

OPERATION MANUAL



FWT40

Walk-behind Power Trowel

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	Power Trowel		
MODEL	FWT40		
Motor Model			
Note			

FOREWARD

- ◇ For your own safety and protection from bodily injuries, carefully read, understand and follow the safety instructions in this manual.
- ◇ Please operate and maintain your machine in accordance with the instructions in this manual.
- ◇ Defective machine parts are to be replaced as soon as possible.
- ◇ Keep this owner's manual handy, so you can refer to it at any time.
- ◇ No part of this publication may be reproduced without written permission.
- ◇ We expressly reserve the right to technical modifications- even without express due notice - which aim at improving our machines or their safety standards.

FEATURE

FWT40 Walk-behind Power Trowel can be used in surface finishing of concrete road, terrace, boatyard, airport and floor etc.

Deadman switch design provide safe. A sophisticated system to protect the operator from an out-of-control spinning handle. When the operator is using a walk-behind power trowel and let go of the safety sensor detects the motion of the handle and stops the engine before the handle reaches a 45-degree rotation. The handle can be adjusted due to the stature of operator, and it offers maximum control and comfort for the operation. The alloy blades which have get heat treatment are worn well. Low center of gravity provides workers with safe and stable operation.

SAFETY PRECAUTIONS

1. Before starting operation, the operator has to check that all control and safety devices function properly.
2. Always keep unauthorized, inexperienced, untrained people away from

this machine.

3. Rotating and moving parts will cause injury if contacted. Make sure guards are in place. Keep hands and feet away from moving parts.
4. The engine must always be stopped before attempting any repair or adjustments. Ignition switch should be off.
5. To avoid slipping and loss of control when starting the trowel, the operator should maintain good footing. It is recommended that the operator wear safety shoes for added protection.
6. Be careful when working around pipes or ducts protruding from the floor or slab edges. If the trowel blades hit such obstacles, damage to the machine or possible operator injury may result.
7. When starting the machine, do not exceed 1/3 throttle position. A higher setting may cause the Centrifugal clutch to engage and the handle to rotate.
8. Be careful not to come in contact with the muffler when the engine is hot, serious burns may result!
8. Over time, the blades will form a sharp edge. Be careful when handling the old blades.
9. Gasoline is extremely flammable, and gasoline vapor can explode. Refuel outdoors, in a well-ventilated area, and keep other flames and sparks away.
10. Do not fill the fuel tank completely. After refueling, tighten the fuel tank cap securely.
11. Before beginning your preoperational checks, be sure the engine is level and the engine switch is in the OFF. The max. gradient of 20° must not be exceeded when the engine working.
12. Don't allow children to operate the engine. Keep children and pets away from the area of operation.
13. After each use your machine should be cleaned to remove any dust and

debris from the undercarriage and surrounding components.

14. When the machine start working you should be check the clutch whether or not wear and tear. If the clutch will have 3/4 worn and torn, you must change new clutch-ring.
15. Check that all shields and covers are in place, and all nuts, bolts, and screw are tightened when the machine working. Make sure put the cable while the machine working.

MAINTENANCE RECORD

Due to the nature and environment of use, Walk-behind Power Trowels could be exposed to severe operating conditions. Some general maintenance guidelines will extend the useful life of your trowel.

1. The initial service for your trowel should be performed after 25 hours of use, at which time your mechanic (or authorized repair shop) should complete all of the recommended checks in the schedule below. The chart is handy for keeping a record of the maintenance performed and the parts used for servicing your trowel.
2. Regular service according to the schedule below will prolong the life of the Walk-behind Power Trowel and prevent expensive repairs.
3. Keeping your Walk-behind Power Trowel clean and free from debris is the single most important regular maintenance operation, over and above the checks in the service schedule above, that can be performed. After each use your Walk-behind Power Trowel should be cleaned to remove any dust and debris from the undercarriage and surrounding components. Use of a power washer will make clean up quick and easy, especially if a non-stick coating was applied prior to use.
4. In the Service Schedule below, items that should be checked, replaced or adjusted are indicated by "○" in the appropriate column. Not all

Walk-behind Power Trowel models include the same features and options and as such not all service operations may have to be performed. For ease of recording place a checkmark (√) through the "○" when the item is complete. If an item is not required or not complete place an "x" through the "○" in the box.

