

TYPHON

THUNDER VI Seat-mounted skid steer loader

--petrol version



Instructions for use and maintenance guide

Machine Serial Number:

Engine Serial Number:

Information for Customers

Make sure you read the instructions in this manual carefully to keep the machine running efficiently. The manual describes how to operate and maintain the skid steer loader. All operating instructions are for reference only. The words "CAUTION", "WARNING" or "DANGER" can be found throughout this manual. It is important that you read the instructions given after the words carefully to avoid the possibility of personal injury or damage to the machine.



The word "Danger" is the most important, indicating that failure to take the correct precautions could result in serious injury to the user, or even a high likelihood of death.



The word "warning" is generally used to indicate a potential hazard that could result in serious personal injury.



The word "CAUTION" is often used to indicate hazards that could result in minor injuries or equipment damage.

The left-hand side and the right-hand side are defined by the direction of travel in the skid steer loader operation. The work attachment end is referred to as the "head" and the operator's end as the "tail".

NOTE: Continuous and full improvement of the product will be made in accordance with our own policy. The information, specifications and illustrations in this manual are based on information valid at the time of printing. Therefore, the right is reserved to make design changes and improvements at any time, provided that it is believed that the efficiency of the machine can be improved, and there is no obligation to incorporate such improvements into any machine already shipped or in use.

Skid Steer Loader Safety Regulations

I 、 Daily pre-operation checks before operation

1. Check that all parts of the machine are in good condition and there is no looseness or oil leakage.
2. Check that the machine's power supply, cables and other electrical equipment are in good condition and are not broken or aged.
3. Check whether the hydraulic system of the machine is normal, and whether there is any oil leakage or breakage in the oil pipe and oil cylinder.
4. Check the machine's travelling system for compliance, wear and tear, cracks, etc.
5. Check the cleanliness of the driving console to ensure that it is free of debris and safety hazards.

II 、 Operational safety regulations

1. Operator requirements

- 1.1. Operators must be professionally trained and familiar with the performance of the machine, operating procedures and safety precautions.
- 1.2. Operators must wear complete personal protective equipment, such as helmets, safety shoes, protective clothing, etc.
- 1.3. The operator must comply with the specified operating procedures and must not operate in violation of regulations.

- 1.4. Operators must be aware of emergency measures and be able to handle simple emergencies.
- 1.5. The operator must be able to use the various functions of the machine proficiently, including lifting, rotating and travelling.

2. Before starting:

2.1 Fixed seat belts

2.2 It is necessary to make sure that there are no people working around the machine, and at the same time press the horn and sound the siren to remind the surrounding people to stand in a safe place before starting the machine.

3. Operations must be done in a way that:

3.1 No part of the body must leave the driver's seat while the operation is in progress, and before leaving the driver's seat, the bucket must be lowered to the ground or the boom safety lever must be locked and the engine switched off.

3.2 When shovelling materials, the speed of the vehicle should be reduced to below 4km/h. When working on rough ground, when the bucket is full, slow down as much as possible to avoid losing control or even overturning.

3.3 During loading operations and transport, the bucket should be placed as low as possible to keep the driver's field of vision open and to maintain the smoothness of the machine.

3.4 You can't steer with the moving arm raised high, or you'll be prone to a rollover accident.

3.5 When shovelling material, the movable arm should be lowered to the lowest level, the engine speed should be raised to the highest level, and then the material should be shovelled in at 2.5km/h.

3.6 During the shovelling operation, the cutting edge or teeth of the bucket should avoid obstacles, keep the bottom of the bucket level with the ground, and the speed should not be too fast.

3.7 Great care must be taken when working on slopes and the machine must never be brought close to the edge of a slope to prevent overturning.

3.8 The operation of the machine while climbing a slope must be performed in such a way that.:

3.8.1 If the bucket is full of material, when going uphill you should drive uphill in a positive direction, and when going downhill you should drive downhill in reverse.

3.8.2 If the bucket is empty, drive downhill in the forward direction and uphill in the reverse direction.

3.9 Do not allow the bucket to be lifted to the highest position for carrying materials, and keep the lower winch point of the movable arm about 400 mm above the ground when carrying materials to ensure stable travelling.

4. After the operation, you should do the following:

4.1 If the machine has previously been run at full capacity, allow the engine to idle for 2-3 minutes to allow all parts of the engine to cool slowly.

4.2 Turn the engine off by turning the starter key to "OFF" and remove the key.

4.3 Drop the movable arm to the ground before leaving the machine.

4.4 Park the machine on a level surface as far as possible and place pads in front of and behind the tyres to prevent the machine from sliding. If the machine has to be parked temporarily on a slope, place more stable pads underneath the wheels at an angle to prevent the machine from sliding.

III、Maintenance and upkeep

1. Regularly check the parts of the machine, find loose, broken and other phenomena should be promptly dealt with or reported for repair
2. Clean the hydraulic system of the machine regularly to keep the hydraulic oil clean.
3. Check the travelling system of the machine regularly. If the fixing bolts are loose, tighten and fix them in time.
4. Regularly lubricate the machine to ensure the normal operation of all moving parts.
5. Regularly change the hydraulic oil and filter to ensure the normal operation of the hydraulic system.

IV、Emergency response

1. In case of emergency, stop operation immediately and take appropriate emergency measures.
2. In case of electrical failure, cut off the power supply immediately and contact professional personnel for maintenance.
3. In case of hydraulic system failure, check whether the hydraulic oil and filter are normal immediately, and replace them promptly if there is any problem.
4. In case of tyre damage or dislodgement, stop the vehicle immediately for inspection and replace the tyre if necessary.
5. In case of operator's injury, etc., you should immediately call the first aid number and take necessary first aid measures.
6. In case of fire during operation, immediately call the police and stop the vehicle away from the scene to wait for rescue.

Other Safety Precautions

I、For your safety, please observe the following precautions concerning operation

Scalding

When the engine is still hot, the silencer is a high-temperature device and must not be touched as this can cause serious burns;

Note: When the engine is equipped with a coolant radiator:

Do not open the radiator filler cap while the engine is still hot or the spray of water vapour and hot water will burn you. After switching off the engine, wait until the radiator is completely cooled down and then wrap the water filler cap with a rag and slowly unscrew the cap.

After checking the radiator, then tighten the water filler cap; if the cap is not tightened, water vapour will be sprayed out during engine operation.

Correct ventilation of the battery area

The area around the battery must be well ventilated. Take care to keep the battery away from sources of ignition, as the battery volatilises flammable hydrogen gas during charging.

Fuel ignition creates a fire

Use the correct type of diesel fuel. Using petrol or its equivalent can cause a fuel fire. Always switch off the engine before refuelling.

If fuel is accidentally spilled, the spilled fuel must be wiped up.

Never place fuel or other flammable items near the engine as this could cause them to catch fire. Exhaust gas is toxic.

Never close windows, vents or other ventilation. Good ventilation must be ensured when the engine is running. Inhalation of exhaust gases is hazardous to health.

Never operate the engine in narrow rooms, passages, basements or cabins. Exhaust gases are difficult to remove in these places and are very harmful to your health.

Keep away from moving parts

Be especially careful not to touch moving parts while the engine is running. If hands, other parts of the body, or clothing are allowed to come close to moving parts, they could cause personal injury if they are caught by the cooling fan, flywheel, or output shaft. Do not operate the engine without guards on the moving parts.

Before starting the engine, be sure to check that no tools or clothing have been left near the engine while servicing.

Burns caused by contact with hot engine parts

When the engine is running or just after the engine stops, be especially careful not to let your body, hands or clothes touch the muffler, exhaust pipe or engine body. This is because the entire engine is hot and contact with it can cause burns.

Do not operate the engine after drinking

Do not operate the machine if you are unwell or ill after drinking, otherwise accidents may occur.

II、Safety Precautions Regarding Inspections

Do not touch the battery electrolyte

Be careful not to expose your eyes and skin to the electrolyte. The electrolyte of the battery is dilute sulphuric acid, which

can burn the skin. If you accidentally come into contact with the electrolyte, rinse immediately with plenty of water.

Fires caused by short circuits

Always switch off the battery switch or disconnect the negative lead before checking the electrical system. Failure to do so can cause a short circuit and a fire.

Keep away from moving parts

Always switch off the engine before servicing it. If it is necessary to check the engine while it is running, do not allow your hands, body or clothing to touch or come close to moving parts, as this could cause personal injury if hooked on a moving part. Avoid scalding when discharging hot oil and hot water.

If the oil must be drained when the engine is warmed up, be careful not to splash the oil on people to prevent burns.

Note: When the engine is equipped with a coolant radiator:

Be sure to wait for the temperature of the water to drop before discharging the cooling water, otherwise the hot water may splash on people and cause scalding accidents.

Beware of dirt from blowing

When working with compressed gases, wear protective equipment: e.g. windscreen to protect the eyes, as dust or flying debris can injure the eyes.



No unauthorised modifications to machines

Disposal of waste

Put the waste oil into a suitable container. Never pour waste oil directly outside, into sewers, rivers or the sea. Disposal of waste must comply with the relevant legal regulations. Hand over the waste to a professional waste recycling company for centralised disposal

