	NZK120102	Rod end bearing	1	M8
20		Plain washer Φ8	26	
21		Outer hexagon bolt M8×25	13	
22	2290217	Direction control rod assembly	2	25.4x50x2x3.4
23	2290221A	Handle connection sleeve	1	
24	2290604	Oil-container bearing	1	1815
25	2290216	Direction plate assebly	1	
26	3070510	Steel ball	1	Φ10

27	3070208	Limit spring	1	
28	3070222	Direction pilot pin	1	
29	2290225	Direction nylon-cushion	1	
30	2290232	Fixation mat	1	
31	2290220	Handle rotate sleeve		
32	2260603	Oil-contained bearing	1	1420
33	2121029	Electromagnetic clutch	1	
34	3070206	Direction change line fixed mount	1	
35	2290219	Direction control line	1	
36	2290605	Water level gauge	1	
37	2290231	Water tank fixed plate	1	
38		Water tank cap	1	
39		Filter	1	
40	2290301	Water tank	1	
41	1672222	Hinge	2	
42	2290212	Pedal	1	
43		Sunk screw M5X15	8	
44	2290229	Water tank cap bolt	1	
45	2290228	Connect sleeve	1	
46		O type ring	2	Φ25 x2.65
47	2290227	Water drain cap	1	
48	GJK020109	Water valve corrugate	1	G1/4-Φ8
49	2290230	Rubber gasket	1	
50	1712215	Transition joint	1	
51	2290201	Rear machine frame assembly	1	
52	2290208	Liquid indicator plate	1	
53	1672254A	Fuel tank cap	1	

54	2290203	Fuel tank	1	
55	2100418	Battery pressing plate	1	
56	2290233	Drag hook	2	
57	3070505	Storage battery	1	
58	2290210	Machine frame cover plate	1	
59		Outer hexagon bolt M6×20	8	
60		Spring washer Φ6	10	
61		Plain washer Φ6	10	
62	2290206	Left fixed plate assembly of scraper	2	
63	2290204	Scraper	2	
64	2290207	Right fixed plate assembly of scraper	2	
65	2290209	Rear water tube	1	
66		Rear drum assembly	1	
67		Outer hexagon bolt M12×30	8	
68		Spring washer Φ12	8	
69		Plain washer Φ12	8	
70	2290211	Rear baffle assembly	1	
71	3150405	LED lamp	1	
72	2290607	Buckle	2	
73	2290250	Anti-rollover frame up section assembly	1	
74		Lock nut M6	5	
75	1532223	Alarm lamp	1	
76	2290252	Anti-rollover frame bottom right down section assembly	1	
77	2290251	Anti-rollover frame bottom left section assembly	1	

13.Hydraulic rubber tube



NO.	Code	Item	Quantity	Remark
1	2291811	Rubber tube assembly	1	
2	2291817	Connector	1	
3	2291806	Rubber tube assembly	1	
4	2291813	Connector	2	
5	2291801	Rubber tube assembly	1	
6	2291814	Connector	1	
7	2291802	Rubber tube assembly	1	
8	2291805	Rubber tube assembly	1	
9	2291804	Rubber tube assembly	1	
10	2291803	Rubber tube assembly	1	
11	2291815	Connector	2	
12	2291816	Connector	2	
13	2291819	Connector	1	
14	2291807	Rubber tube assembly	1	
15	2291818	Connector	2	
16	2291820	Connector	2	
17	2291827	Connector	2	
18	2291808	Rubber tube assembly	1	
19	2291821	Connector	2	
20	2291822	Connector	2	
21	2291823	Connector	2	
22	2291809	Rubber tube assembly	1	
23	2291810	Rubber tube assembly	1	