CATIONS! Over time, if the blades will have 3/4 worn and torn, you must change new trowel blades.

MAINTENANCE SCHEDULE

Routine Service Intervals		Each use	After 1.5 mont hs or 50hrs	Each 3 mont hs or 100hrs	Each 6 mont hs or 200hrs	Each 9 mont hs or 300hrs	Each 12 mont hs or 400hrs
General Inspection:							
Guards	Check		○	○	○	○	○
Warning stickers	Check		○	○	○	○	○
Test run	Check operation		○	○	○	○	○
Controls:							
Dead-man switch operation	Check	○	○	○	○	○	○
Pitch control assembly	Check	○	○	○	○	○	○
	Lubricate		○	○	○	○	○
Engine:							
Engine oil	check	○	○	○	○	○	○



	level						
	Change		○		○		○
Engine oil filter	Replace				○		○
Oil cooler	Clean			○	○	○	○
Cooling Fins	Clean		○	○	○	○	○
Air cleaner	Check-clean	○	○	○	○	○	○
	Replace						○
Air Intake Line	Check				○		
	Replace						2 yrs
Fan Belt	Check tightness				○		○
	Replace						500 hrs
Valve clearance	Check-adjust				○		○
Fuel filter	Check & Clean			○	○	○	○
	Replace				○		○
Fuel Tank	Clean						500hrs
Engine wiring	Check						○
Drive Train:							
Clutch/Pulley operation	Check	○	○	○	○	○	○



Spider plate assembly	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Lubricate				<input type="radio"/>		<input type="radio"/>
V-Belt	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blades	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gearbox:							
Gearbox oil	Check level				<input type="radio"/>		<input type="radio"/>
	Check	<input type="radio"/>			<input type="radio"/>		<input type="radio"/>
Gearbox breathers	Check operation			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

OPERATION ELEMENTS

V-belt is driven gearbox by engine, and then transmit torque to trowel and the machine working. The trowels can be adjusted due to the stature of operator through pitch control assembly. Dead man switch designs provide safe and stable operation. Holding the deadman lever before start the engine, and loosening deadman lever the machine will stop working.

OPERATION (Floating)

When the slab has set sufficiently firm that the operator's footprint leaves a very slight depression on the surface of the slab, it is ready for the floating operation.

Guiding the machine on the slab is very simple; a slight upward lift of the handle causes the machine to travel to the left. Holding the handle in the neutral position, will slowly cause the machine to spin in one spot. Slight downward pressure on the handle cause the machine to the travel to the right. Best results are obtained by covering approximately 4" on each turn.

In other words, let the machine move right or left, backwards or forwards, approximately 4" with each revolution of the trowels. To fill a hole or cut down hump, move the unit back and forth over the problem area.

Under normal operating conditions the machine should cover as much as 1000 sq. ft. in about 15 minutes. It is recommended that a slight tension on the trowel control cable, (but not a definite tilt), during the floating operation will cause the machine to operate much smoother. After the floated slab has set sufficiently, it is ready for the finishing operation.

CAUTION! Do not let the machine stand in one spot on the soft cement. Lift from the slab when the floating operation is complete.

OPERATION (Finishing)

When starting the finishing operation, never set the trowels up over 1/4" pitch.

After the floating operation, the first thing to do is to remove the floating disc from the blades. Clean the blades, spider plate and disc from cement paste collected during the floating operation. Increase the blade pitch up to a maximum of 1 cm for the first finishing operation and then continue to increase the pitch on the following finishing operations. Continue the finishing passes until you obtain the desired floor finish. The time required between each finishing pass is again dependent on the weather conditions and water content of the concrete etc. If some areas of the concrete set/harden too fast you may apply a small amount of water using a hand brush as an aid to achieving the finish.

STARTING & STOPPING PROCEDURE

1. Before operation checks

- a. Check the oil level: Before beginning your preoperational checks, be sure the engine is level and the engine switch is in the OFF.

Remove the filler cap/dipstick and wipe it clean. Insert and remove the dipstick without screwing it into the filler hole. Check the oil level shown on the dipstick. If the oil level is low, remove the oil filler cap, and fill to the upper limit mark on the dipstick with recommended oil. Screw in the filler cap/dipstick securely.