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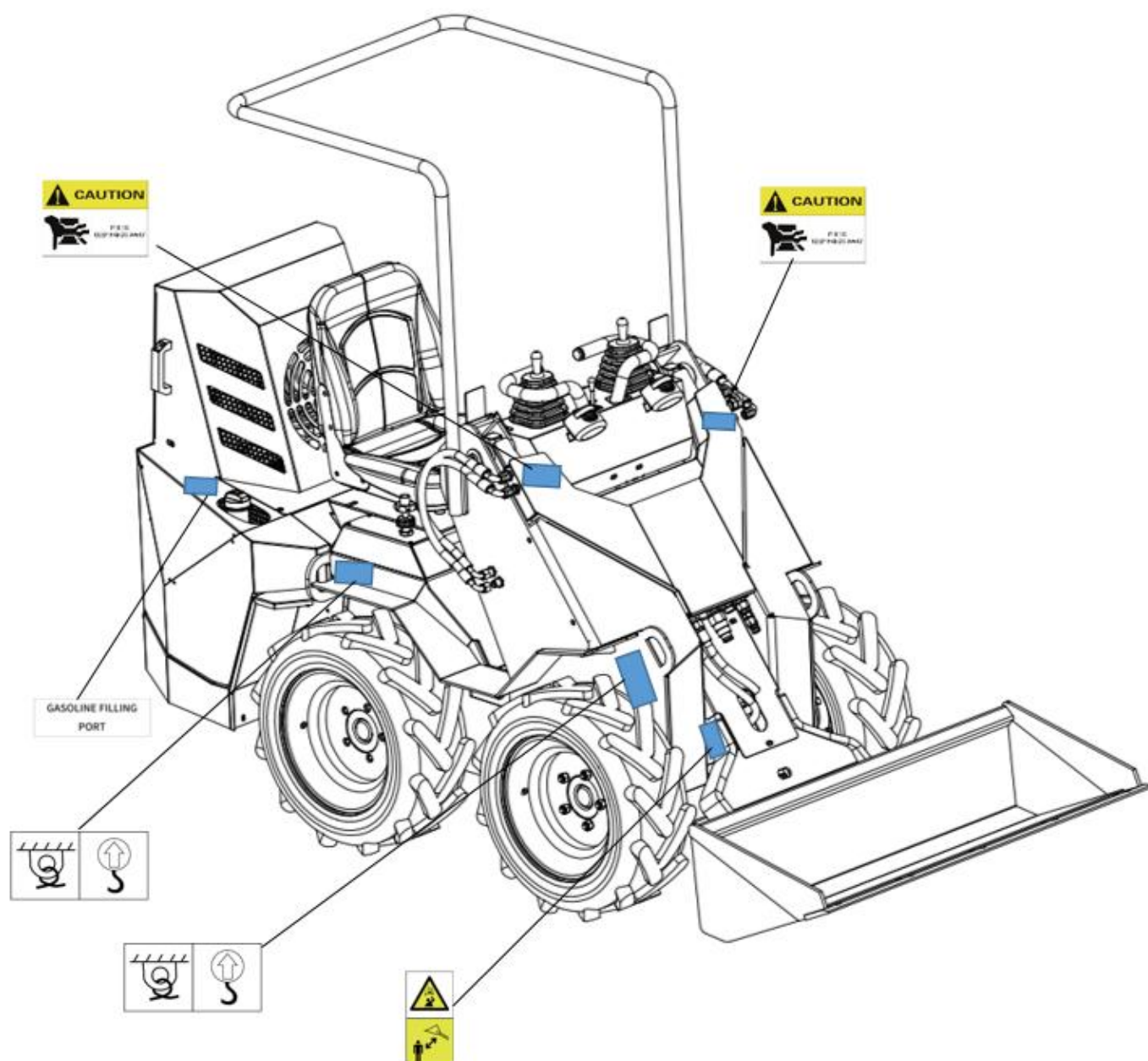
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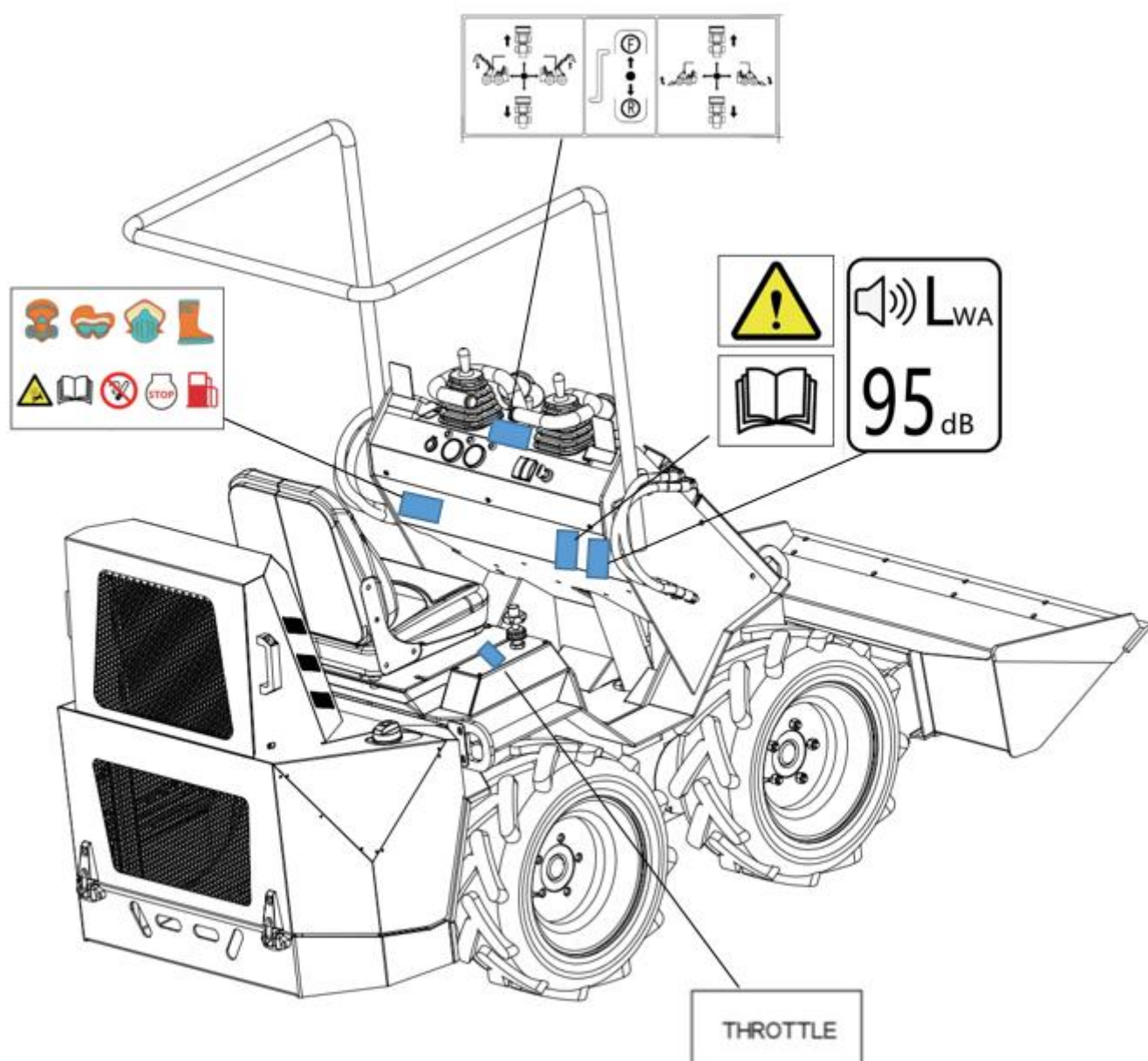
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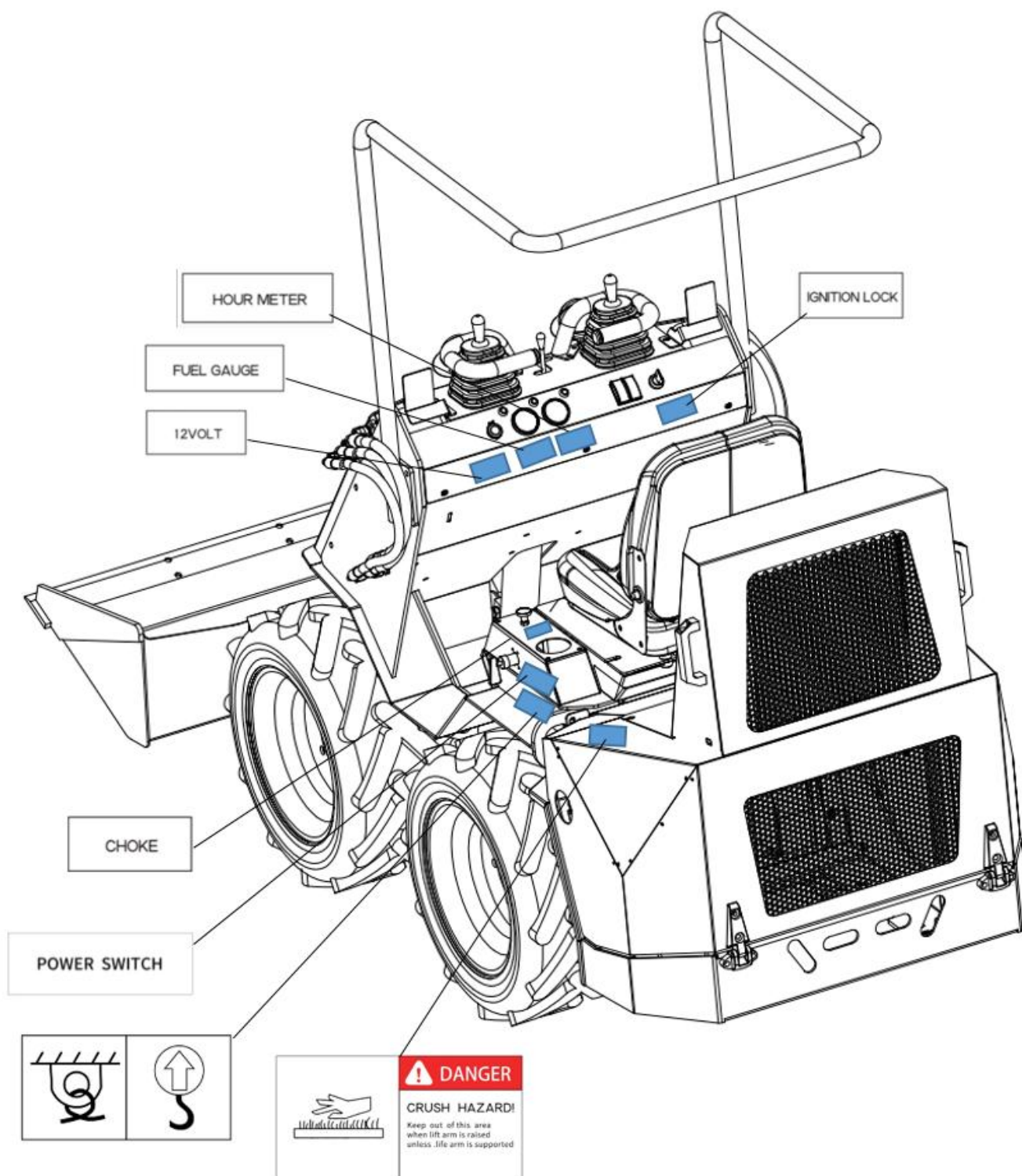
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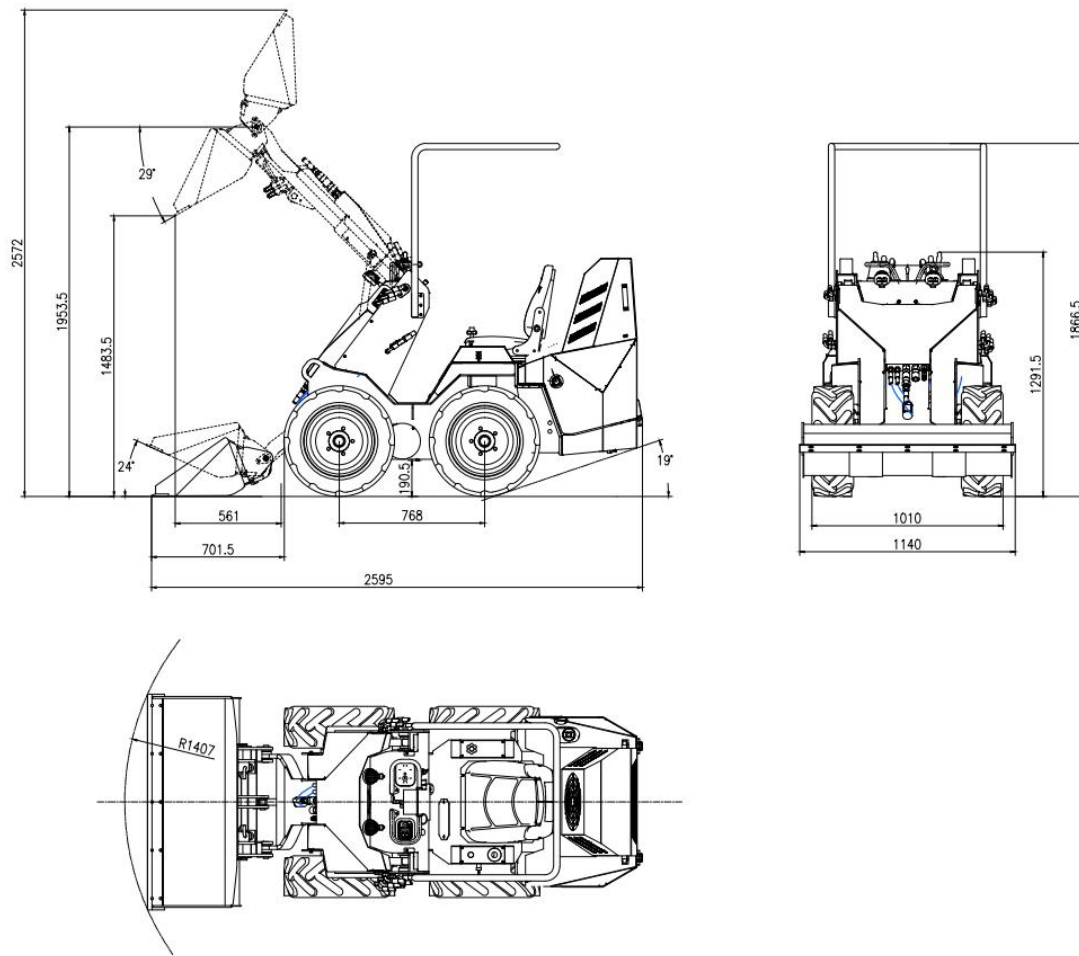
1.1 Safety Sticker Location







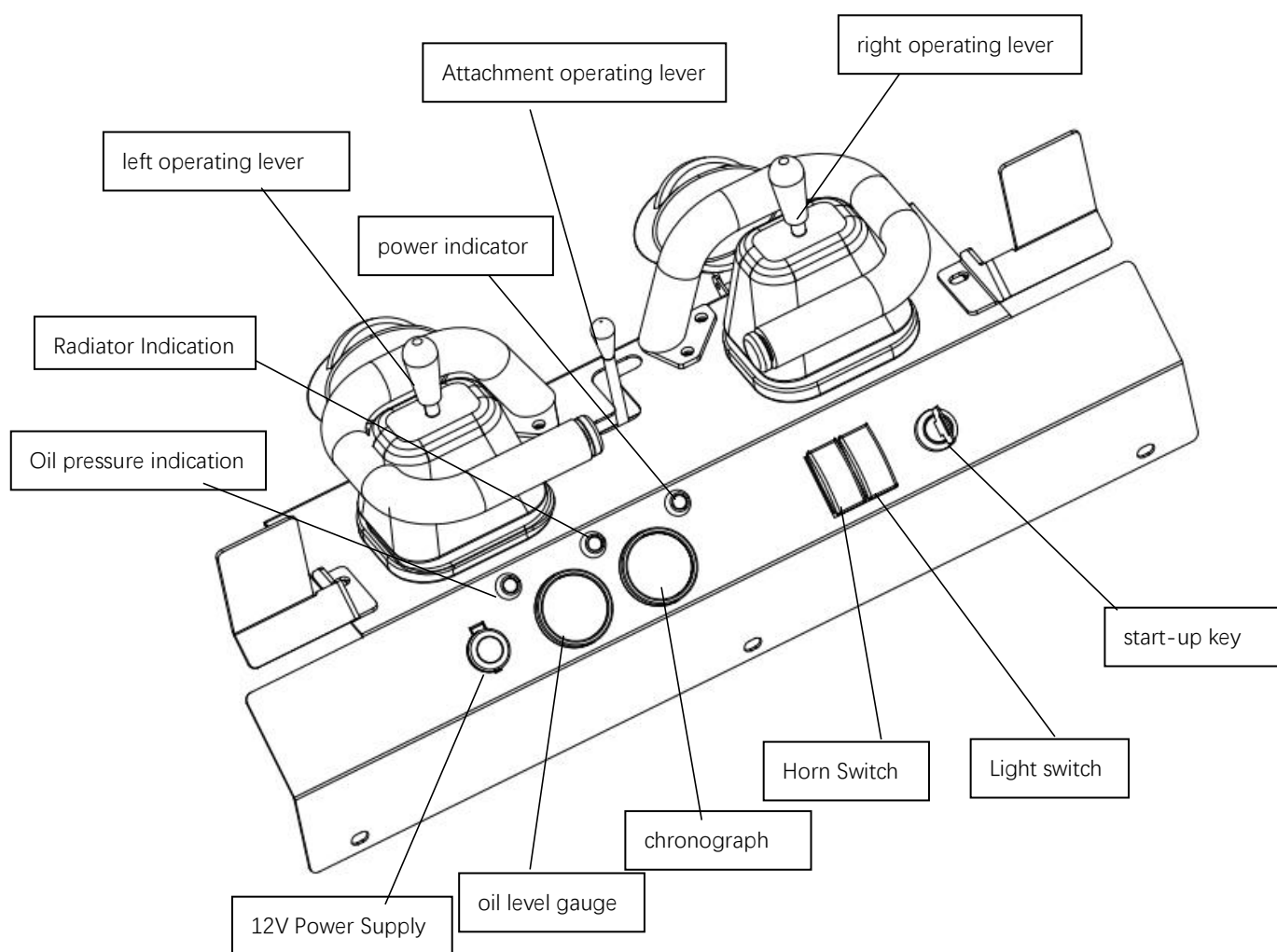
1.2 Specification of the whole machine



Performance Parameters						
Model				THUNDER VI		
performances	Rated load capacity		kg	350		
	Bucket capacity		m ³	0.15		
	Maximum lifting force		kg	800		
	operating speed		km/h	0~4.3		
	rated pressure		Mpa	17		
	Lifting time		s	4.5		
	descent time		s	3.1		
	turnaround time		s	1.8		
	climbing ability		%	20		
	weight		kg	900	910	
Engine	brand			B&S	Rato	
	model			3864	R740D	
	typology			Gasoline engine, V-twin	Gasoline engine, V-twin	
	power			23HP/3600rpm	23HP/3600rpm	

quantitative	Fuel consumption	L/h	≤6.7	
	Start-up mode		Electric start	
	Fuel oil tank	L	23	
	Engine oil tank	L	1.7	1.6
	Hydraulic oil tank	L	23	

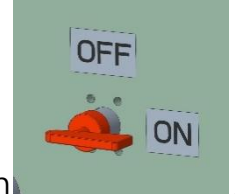
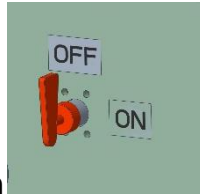
1.3 Control Panel Description



Operation

2.1 Mains start-up

2.1.1. Insert start switch knob



2.1.2. Switch from OFF position, Turn clockwise to ON position,

the mains power can be switched on.