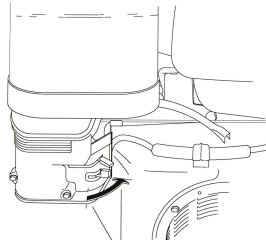
SAE 10W-30 is recommended for general use. The engine is certified to operate on unleaded gasoline with a research octane rating of 90 or higher. Unleaded gasoline produces fewer engine and spark plug deposits and extends exhaust system life. Never use stale or contaminated gasoline or an oil/gasoline mixture. Avoid getting dirt or water in the fuel tank.

- b. Check air filter: Remove the air cleaner cover and inspect the filter. Clean or replace dirty filter elements. Always replace damaged filter elements. If equipped with an oil-bath air cleaner, also check the oil level.

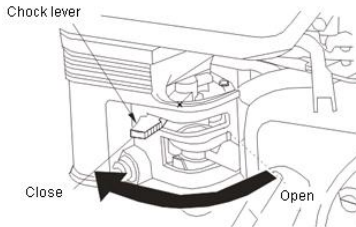
Notice! Running the engine with a low oil level can cause engine damage.

2. Start engine/Stopping engine procedure

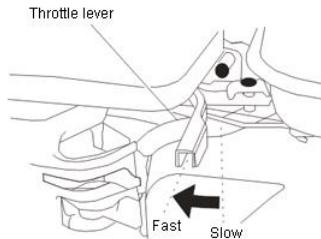
- a. Move the fuel valve lever to the ON position.



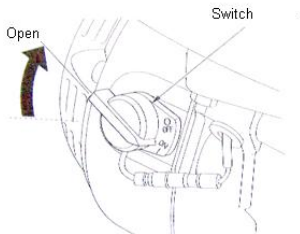
- b. Move the choke lever to the CLOSE position. If the engine is warm or the air temperature is high, move the control lever away from the OPEN position as soon as the engine starts.



c. Move the throttle lever away from the SLOW position, about 1/3 of the way to toward the FAST position.

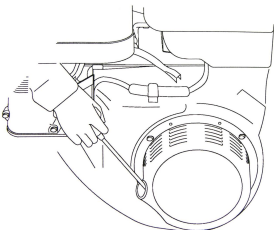


d. Turn the engine switch to the ON position.



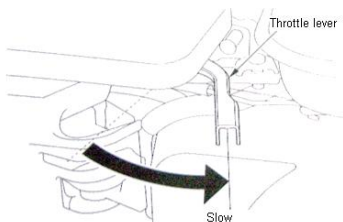
e. Pull the starter grip lightly until you feel resistance, then pull briskly. Return the starter grip gently.

CAUTION! Do not allow the starter grip to snap back against the engine. Return it gently to prevent damage to the starter.

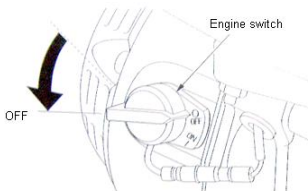


3. Stopping the engine

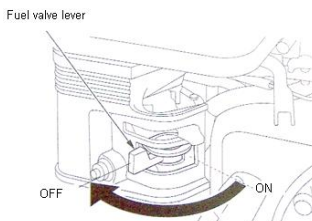
- a. Move the throttle lever to the SLOW position.



- b. Turn the engine switch to the OFF position.



- c. Turn the fuel valve lever to the OFF position.



4. Setting engine speed

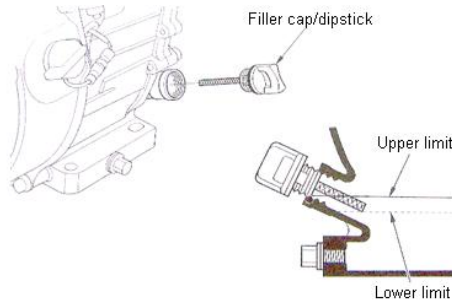
Position the throttle lever the desired engine speed.

LUBRICATION

1. Engine oil level check

Check the engine oil level with the engine stopped and in a level position.

1. Remove the filler cap/dipstick and wipe it clean.
2. Insert and remove the dipstick without screwing it into the filler neck. Check the oil level shown on the dipstick.
3. If the oil level is low, fill to the edge of the oil filler hole with the recommended oil.
4. Screw in the filler cap/dipstick securely.



2. Engine oil change

Drain the used oil while the engine is warm. Warm oil drains quickly and completely.

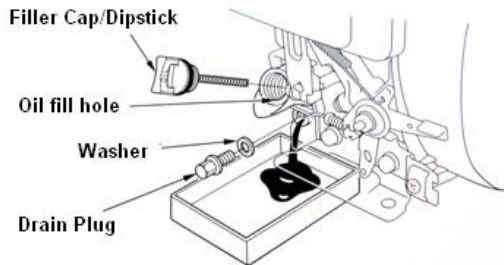
1. Place a suitable container below the engine to catch the used oil, then remove the filler cap/dipstick, drain plug, and washer.
2. Allow the used oil to drain completely, then reinstall the drain plug, washer, and tighten drain plug securely.

Notice! Please dispose of used motor oil in a manner that is compatible with the environment. We suggest you take used oil in a sealed container to your local recycling center or service station for reclamation. Do not throw it in the trash; pour it on the ground, or down a drain.

3. With the engine in a level position, fill to the outer edge of the oil filler hole with the recommended oil.

Notice! Running the engine in a low oil level can cause engine damage.

4. Screw in the filler cap/dipstick securely.



SPARK PLUGS

Recommended spark plugs: BPR6ES (NGK) W20EP-U W20EPR-U (ND)

For good performance, the spark plug must be properly gapped and free of deposits.

Notice! An incorrect spark plug can cause engine damage.

1. Disconnect the spark plug cap, and remove any dirt from around the spark plug area.
2. Remove the spark plug with a 13/16-inch spark plug wrench.
3. Inspect the spark plug. Replace it if the electrodes are worn heavy carbon buildup is found, or if the insulator is cracked or chipped.
4. Measure the spark plug electrode gap with a suitable gauge. The gap should be 0.028-0.031 in (0.70 - 0.80 mm). Correct the gap, if necessary, by carefully bending the side electrode.
5. Check that the spark plug washer is in good condition. Install the spark plug carefully, by hand, to avoid cross-threading.
6. After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the sealing washer.
7. When installing a new spark plug, tighten 1/2 turn after the spark plug

seats to compress the washer.

8. After the spark plug seats, tighten with a 13/16-inch spark plug wrench to compress the sealing washer. If reinstalling the used spark plug, tighten 1/8 - 1/4 turn after the spark plug seats. If installing a new spark plug, tighten 1/2 turn after the spark plug seats.

9. Attach the spark plug cap.

NOTICE! The recommended spark plug has the correct heat range for normal engine operating temperatures. A loose spark plug can overheat and damage the engine. Over tightening the spark plug can damage the threads in the cylinder head.

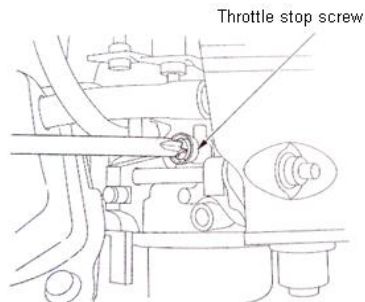
CARBURETTOR ADJUSTMENT

1. Start the engine outdoors, and allow it to warm up to operating temperature.

2. Move the throttle lever to its slowest position.

3. Turn the throttle stop screw to obtain the standard idle speed.

Standard idle speed: 1440r/min



AIR FILTER SERVICE

A dirty air filter will restrict air flow to the carburetor, reducing engine performance. If you operate the engine in very dust areas, clean the air

filter more often than specified in the MAINTENANCE SCHEDULE.

WARNING! Never use gasoline or low flammable point solvents for cleaning the air cleaner element. A fire or explosion could result.

NOTICE! Operating the engine without an air filter element, or with a damaged air filter element, will allow dirt to enter the engine, causing rapid engine wear.

1. Remove the wing nut from the air cleaner cover, and remove the cover.
2. Remove the wing nut from the air filter, and remove the filter.
3. Remove the foam air filter element from the paper filter.
4. Inspect both air filter elements, and replace them if they are damage.
5. Paper air filter element: Tap the filter element lightly several times on a hard surface to remove excess dirt, or blow compressed air through the filter element from the inside out. Never try to brush the dirt off; brushing will force dirt into the fibers.
6. Foam air filter element: Clean in warm soapy water, rinse, and allow to drying thoroughly. Or clean in nonflammable solvent and allow to drying. Dip the filter element in clean engine oil, and then squeeze out all excess oil. The engine will smoke when started if too much oil is left in the foam.