2.1.3. Starter switch

The starter switch is a secondary rotary switch. The starter switch is selectively positioned by inserting the key into the lock slot and rotating the key.

OFF: is the engine stop position, when all current is cut off. The key can be inserted or removed in this position.

ON: This position is for normal operation. Current flows through the instrumentation and warning devices.

Start: This is the start position. The self-starting motor rotates to start the engine. After starting, the key is released and when the key is released, the key automatically returns to the "on" position.

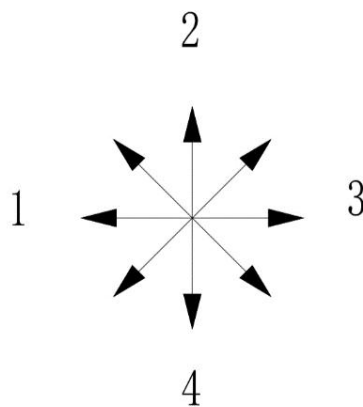
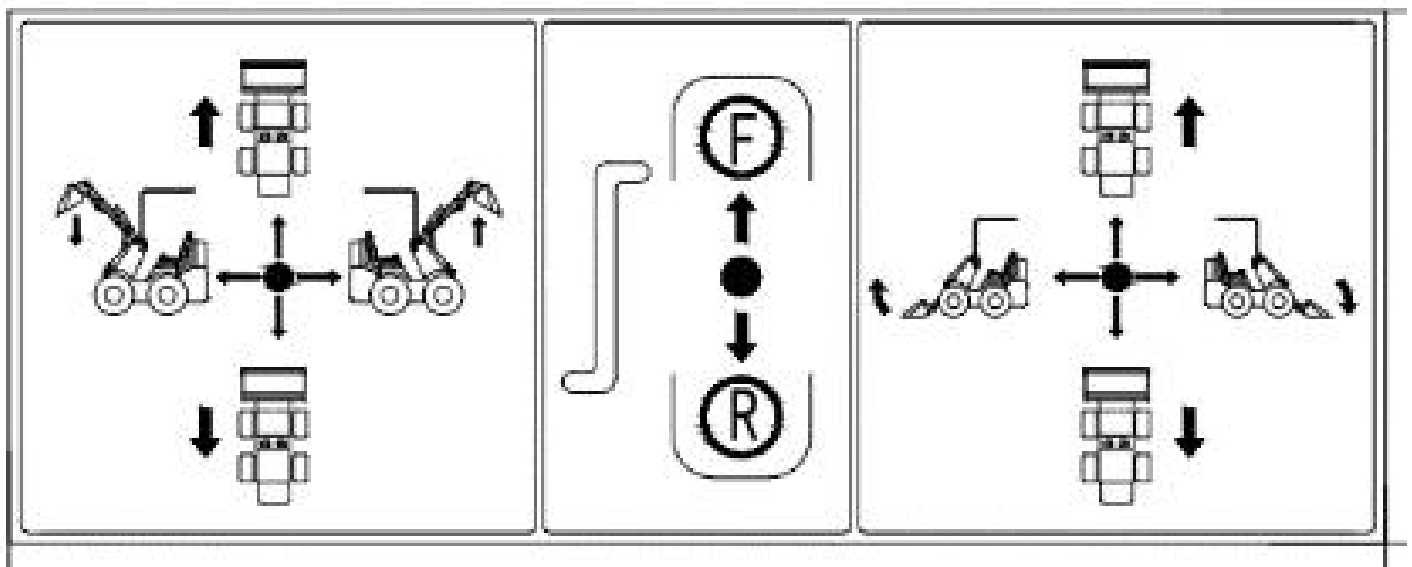
Engine stop

When the starter switch is turned to the "OFF" position, the engine is shut down.



Note: When starting a petrol engine, the auxiliary dampers need to be closed at cold start;

2.2 Operating Instructions:



2.2.1 Left Handle Motion Control:

The handle is pushed in 2 directions, the left wheel advances, and the travelling speed matches the advance of the handle.;

The handle is advanced in direction 4, the left wheel is backed up, the travelling speed is matched with the handle advancement amplitude;

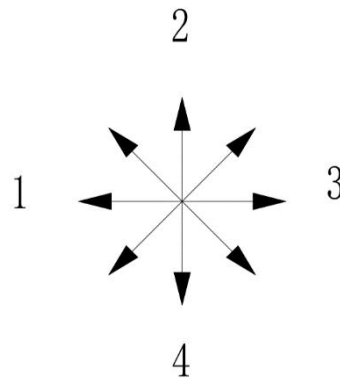
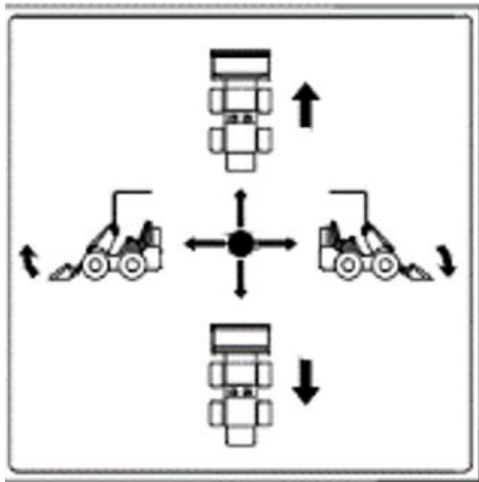
The handle is advanced in the direction of 3, the lifting arm rises, and the rate of ascent is matched by the rate of advancement of the handle;

The handle is advanced in direction 1, the lifting arm descends, and the descending speed matches the handle advancement;



In the state of switching off the engine, the handle is pushed in the direction of 1 and the

lifting arm is lowered to prevent accidents. Before switching off the engine, please place the big arm in a safe position to avoid causing injuries to the operator.



2.2.2 Right handlebar movement manoeuvres:

The handle is advanced in direction 2, the right-hand wheel advances, and the travelling speed matches the handle advance;

When the handle is pushed in direction 4, the right wheel goes backward, the travelling speed matches the advance of the handle;

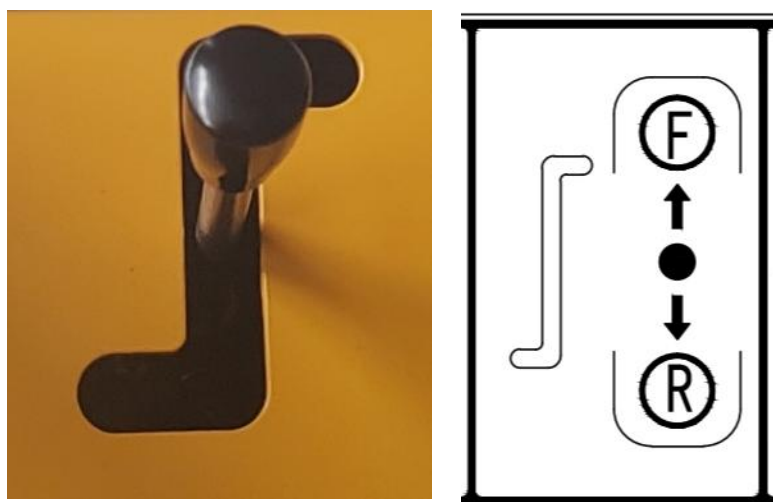
When the handle is pushed in direction 1, the appliance is turned upwards, and the speed of turning matches the advance of the handle;

The handle is pushed in the direction of 3, the appliance is turned downwards, and the turning speed is matched with the advancement amplitude of the handle;



In the state of switching off the engine, the handle is pushed in 3 directions and the appliance is turned downwards to prevent accidents. Before switching off the engine,

please place the appliance in a safe position to avoid causing injuries to the operator.



2.2.3 Attachment movement manoeuvres:

The handle is pushed forward and fixed to the right in the cross slot, the generator can realise unidirectional rotation or unidirectional movement;

The handle is pushed backward and fixed to the left in the cross slot, the appliance can realise unidirectional rotation or unidirectional action;

2.2.4 Chronograph: record the working time of the machine

2.2.5 Horn switch: self-resetting switch, when pressed, the vehicle horn sounds, and when released, the horn sounds stop.

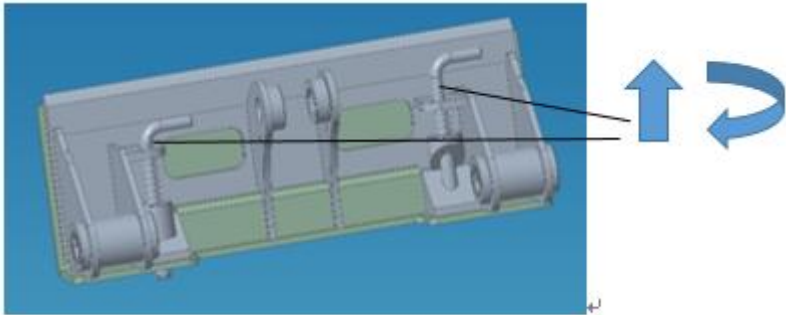
2.2.6 Light switch: self-locking switch, when pressed, the LED light is on

2.2.7 Start key: with preheat function, position OFF, position ON, position START

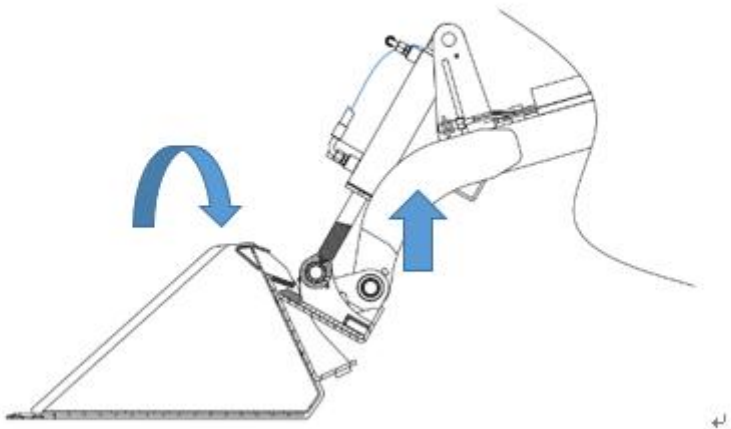
2.2.8 Throttle cable: control the engine speed, counterclockwise rotation speed increases, clockwise engine speed decreases, both fast throttle function.

2.3 Lift plate quick-change device

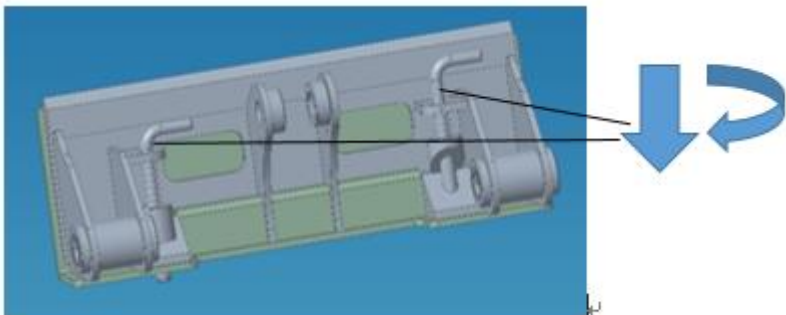
2.3.1 Before replacing the appendage, the quick locking pin on the lifting plate needs to be pulled upwards and rotated 90 degrees to snap securely into the locating plate.



2.3.2.Example: Place the appliance smoothly on a stable plane, adjust the lifting plate to a forward tilted state, with the upper part stuck in the positioning slot of the appliance, lift it upwards and turn the plate towards the inside of the machine.



2.3.3 After replacing the appendage, the quick locking pin on the lifting plate needs to be rotated 90 degrees first so that the pin is firmly seated in the locating slot.



2.4 Attachment Fittings

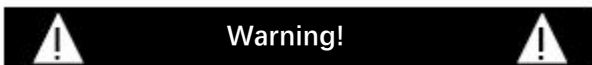


Attachment working oil port A

Attachment working oil port B

Attachment oil return port

Connection of different appliances, pay attention to the connection of the working oil port, for the work of executing the original need to shell oil need to be connected to the appliance oil return port.



Note: After connecting the genera, should be small engine speed for action running, to ensure that the work steering and activities correct and normal, to prevent improper operation of the accident, resulting in injury to the operator.

2.5 Engine Usage :

2.5.1 Fuel Selection

1.The fuel must meet these requirements:

Clean, fresh unleaded petrol.

At least 87 octane/87 pressurised octane (AKI) (91 research method octane (RON)). Can be used at high altitudes (as shown below).

If ethanol petrol is used, the petrol can contain up to 10% alcohol.

Note

Do not use unapproved petrols such as E15 and E85. Do not mix other oils into the petrol or modify the engine to use other fuels. Use of unapproved fuels will damage engine components and is not covered by the warranty.

To prevent fuel system gelling and retesting, mix alcohol-free fuel stabiliser and ethanol treatments into the fuel. See storage section. Fuel is not all the same. If starting or performance problems occur, change fuel supplier or brand. This engine is certified for use with gasoline only. The emission control system for carbureted engines is EM (Engine Modified). The emission control system for electronic fuel injection engines includes ECM (Engine Control Module), MF1 (Multi-Port Fuel Injection), TB1 (Throttle Body Fuel Injection), and O2S (Oxygen Sensor) if equipped.

high altitude

Gasoline with a minimum of 85 octane/85 pressurised octane (AKI) (89 Research Octane (RON)) may be used at altitudes greater than 5,000 ft (1,524 m) above sea level.

For carburetted engines, high altitude adjustment is required to maintain performance. Running without this adjustment will result in reduced performance, increased fuel consumption and higher emissions. Consult an authorised Briggs & Stratton dealer for information on high altitude adjustment. High Altitude Adjustment is not recommended if the engine is to be operated at an altitude of less than 2,500 feet (762 metres).