STORAGE

The following steps should be taken to prepare your Walk-behind Power Trowel for extended storage.

1. Close fuel shut off valve.
2. Siphon excess gasoline from tank.
3. Start engine until it stops from lack of fuel. This will use up all the fuel in the carburetor and prevent formation of deposits due to evaporation of fuel.
4. Remove spark plug and pour 2 oz. of SAE-30 or SAE-40 motor oil into the cylinder. Slowly crank the engine 2 or 3 times to distribute the oil

throughout the cylinder. This will help prevent rust during storage. Replace spark plug.

5. Store the unit in an upright position in a cool, dry, well ventilated area.

TROUBLESHOOTING

1. WON'T START

- ※ Throttle fully open
- ※ Hand lever wire broken
- ※ No gas
- ※ Dirty gas
- ※ No oil
- ※ Gas filter plugged
- ※ Gas line plugged
- ※ Hole in gas line
- ※ Gas supply valve turned off
- ※ Dead-man safety switch is off
- ※ Safety switch wire or connectors not making good contact
- ※ Other engine problems (Refer to engine manual)

2. STARTS BUT NO HIGH SPEED

- ※ Engine problems
- ※ Throttle cable broken or seized
- ※ Throttle lever and connectors loose or out of adjustment
- ※ Clutch shoes worn

3. STARTS AT HIGH SPEED, WON'T SLOW DOWN

- ※ Same as above

4. ENGINE WON'T STOP

- ※ Safety switch, wire or connectors not making good contact
- ※ Micro-switch burnt out

5. ENGINE STARTS BUT WON'T TURN TROWELS AT ANY SPEED

- ※ Clutch seized
- ※ No weights in clutch
- ※ Wrong belt
- ※ Broken or missing key
 - Clutch seized
 - Pulley
 - Worm gear (countershaft)
 - Main gear
 - Spider plate
- ※ Gearbox seized

6. TROWELS TURN, ENGINE AT IDLE

- ※ Idle too fast
- ※ Belt too tight
- ※ Clutch seized
- ※ Pulley out of alignment

7. TROWELS BLADES WEARING UNEVENLY

- ※ Spider plate seized
- ※ Arms bent
- ※ Adjusting screws (carriage bolts) incorrectly set
- ※ Floating disc not evenly attached to the blades

8. MACHINE JUMPS ON FLOOR

- ※ Concrete hardened on bottom of spider plate
- ※ Trowels unevenly worn/bent
- ※ Spider plate seized
- ※ Spider plate loose
- ※ Trowel arms bent
- ※ Adjusting screws (carriage bolts) incorrectly set
- ※ Main shaft bent

9. PITCH CONTROLS WILL NOT OPERATE BLADES

- ※ Cable broken or out of adjustment
- ※ Pressure plate assembly contaminated with concrete debris
- ※ Slot screw missing (under-side of handle)
- ※ Spider plate seized
- ※ Pressure plate and/or yoke arm broken or badly worn
- ※ Hand crank adjuster malfunctioning

10. BELT WEARING RAPIDLY

- ※ Belt is too tight
- ※ Pulley out of alignment
- ※ Wrong belt/defective belt
- ※ Clutch sticking
- ※ Gearbox seizing

11. OIL LEAKS

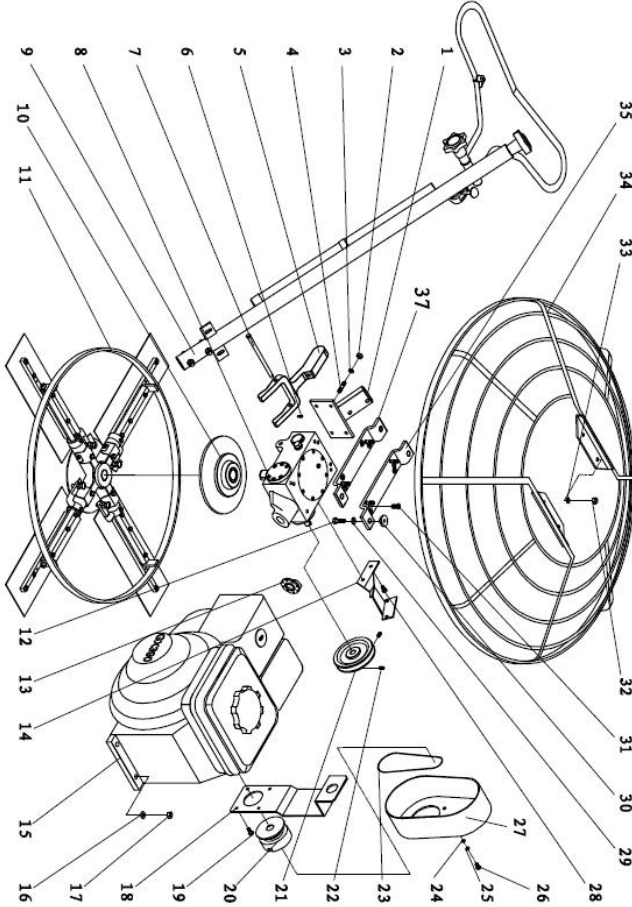
- a. Top of gearbox
 - ※ Gearbox seal worn
 - ※ Engine leaks
 - ※ Too much oil in gearbox
- b. At main shaft or countershaft
 - ※ Shaft and/or seal worn
 - ※ Retaining screw(s) loose

12. TROWEL BLADES WILL NOT TURN

- ※ Yoke arm broken
- ※ Key sheared
- ※ Gearbox malfunction

Diagram

1. Walk-behind power trowel assembly

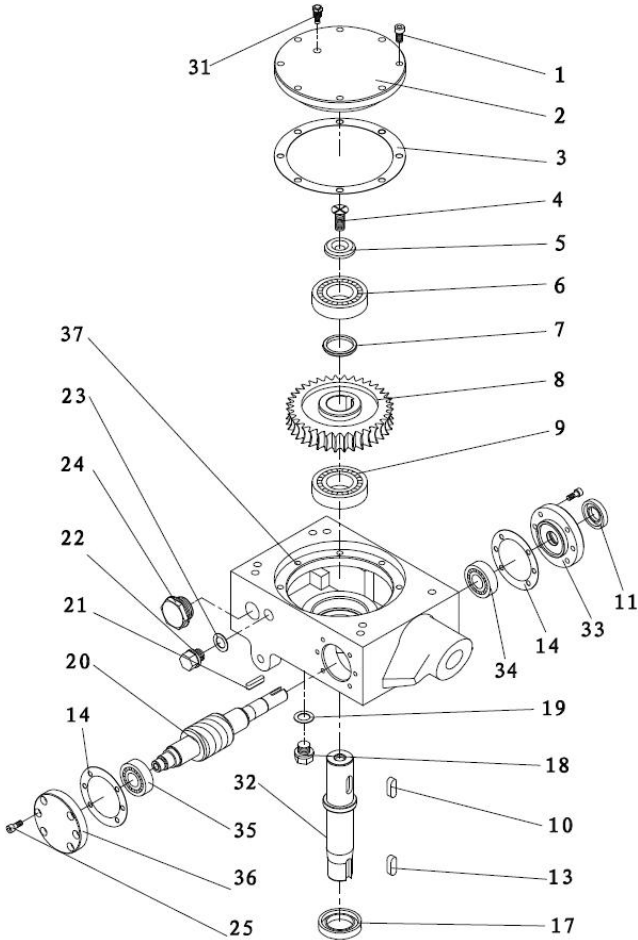


Item	Part No.	Part name	Qty
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1	10001	Handle bracket	1
2	10002	Lock Nut M10	4
3	10003	Washer 10	4
4	10004	Stud M10×45	4
5	10005	Yoke arm	1
6	10006	Retaining ring	1
7	10007	Pin	1
8	10008	Gearbox assembly	1
9	10009	Handle assembly	1
10	10010	Pressure plate assembly	1
11	10011	Spider plate assembly	1
12	10012	Bolt M10×35	4
13	10013	Releaser hood	1
14	10014	Belt-mounting plate	1
15	10015	Engine GX270	1
16	10016	Washer 10	4
17	10017	Lock Nut M10	4
18	10018	Hoist hook	1
19	10019	Bolt 5/16"×20	4
20	10020	Clutch B	1
21	10021	Pulley	1
22	10022	Screw M8×16	2

23	10023	Belt B28	1
24	10024	Washer 8	2
25	10025	Gasket 8	2
26	10026	Bolt M8×16	2
27	10027	Belt guard	1
28	10028	Bolt M8×16	2
29	10029	Washer 10	4
30	10030	rubber mat	4
31	10031	Screw M10×20	8
32	10032	Lock Nut M10	4
33	10033	Washer 10	4
34	10034	Guard ring	1
35	10035	Mounting rails I	1
37	10037	Mounting rails II	1