For Electronic Fuel Injection (EFI) engines, no high altitude adjustment is required.

Note:

If incorrect fuel specifications are used, this may result in reduced engine performance and

component failure.

(2) Use of fuel

Use clean containers to store fuel.

Store fuel in a clean drum where it cannot get wet. Water or dirt mixed with fuel can cause engine failure.

Leave the drum upright for 24 hours until the water and dirt in the fuel settles to the bottom of the container. Use a pump to draw clean fuel from the top of the container.

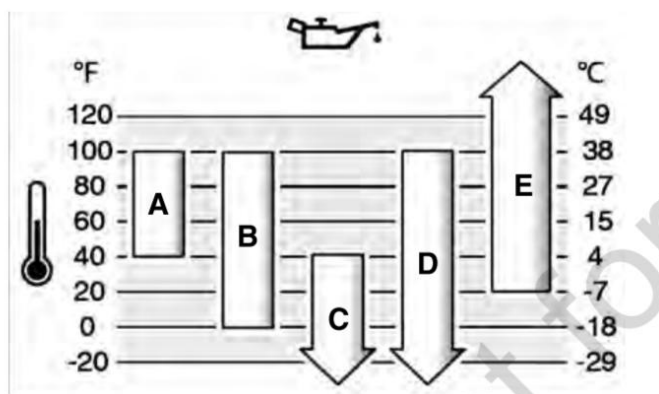
2.5.2 Lubricating oil



If incorrect lubricant specifications are used, it may cause internal engine parts to seize up or wear prematurely, thus shortening engine life.

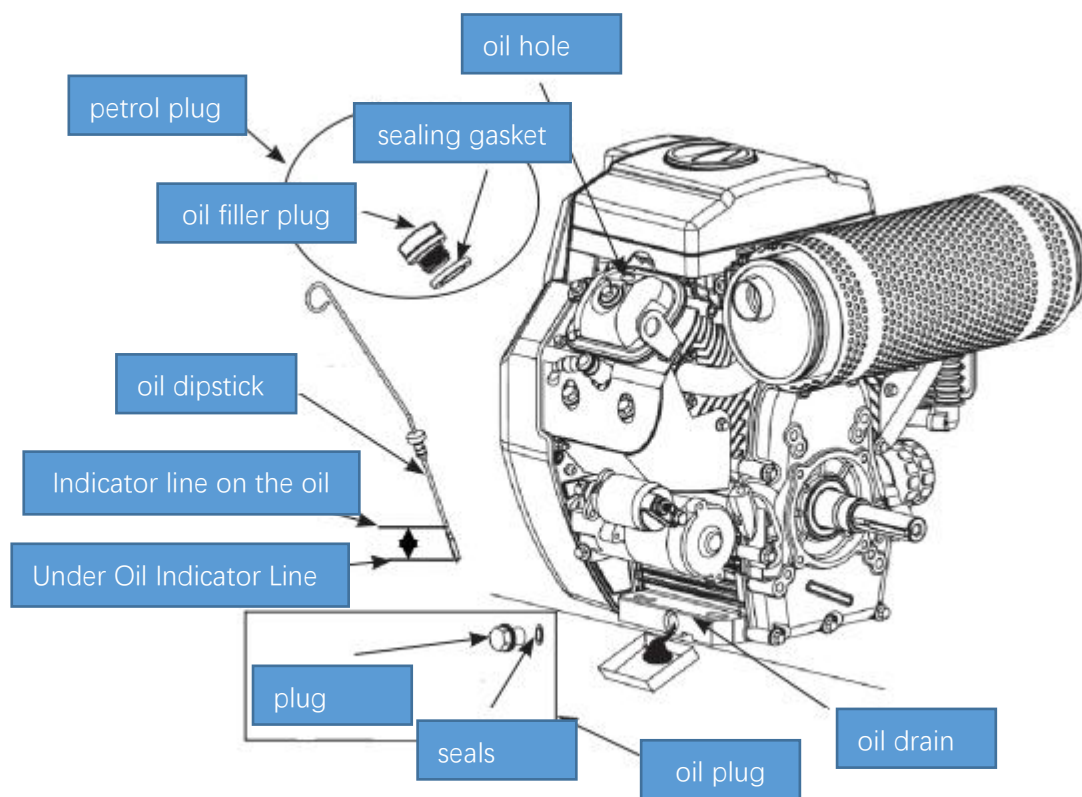
(1) Lubricant Specifications:

OIL RECOMMENDATIONS To ensure optimum performance, use a high quality washer oil "Class SF, SG, SH, SJ" or better. Do not use specialised additives. Use the chart to select the best viscosity for the expected outdoor temperature range. Most engines in outdoor power equipment use 5W-30 synthetic oils. For equipment operating at high temperatures, Vanguard® 15W-50 Synthetic Motor Oil provides the best protection.



A	SAE 30-Below 40°F (4° C), use of SAE 30 will result in difficult starting.
B	10W-30 - Above 80°F (27° C), use of 10W-30 will result in increased oil consumption. Check the oil level frequently.
C	5W-30
D	Synthetic 5W-30
E	Vanguard Synthetic 15W-50

Check oil level



Before checking the oil level

- Make sure the engine is level.
- Clean the oil filler area and remove any unwanted material.

Short oil dipstick (if installed)

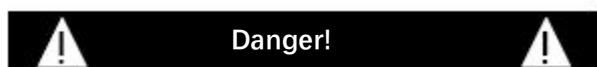
1. Remove the oil dipstick. Wipe the oil from the dipstick with a cloth.

2. Install the oil dipstick.
3. Remove the dipstick and check the oil level. The correct oil level should be at the top of the dipstick full indication.
4. If the oil level is low, slowly fill the engine oil filler with oil. Do not inject too much oil. Wait one minute, then check the oil level again. Make sure the oil level is correct.
5. Install and plug the dipstick tightly.



Do not mix lubricants of different sizes to prevent negative effects on lubrication performance.

2.6.fuel supply



Beware of fuel fires

Always make sure that the fuel specification is correct before refuelling. Using the wrong type of petrol or similar products may cause a fuel fire.

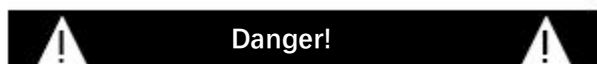
Always switch off the engine before refuelling.

If fuel is spilled, wipe it up carefully.

Do not place fuel or other flammable materials near the engine as this may cause a fuel fire.

2.6.1 Add oil

Add petrol



Fuel oil and its vapours are flammable and explosive. Fire or explosion may cause burns or

death.

When you need to add fuel.

Please stop the engine. Wait at least two (2) minutes before removing the fuel tank cap to make sure the engine is cool.

Fill the fuel tank outdoors or in a well-ventilated area.

Never put too much fuel in the fuel tank. Considering the expansion of petrol, never allow the fuel level to exceed the lower part of the fuel tank neck.

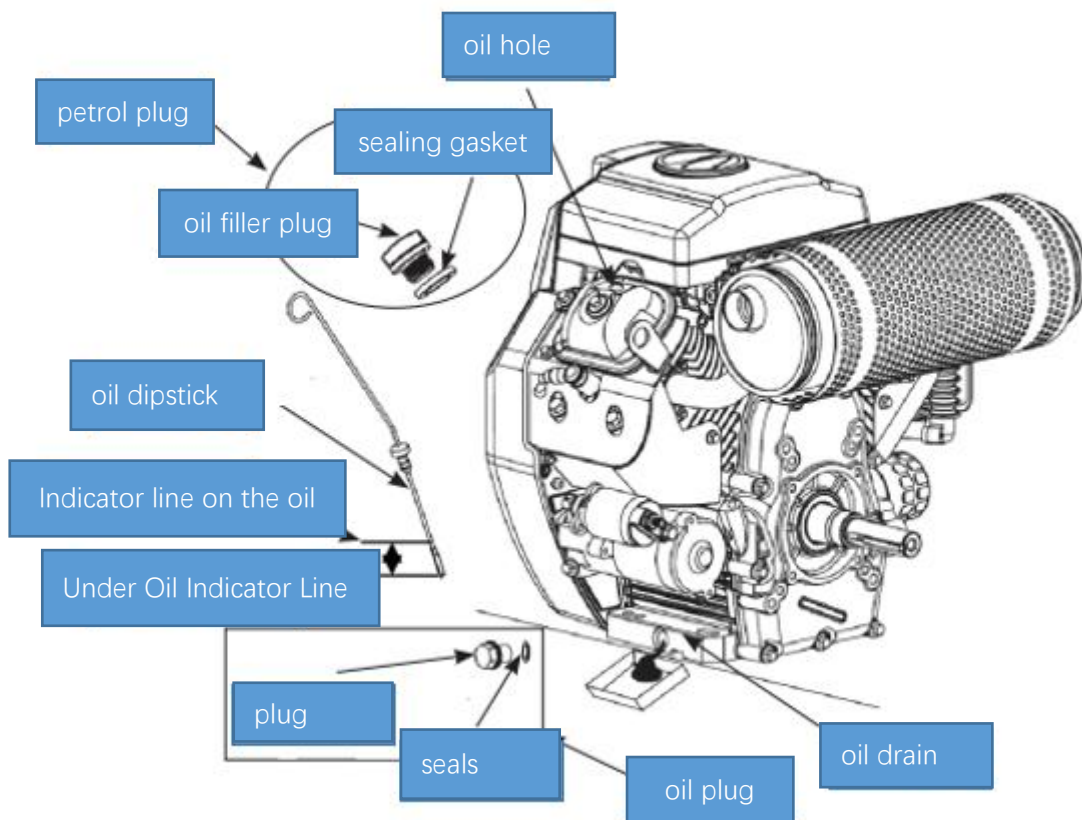
Keep gasoline away from sparks, open flames, standing fires, heat and other sources of ignition.

Check fuel lines, fuel tank, fuel cap and connections frequently for cracks or leaks. Replace damaged parts.

If fuel is spilled, wait until it dries before starting the engine.

1. Remove dust and debris from petrol filler area. Remove the fuel tank cap.
2. Fill the fuel tank with fuel. Considering the expansion of fuel, do not allow the fuel level to exceed the lower part of the fuel tank neck.
3. Install the fuel tank cap. Be careful not to spill fuel when starting the engine to refuel.

2.7. Lubricant supply



Add lubricating oil to the specified level according to the following procedure.

- (1) Place the engine in a level position.
- (2) Unscrew the engine side oil dipstick.
- (3) Check the oil level with the marked dipstick. The oil should be added to the upper level of the dipstick.
- (4) Tighten the oil dipstick.



Do not rotate the dipstick when checking the oil level. Do not overfill the oil.

Repair & Maintenance

3.1 Examine

- (1) Periodic inspection

The performance of the engine will deteriorate increasingly due to the operating

conditions and duration of operation. Ignoring deterioration in performance and functioning can lead to unforeseen malfunctions, which can affect interference with your work, increase fuel and lubricant consumption, increase emissions and noise, and thus shorten the life of the engine. Routine checks and regular inspections will maintain engine efficiency and prevent breakdowns.

(2) Daily pre-operation checks.

Daily inspections are done before any operation. Daily inspections should be done before operation and enforced as a rule.

(3) Periodic inspection intervals .

It is recommended that you make an operation diary to record daily operations and inspection results. When the hours of operation or timer readings approach the specified values, perform periodic checks as instructed in this book.

(4) Use of Genuine Parts.

Always use genuine parts for engine part replacement. Using other parts will reduce the performance and life of the machine.

(5) Always have maintenance tools: Maintenance tools should be stored near the engine.

Maintenance tools should be stored near the engine, ready to be used at any time.

(6) Torque bolts and nuts.

Tighten bolts and nuts to the specified torque.

If the bolts are tightened too much, the threads will be damaged; if they are tightened too loosely, oil leakage from the bonding surface or mechanical failure will occur.

If the bolts are too tight, the threads will be damaged.

For critical parts, use a torque spanner and tighten the bolts to the specified torque in

three passes according to the specified procedure.

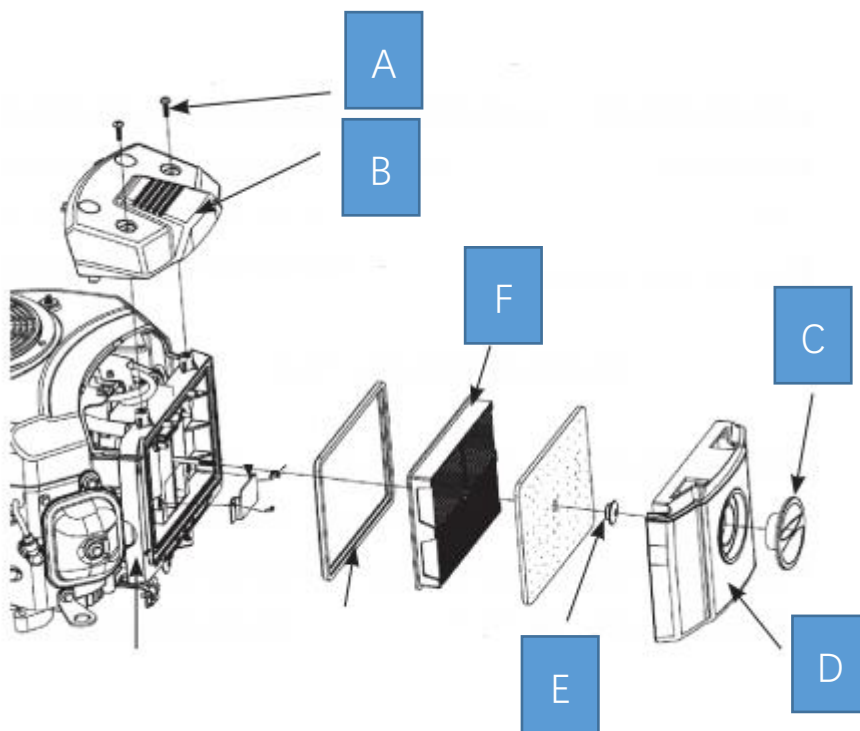
If disassembly of parts is required for servicing, consult your dealer or distributor.

3.2 Clean the air filter.



When the element on the air filter gets clogged with dust, the performance of the engine is greatly affected. Therefore it needs to be cleaned regularly.

When the engine is operated in dusty areas, the filter element should be cleaned more frequently.



Sponge air cartridge 1. Loosen the fasteners (A) securing the cover (B).

2. Open the cover (B) and remove the retaining combination nut (C).

3. Open the top cover (D) and remove the retaining nut (E).

4. Clean the foam cartridge (F) with liquid detergent and water. Squeeze the foam element dry in a clean cloth.

5. Soak the foam element (F) with clean engine oil. To remove excess oil, squeeze the foam element dry in a clean cloth.
6. Install the retaining nut (E), top cover (D), and retaining combination nut (C).
7. Install cover (B) and close with fasteners (A).

Inspection every 100 operating hours

(1) Replacement of lubricating oil and lubricating oil cartridge (second time and later)

Change the lubricating oil every 100 operating hours from the second time. Also replace the lubricant filter element.

(6) Replacing the air filter element (optional)

A damaged filter element allows suspended matter in the air to enter the combustion chamber causing rapid engine wear and shortening engine life. An air filter element that is covered with a large amount of dust also reduces the engine's power output, resulting in black smoke from the exhaust. Replace the air filter element with a new one at regular intervals.

3.3 Precautions for long-term storage

If the engine is to be stored for a long period of time, please note the following points.

Inspection and maintenance in long-term storage

(1) Periodic inspection

If the next periodic inspection is coming up, perform the inspection before storage.

(2) Cleaning of the exterior and draining of oil.

Wipe dirt and oil from the engine case.

(3) Waterproofing and dustproofing

Cover the air filter, muffler, and electrical components (AC motor, starter motor, switches) with a sealed plastic cover to prevent water or dust ingress.

Store the engine in a well-ventilated area to protect it from humidity and dust.

(5) Measures against self-discharge of the battery

Switch off the battery or disconnect the battery earth lead (-). Charge the battery once a month to compensate for the battery's self-discharge.

For operation after long-term storage, make the same preparations as for the first operation, see previous chapter Operation.

3.4 Periodic checklist

	First 5 hours
	Change the engine oil.
	Every 8 hours or every day
	Check engine oil level.
	Clean the area around the silencer and controls.
	Clean air inlet grille.
	Every 25 hours or annually
	Clean the air filter.
	Clean the pre-filter.
	Every 50 hours or annually
	Repair exhaust system.

	Every 100 hours or annually
	Change the engine oil.
	once a year
	Replace the air filter element.
	Replace the pre-filter.
	Repair cooling system.
	Replace the spark plugs.

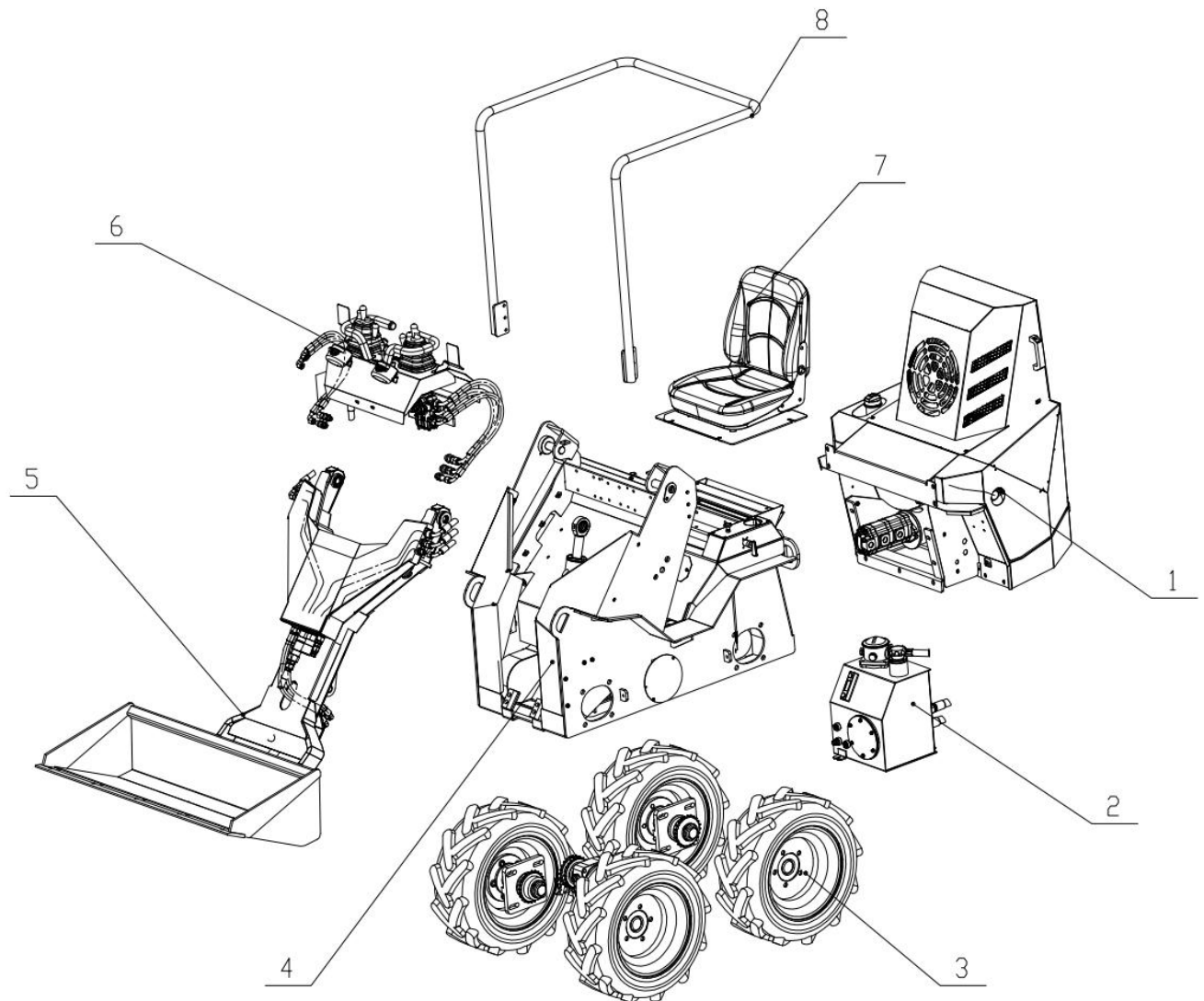
Change the oil after the first 5 hours of operation.

3.5 Engine FAQ

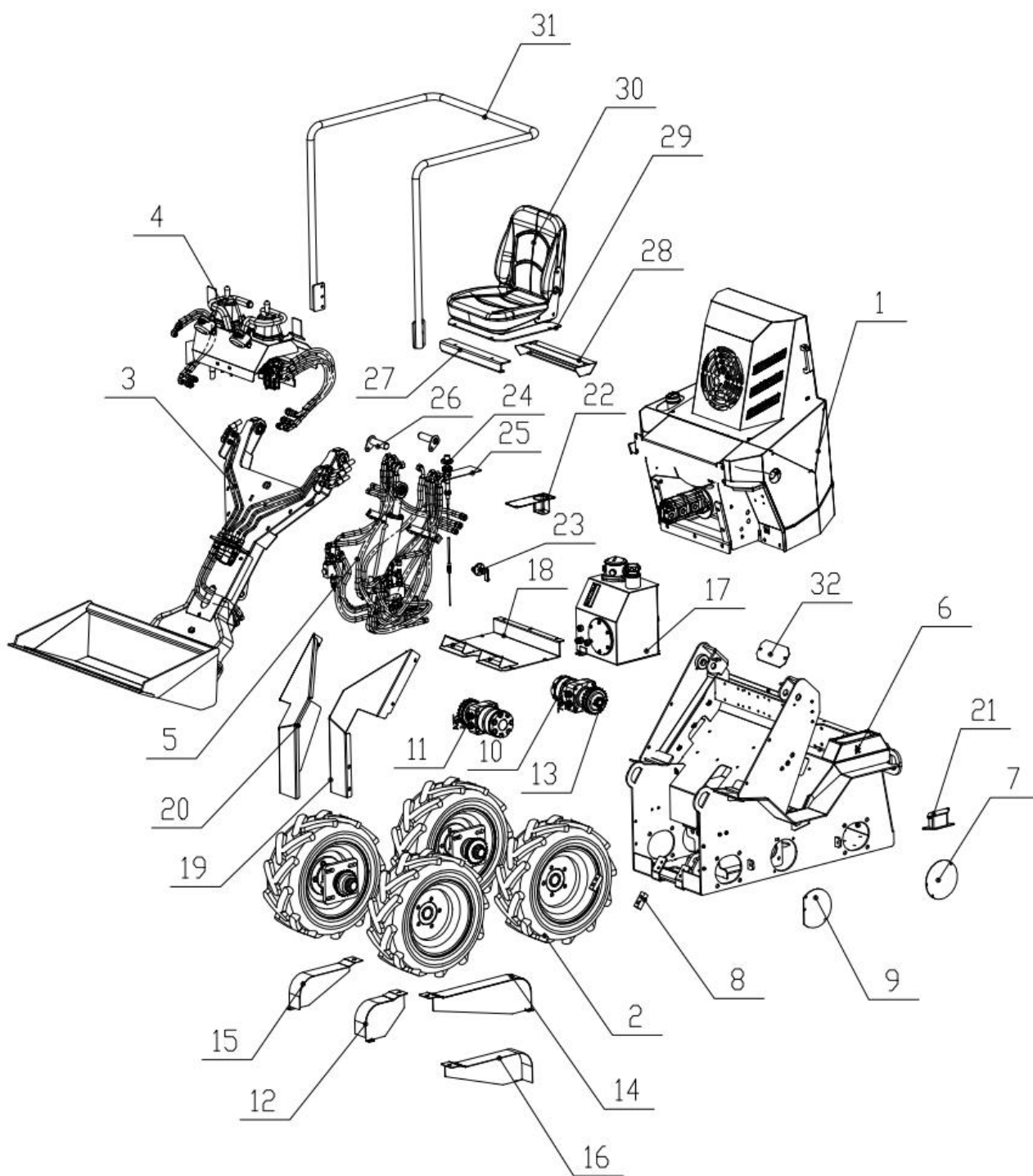
impunity	Possible causes	cure
The engine won't start.	fuel free	Refuelling
	Water in fuel system	Replace fuel and repair or replace
	Clogged fuel line	Replace fuel system
	Clogged fuel filter	Clean or replace
	High viscosity of oil at low temperatures	Replace
	Incorrect injection timing	Use specified oil
	Clogged injector nozzles	Adjust
	Stuck crankshaft, camshaft, pistons, cylinders or bearings	Clean or replace
	Worn piston rings and cylinders	Repair or replace
	Excessive valve lash	Replace
Starter does not run	Discharged battery	Adjustment
	Faulty starter	Charge
	Faulty key switch	Repair or Replace
	Disconnected wiring	Replacement
	Clogged air filter	Connections
White or blue exhaust gases are emitted	Excessive oil	Clean or replace
	Worn or stuck piston rings and cylinder	Reduce to specified oil level
Black or dark grey exhaust gas emission	Overloaded	Repair or replace
	Low quality fuel used	Reduce load
	Clogged fuel filter	Use specified fuel
	Clogged air filter	Replace

Insufficient output	Moving parts of the engine appear to be stuck	Repair or replace
	Compression leak	Check compression pressure and repair
	Air leakage from exhaust system	Repair or replace
	Compressor air leak on discharge side	Repair or replace
	Dirty or clogged air filter	Clean or replace
Excessive oil consumption	Piston ring openings facing the same direction	Change ring opening gap direction
	Worn or stuck oil rings	Replace
	Worn piston ring grooves	Replace piston
	Worn valve stems and valve guides	Replace
	Oil leakage due to faulty seals or gaskets	Replace
Low oil pressure	Insufficient oil	Replenish
	Clogged oil filter	Cleaning
	Clogged oil passages	Cleaning
	Different oil types	Use specified type of oil
Engine overheating	Insufficient oil	Replenish
	Dust clogging the radiator screen and blades	Clean
	Corrosion inside the radiator	Clean or replace
	Faulty radiator cap	Replace
	Overloaded operation	Reduce load
	Faulty cylinder head liner	Replace
	Use of inappropriate fuel	Use specified fuel
Battery dies quickly	Insufficient battery electrolyte	Replenish distilled water and recharge
	Disconnected wiring	Connect
	Rectifier failure	Replacement
	Alternator failure	Replacement
	Battery failure	Replacement