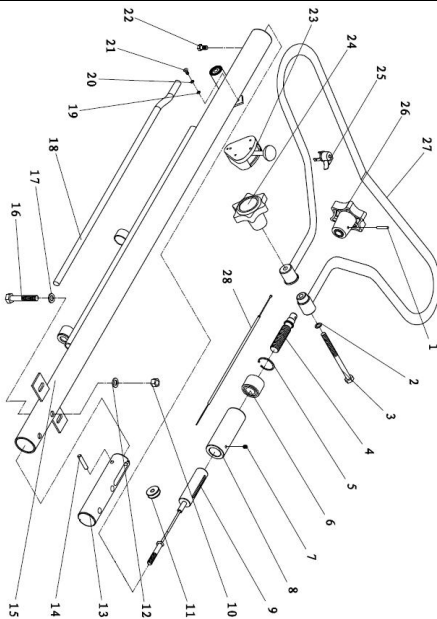
2. Gearbox assembly



Item	Part No.	Part name	Qty
1	100801	Screw M8x16	8
2	100802	Large Flange	1
3	100803	Large-Flange washer	1

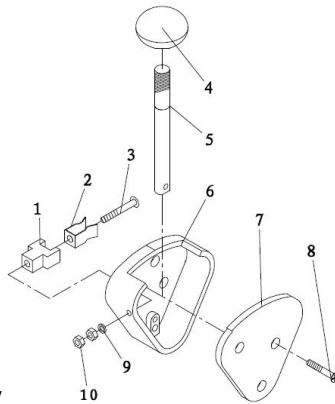
4	100804	Screw M12x25 LF	1
5	100805	Washer	1
6	100806	Bearing 30207	1
7	100807	Spacer	1
8	100808	Worm Gear	1
9	100809	Bearing 207	1
10	100810	Key 10x8x28	1
11	100811	Oil Seal NAK20x40x7	1
13	100813	Key 10x8x28	1
14	100814	Washer	Some
17	100817	Oil Seal NAK35x54x8	1
18	100818	Drain plugM16x1.5	1
19	100819	Washer 16 (Cu)	1
20	100820	Worm Shaft	1
21	100821	Key 6x6x32	1
22	100822	Fill plug M16x1.5	1
23	100823	Washer 16 (Cu)	1
24	100824	Sight Plug	1
25	100825	Screw M6x16	12
31	100831	Relief Valve	1
32	100832	Main Shaft	1
33	100833	End Cap	1
34	100834	Bearing 30304	1
35	100835	Bearing 304	1
36	100836	Flange	1
37	100837	Gearbox	1

3. Handle assembly



Item	Part No.	Part name	Qty
1	1000901	Pin 5×35	1
2	1000902	Gasket 10	1
3	1000903	Bolt M10×150	1
4	1000904	Threaded rod	1
5	1000905	Retaining ring 35	1
6	1000906	Bearing 51203	1
7	1000907	Screw M6×8	1
8	1000908	Bushing	1
9	1000909	Throttle cable	1
10	1000910	Lock Nut M10	2
11	1000911	Pulley	1
12	1000912	Washer 10	2

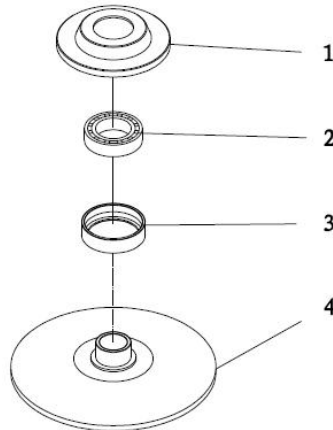
13	1000913	Support block	1
14	1000914	Pin	1
15	1000915	Rigid handle	1
16	1000916	Bolt M10×80	2
17	1000917	Gasket 10	2
18	1000918	Carry bar	1
19	1000919	Gasket 5	2
20	1000920	Washer 5	2
21	1000921	Screw M5×12	2
22	1000922	Bolt M8×16	1
23	1000923	Deadman switch	1
24	1000924	Wheel I	1
25	1000925	Throttle control	1
26	1000926	Wheel II	1
27	1000927	Handle	1
28	1000928	Cable-throttle	1