4.1 Dismantle The Whole Machine



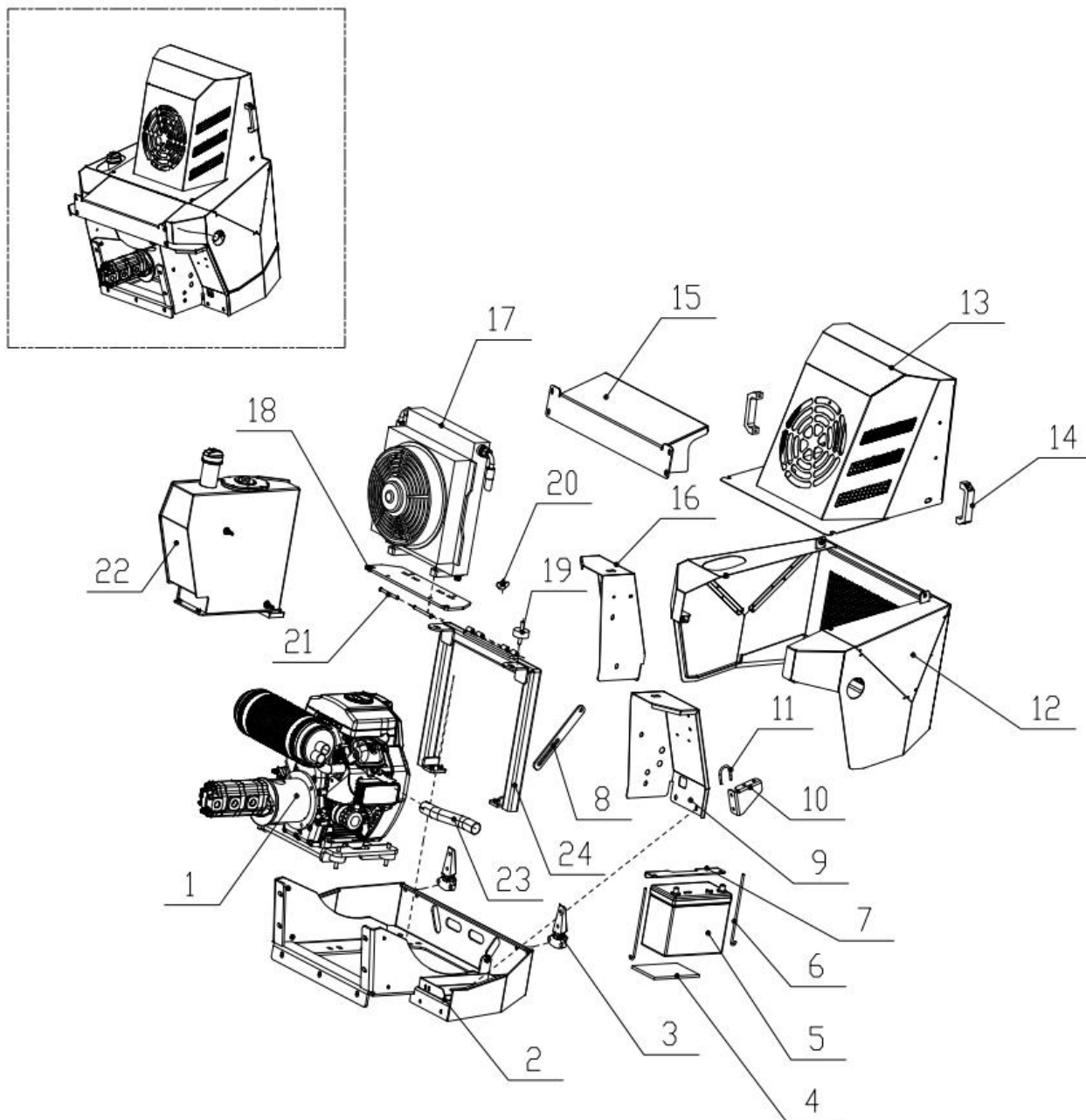
No	Part No	Description	Q' ty	Remark
1	5620000-01	Gasoline version rear assembly	1	
2	5610000-02	Hydraulic Oil Tank Assembly	1	
3	5610000-03	Walking System Assembly	1	
4	5610000-04	Main Frame Assembly	1	
5	5610000-05	Lifting Arm Assembly	1	
6	5610000-06	Control Panel Assembly	1	
7	5610000-07	Seat Assembly	1	
8	5520111	Guard Frame	1	



No	Part No	Description	Q' ty	Remark
1	5620000-01	Gasoline version rear assembly	1	
2	5610000-03	Walking System Assembly	1	
3	5610000-05	Lifting Arm Assembly	1	
4	5610000-06	Control Panel Assembly	1	
5	5612300	Hydraulic pipeline system	1	
6	5540101	Frame assembly	1	
7	5540128	Left cover plate	1	

8	26	Collision block	1	
9	5540129	Right cover plate	1	
10	5610100-01	Left motor	1	
11	5610100-02	Right motor	1	
12	5540105	Left front cover	1	
13	22	Motor sprocket	1	
14	5540106	Right front cover	1	
15	5540107	Right rear cover	1	
16	5540108	Left rear cover	1	
17	5610000-02	Hydraulic Oil Tank Assembly	1	
18	5540145	Foot pedal assembly	1	
19	5520106	Front left cover	1	
20	5520107	Front right cover	1	
21	5540139	Return oil block bracket	1	
22	5530116	Left seat plate	2	
23	5610100-03	Battery switch	1	
24	5610100-04	Throttle cable	1	
25	5540123	Throttle panel	1	
26	3800209	Pin shaft assembly L=110	2	
27	5610320	Front bracket	1	
28	5610321	Rear bracket	1	
29	5540111	Seat base	1	
30	5610100-05	chair	1	
31	5520111	Guard Frame	1	
32	5540114	Oil port cover plate	1	

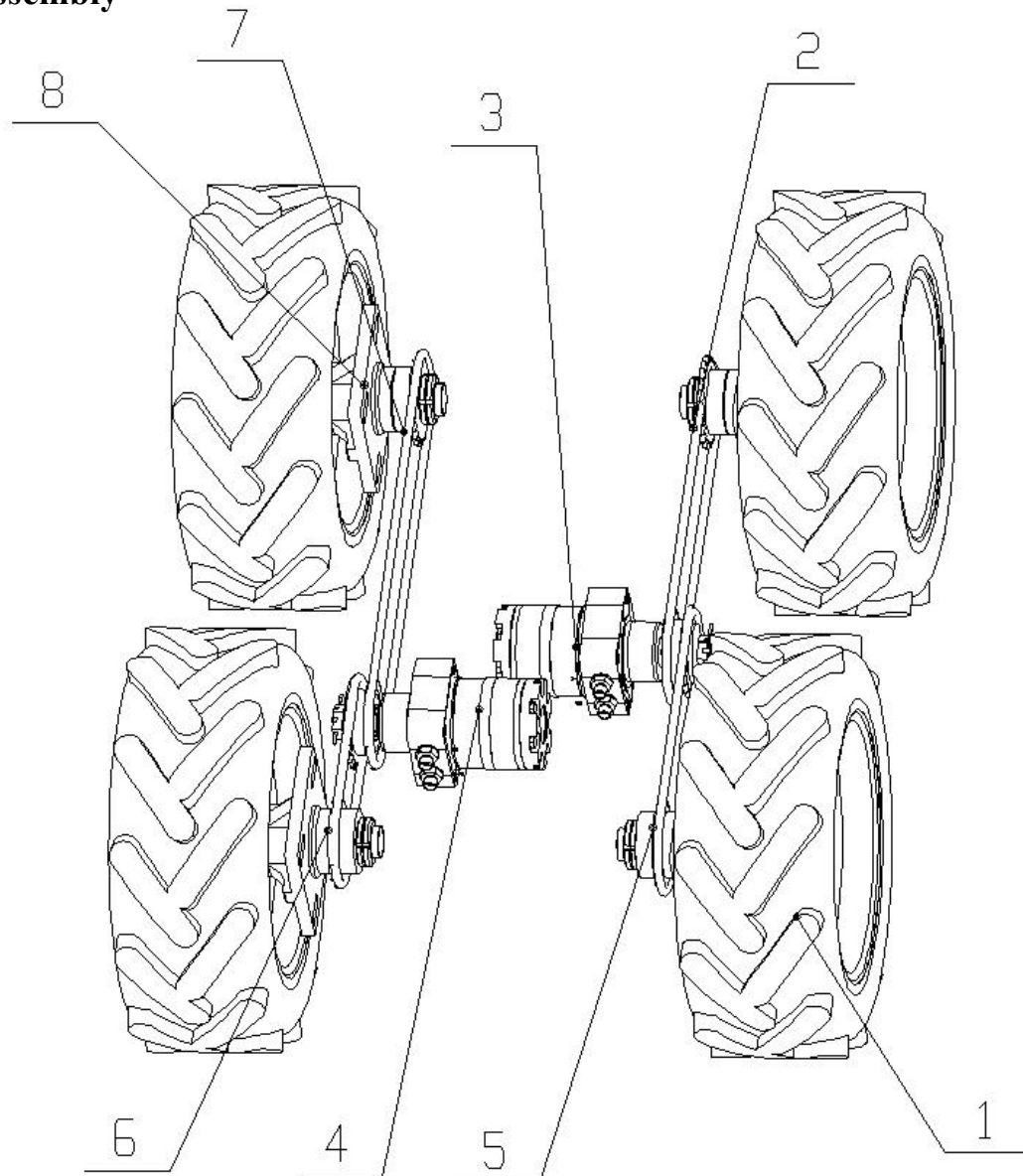
4.2 Gasoline version rear assembly



No	Part No	Description	Q' ty	Remark
1	5620200-01	Gasoline engine assembly	1	
2	5620114	Rear frame assembly	1	
3	5610200-14	Hinge	2	
4	5610200-15	Battery pad	1	
5	5610200-16	Battery	1	
6	3802113	Battery hook	2	
7	2850117	Battery pressure plate	1	
8	5610317	Pulling plate		
9	5610307	Left mudguard	1	
10	5620110	Fixed bracket	1	

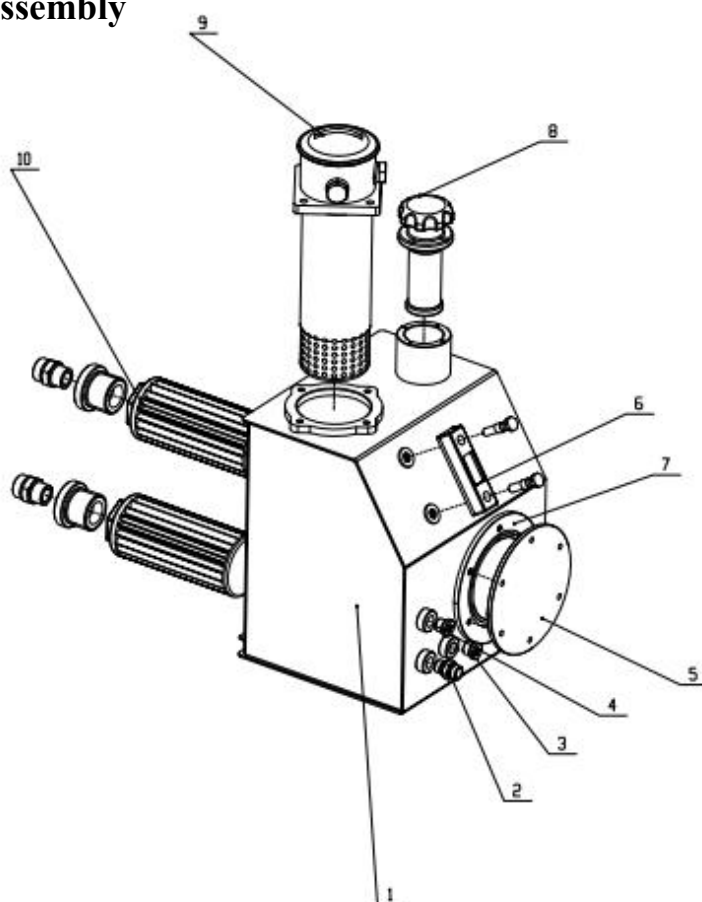
11	3802109	Clamp with diameter of 40	1	
12	5620122	Lower cover -gasline version	1	
13	5620121	Upper cover	1	
14	5620200-02	Bridge handle	2	
15	5610306	Fixed bracket	1	
16	5610308	Right mudguard	1	
17	3802114	LH380 radiator	1	
18	5620116	Radiator fixing plate	1	
19	5620200-03	Diameter 50 shock-absorbing block	2	
20	5620200-04	M10 butterfly nut	2	
21	5620200-05	Hinge pin	2	
22	5610000-08	Fuel tank assembly	1	
23	5610200-06	Smoke exhaust pipe	1	
24	5620117	Radiator mounting bracket	1	

4.3 Walking Assembly



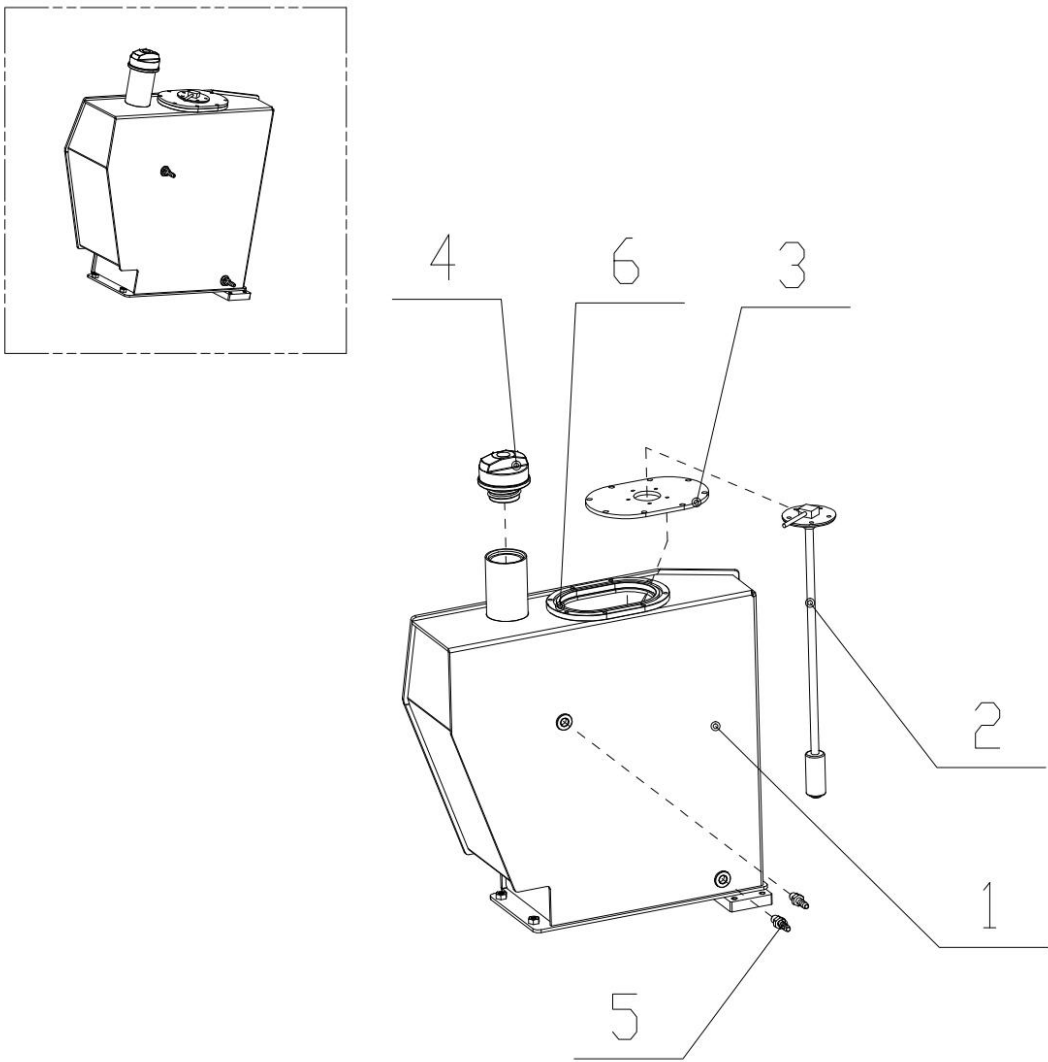
No	Part No	Description	Q' ty	Remark
1	5540102	tyre	4	
2	5540100-01-01	Chain one	1	
3	5610100-01	Left motor	2	
4	5610100-02	Right motor	1	
5	5540100-01-04	Chain two	1	
6	5540100-01-05	Chain three	1	
7	5540100-01-06	Chain four	1	
8	5540100-01-07	Axle mounting assembly	4	

4.4 Hydraulic Tank Assembly



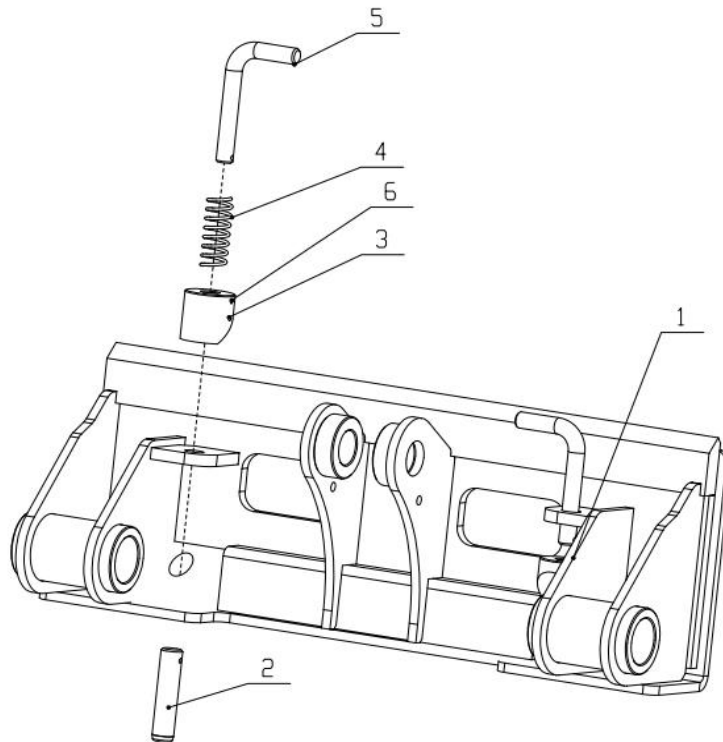
No	Part No	Description	Q' ty	Remark
1	5540103	Hydraulic tanks	1	
2	5540100-06-01	Hydraulic connectors	1	
3	5540100-06-02	Hydraulic connectors	1	
4	5540100-06-03	Hydraulic connectors	1	
5	5540100-06-04	Wash the cover	1	
6	5540100-06-05	Oil level gauge	1	
7	5540100-06-06	O-rings	1	
8	5540100-06-07	Air filter	1	
9	5540100-06-08	Return filter	1	
10	5540100-06-09	Strainer	2	

4.5 Fuel tank assembly



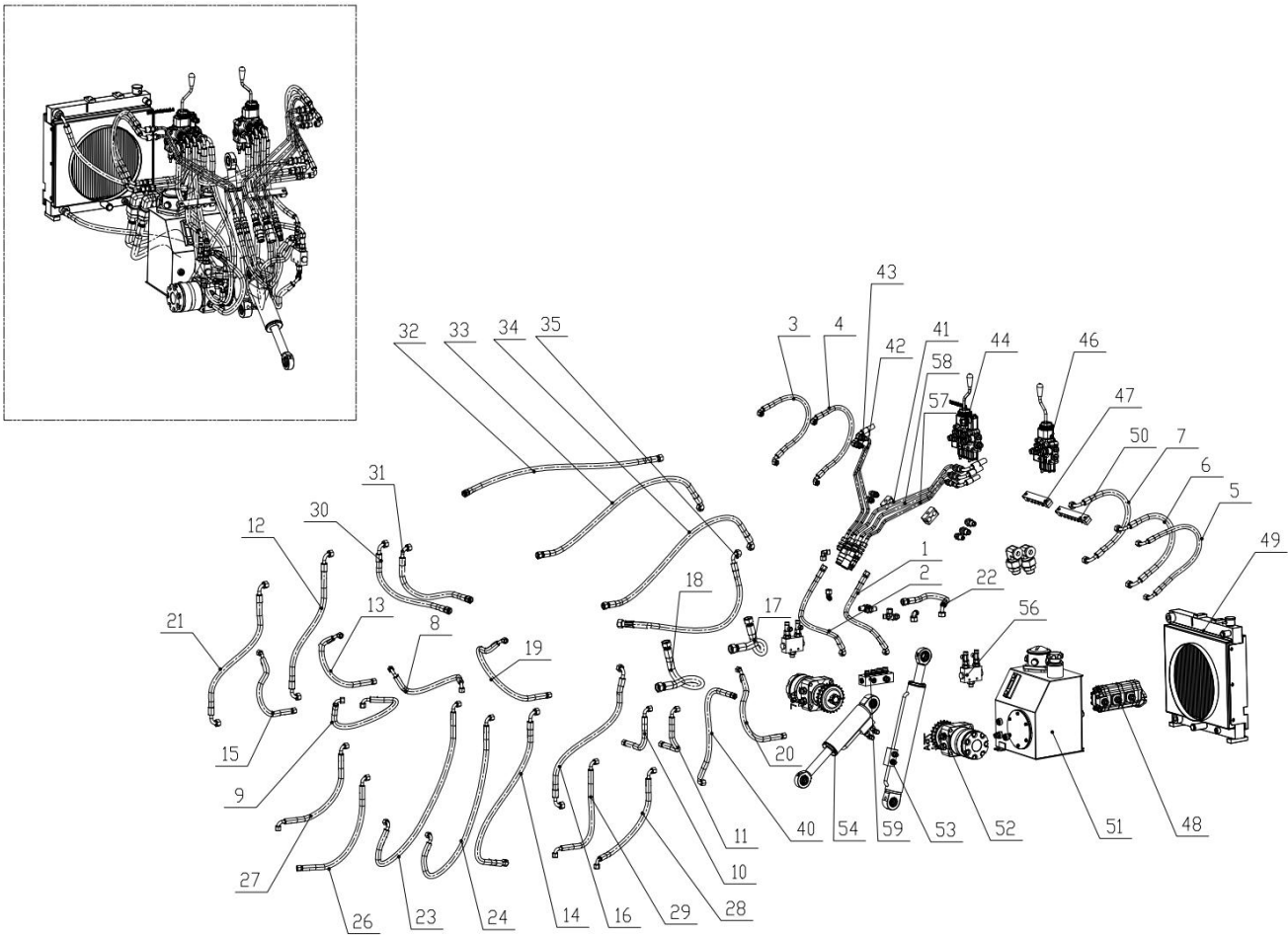
No	Part No	Description	Q' ty	Remark
1	5610310	Fuel tank	1	
2	5610300-01	Liquid level sensor	1	
3	5500221	Right fuel tank cover plate	1	
4	5610300-02	Fuel tank cap	1	
5	5610300-03	Pagoda joint -8mm	2	
6	5610300-04	120 * Φ3.55 sealing ring	1	

4.6 Lift Plate Assembly



No	Part No	Description	Q' ty	Remark
1	5540125	Lifting support plate assembly	1	
2	2800100-03-01	Bucket pins	2	
3	2800100-03-02	Pin limit block	2	
4	2800100-03-03	Compression springs	2	
5	2800100-03-04	Lift bars	2	
6	2800100-03-05	Elastic cylindrical pins	4	∅ 4*35

4.7 Hydraulic System Assembly (Dual pump configuration)

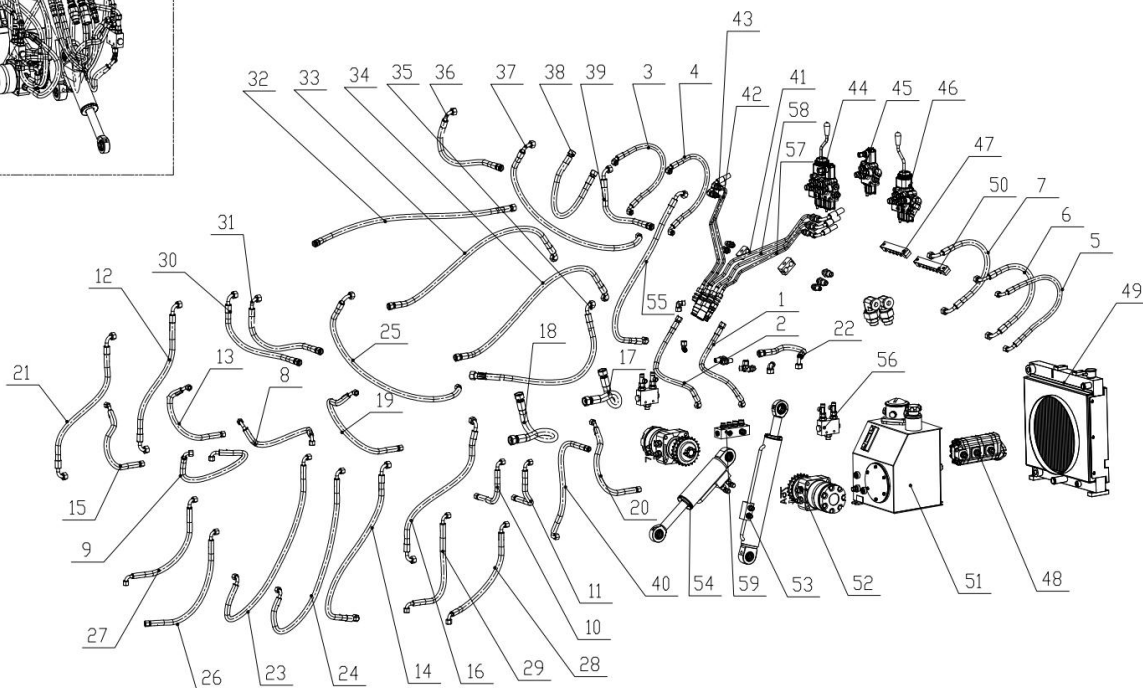
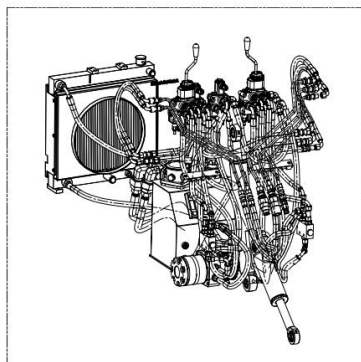


No	Part No	Description	Q' ty	Remark
1	5542301	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-525+护套
2	5542302	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-505+护套
3	5542303	Hose assembly	1	2SN-DN12-M21593-08-22/M21593-08-22-595-V0+护套
4	5542304	Hose assembly	1	2SN-DN12-M21593-08-22/M21593-08-22 (H70) -550-V15°+护套
5	5542305	Hose assembly	1	1SN-DN10-M21593-06-18H70-M21593-06-18H70-630-V0°+护套
6	5542306	Hose assembly	1	2SN-DN12-M21593-08-22 (H=70) /M21513-08-22-620
7	5542307	Hose assembly	1	2SN-DN12-M21593-08-22/M21513-08-22-590
8	5542308	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-490
9	5542309	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-700
10	5542310	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-550
11	5542311	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-600
12	5542312	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-690
13	5542313	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-500
14	5542314	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-680
15	5542315	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-370
16	5542316	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-1200
17	5542317	Hose assembly	1	2SN-DN10-M21593-06-18/M21593-06-18-540-V0°+护皮
18	5542318	Hose assembly	1	2SN-DN10-M21593-06-18H70/M21593-06-18-510H70-620-V0°+

				护皮
19	5542319	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H70-360
20	5542320	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H70-320
21	5542327	Hose assembly	1	1SN-DN13-M20513-08-22/M20593-08-22-720
22	5542328	Hose assembly	1	1SN-DN13-M20513-08-22/M20593-08-22-880
23	5542329	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-1040
24	5542330	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-1060
26	5542331	Hose assembly	1	1SN-DN12-M21513-08-22/M21543-08-22-350
27	5542332	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-540
28	5542333	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-590
29	5542334	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-610
30	5542335	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-520
31	5622301	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-730
32	5622302	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-930
33	5622303	Hose assembly	1	1SN-DN12-M21513-08-22/M21593-08-22-1480
34	5622304	Hose assembly	1	1SN-DN12-M21513-08-22/M21593-08-22-1530
35	5622305	Hose assembly	1	1SN-DN19-M21513-12-30/M21593-12-30-930
40	5622306	Hose assembly	1	1SN-DN19-M21513-12-30/M21593-12-30-960
41	5520201	Tube one	1	
42	5520202	Tube two	1	
43	5520203	Tube three	1	
44	5610400-01	Right control valve	1	
46	5610400-02	Left control valve	1	
47	5610400-03	Right pipe clamp	1	
48	5610200-11	Hydraulic pump	1	
49	3802114	LH380 radiator	1	
50	5610400-04	Left pipe clamp	1	
51	5610000-02	Hydraulic Oil Tank Assembly	1	
52	5610100-02	Right motor	1	
53	5522102	Lifting cylinder	1	
54	5522101	Pushing shovel oil cylinder	1	
56	5610400-05	Oil filling block	1	
57	5520204	Tube four	1	
58	5520205	Tube Five	1	

59	5610400-06	Return oil block	1	
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4.8 Hydraulic System Assembly (Three pump configuration)