4. Deadman switch assembly

Item	Part No.	Part name	Qty
1	100092201	Washer	1
2	100092202	Washer	1
3	100092203	Screw	1
4	100092204	Sphere	1
5	100092205	Lever	1
6	100092206	Switch box	1
7	100092207	Switch cover	1
8	100092208	Screw	3
9	100092209	Gasket	2
10	100092210	Nut	2

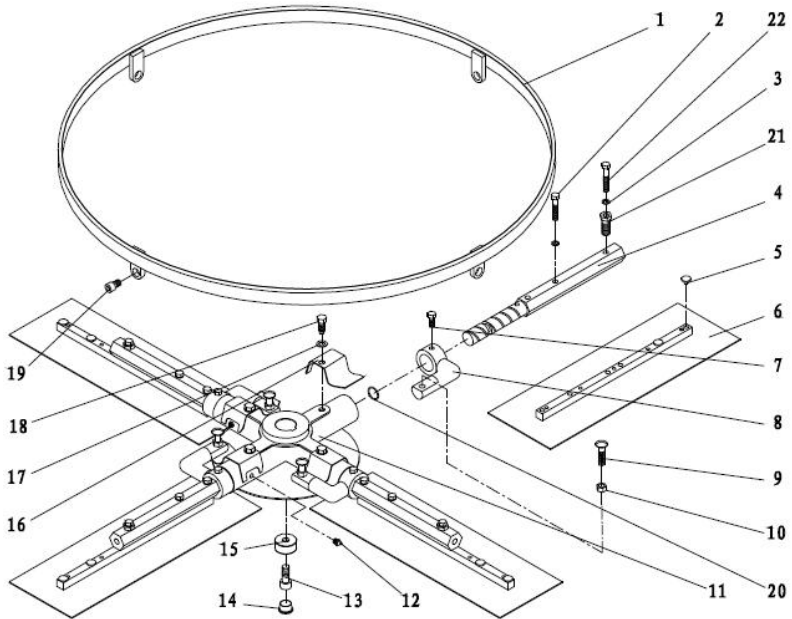
5. Pressure plate assembly



Item	Part No.	Part name	Qty
1	1001001	Pressure plate cap	1
2	1001002	Bearing 51209	1

3	1001003	Bushing	1
4	1001004	Pressure plate	1

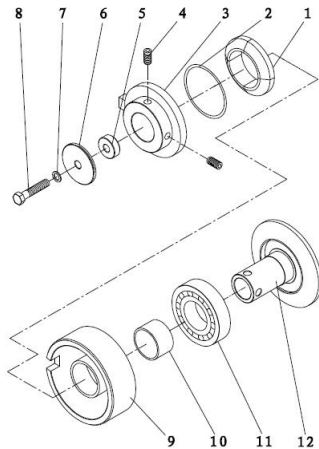
6. Spider plate assembly



Item	Part No.	Part name	Qty
1	1001101	Stabilizer ring	1
2	1001102	Bolt M8×45	8
3	1001103	Gasket 8	12
4	1001104	Trowel arm	4
5	1001105	Bushing	8

6	1001106	Trowel blade assembly	4
7	1001107	Bolt M8×16	4
8	1001108	Lift lever	4
9	1001109	Carriage bolt	4
10	1001110	Nut M10	4
11	1001111	Spider plate	1
12	1001112	Grease fitting	4
13	1001113	Screw M12×30	1
14	1001114	Cap plug	1
15	1001115	Retainer	1
16	1001116	Spring	4
17	1001117	Washer 10	4
18	1001118	Bolt M10×25	4
19	1001119	Screw M10×16	4
20	1001120	○-ring 20×2.4	4
21	1001121	Bushing	4
22	1001122	Bolt M8×50	4

7. Clutch assembly



Item	Part No.	Part name	Qty
1	1002001	Clutch-ring	4
2	1002002	Spring	1
3	1002003	Cover	1
4	1002004	Screw M8×16	2
5	1002005	Bushing	1
6	1002006	Spacer	1
7	1002007	Gasket 8	1
8	1002008	Bolt 5/16"×40	1
9	1002009	Friction Wheel	1
10	1002010	Lubrication bearing	1
11	1002011	Bearing	1
12	1002012	Friction Wheel B	1