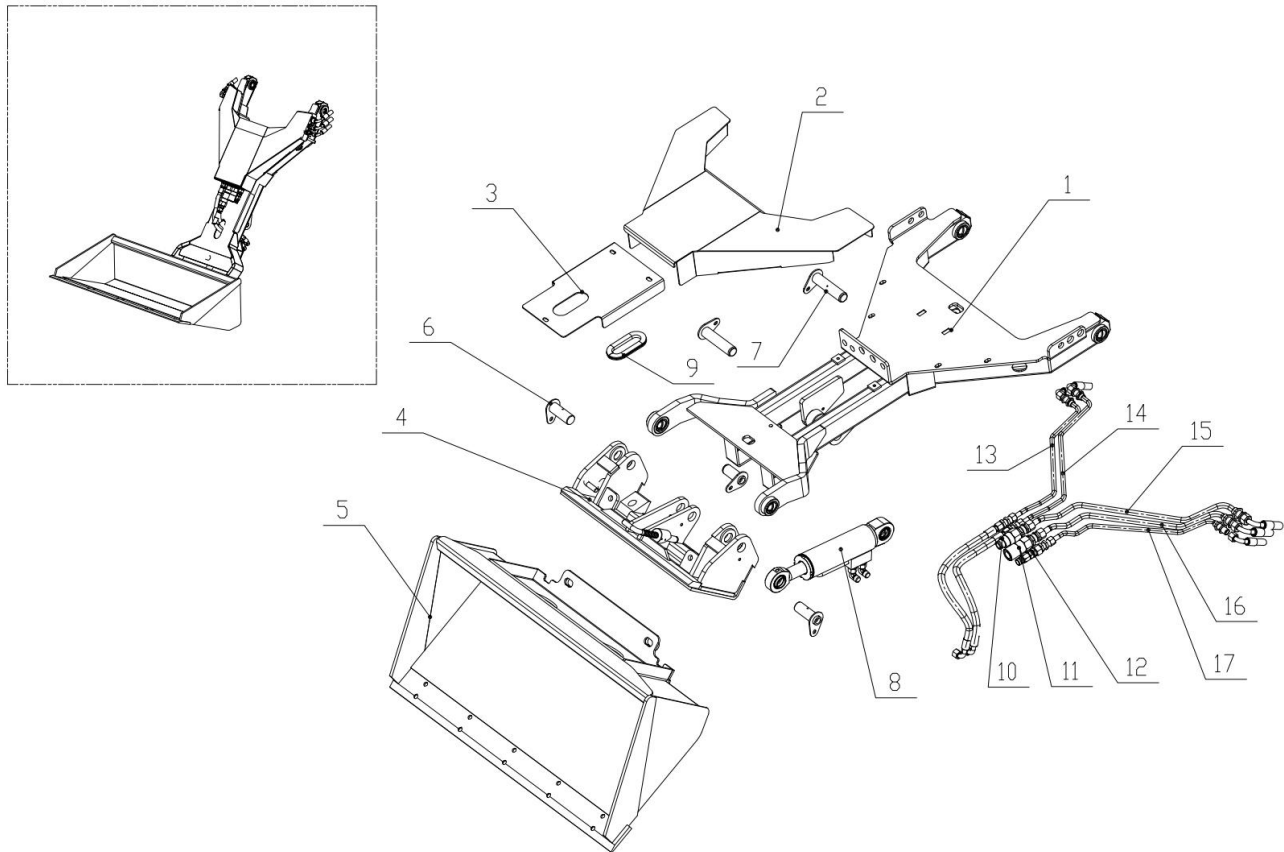


No	Part No	Description	Q' ty	Remark
1	5542301	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-525+护套
2	5542302	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-505+护套
3	5542303	Hose assembly	1	2SN-DN12-M21593-08-22/M21593-08-22-595-V0+护套
4	5542304	Hose assembly	1	2SN-DN12-M21593-08-22/M21593-08-22 (H70) -550-V15°+护套
5	5542305	Hose assembly	1	1SN-DN10-M21593-06-18H70-M21593-06-18H70-630-V0°+护套
6	5542306	Hose assembly	1	2SN-DN12-M21593-08-22 (H-70) /M21513-08-22-620
7	5542307	Hose assembly	1	2SN-DN12-M21593-08-22/M21513-08-22-590
8	5542308	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-490
9	5542309	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-700
10	5542310	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-550
11	5542311	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-600
12	5542312	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-690
13	5542313	Hose assembly	1	2SN-DN10-M21513-06-18/M21543-06-18-500
14	5542314	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-680
15	5542315	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18-370
16	5542316	Hose assembly	1	1SN-DN10-M21513-06-18/M21593-06-18-1200

17	5542317	Hose assembly	1	2SN-DN10-M21593-06-18/M21593-06-18-540-V0°+护皮
18	5542318	Hose assembly	1	2SN-DN10-M21593-06-18H70/M21593-06-18-510H70-620-V0°+护皮
19	5542319	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H70-360
20	5542320	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H70-320
21	5542327	Hose assembly	1	1SN-DN13-M20513-08-22/M20593-08-22-720
22	5542328	Hose assembly	1	1SN-DN13-M20513-08-22/M20593-08-22-880
23	5542329	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-1040
24	5542330	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-1060
25	5610500-02	Hose assembly	1	2SN-DN12-M21543-08-22/M21593-08-22-1350
26	5542331	Hose assembly	1	1SN-DN12-M21513-08-22/M21543-08-22-350
27	5542332	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-540
28	5542333	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-590
29	5542334	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-610
30	5542335	Hose assembly	1	2SN-DN10-M21513-06-18/M21593-06-18H60-520
31	5622301	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-740
32	5622302	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-940
33	5622303	Hose assembly	1	1SN-DN12-M21513-08-22/M21593-08-22-1480
34	5622304	Hose assembly	1	1SN-DN12-M21513-08-22/M21593-08-22-1530
35	5622305	Hose assembly	1	1SN-DN19-M21513-12-30/M21593-12-30-930
36	5622307	Hose assembly	1	2SN-DN12-M21543-08-22/M21593-08-22-1280
37	5622308	Hose assembly	1	1SN-DN12-M21513-08-22/M21513-08-22-630
38	5622311	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-690
39	5622310	Hose assembly	1	2SN-DN12-M21513-08-22/M21593-08-22-710
40	5622306	Hose assembly	1	1SN-DN19-M21513-12-30/M21593-12-30-960
41	5520201	Tube one	1	
42	5520202	Tube two	1	
43	5520203	Tube three	1	
44	5610400-01	Right control valve	1	
45	5610500-01	Accessory control valve	1	
46	5610400-02	Left control valve	1	
47	5610400-03	Right pipe clamp	1	
48	5610200-11	Hydraulic pump	1	
49	3802114	LH380 radiator	1	
50	5610400-04	Left pipe clamp	1	
51	5610000-02	Hydraulic Oil Tank Assembly	1	
52	5610100-02	Right motor	1	
53	5522102	Lifting cylinder	1	
54	5522101	Pushing shovel oil cylinder	1	
55	5622309	Hose assembly	1	1SN-DN12-M21513-08-22/M21593-08-22-990

56	5610400-05	Oil filling block	1	
57	5520204	Tube four	1	
58	5520205	Tube Five	1	
59	5610400-06	Return oil block	1	

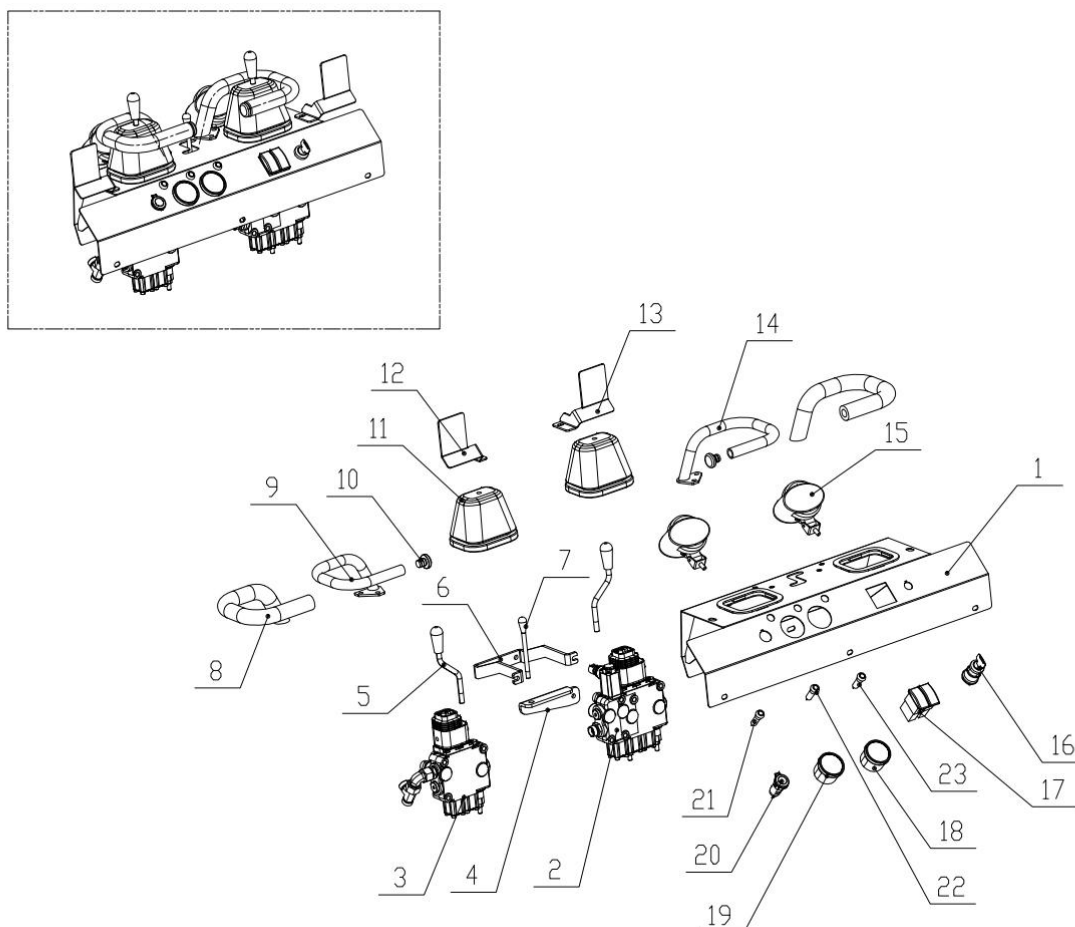
4.9 Lifting Arm Assembly



No	Part No	Description	Q' ty	Remark
1	5540124	Lift arm assembly	1	
2	5520125	Lift arm cover	1	
3	5540140	Lift arm cover plate	1	
4	5540125	Lift plate assembly	1	
5	6	Shovel hopper assembly	1	
6	3800208	Pin shaft assembly L=80	2	
7	5520105	Pin shaft assembly L=125	2	
8	5522101	Pushing shovel oil cylinder	1	
9	5610600-01	Rubber retainer	1	
10	5610600-02	Quick connector A	1	
11	5610600-03	Quick connector B	1	
12	5610600-04	Quick connector C	1	
13	5520201	Tube one	1	
14	5520202	Tube two	1	
15	5520203	Tube three	1	
16	5520204	Tube four	1	

17	5520205	Tube Five	1	
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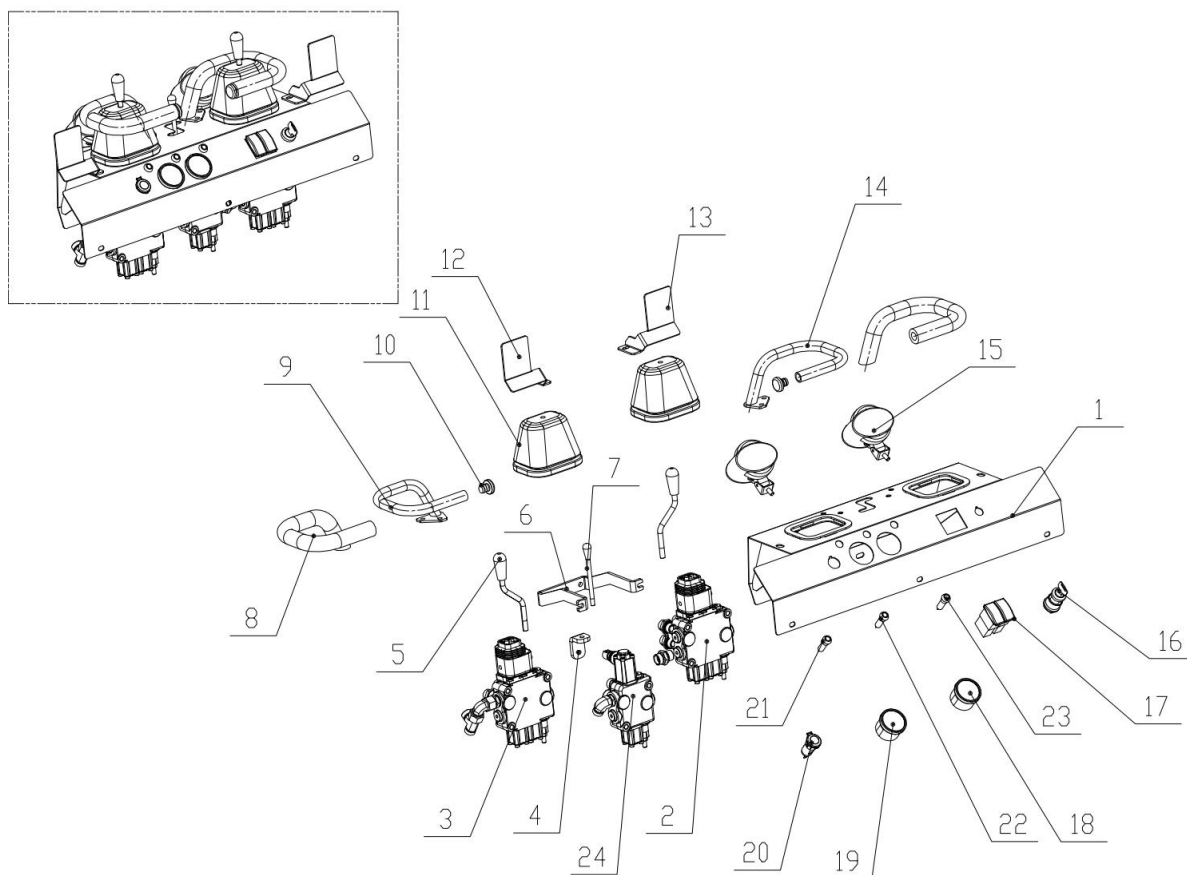
4.10 Operator panel (Dual pump configuration)



No	Part No	Description	Q' ty	Remark
1	5620300-01	Control panel	1	
2	5610400-01	Right control valve	1	
3	5610400-02	Left control valve	1	
4	48	Auxiliary reversing plate	1	
5	2310048	Bending handle rod	1	
6	5540131	Strengthening frame	1	
7	49	Auxiliary reversing lever	1	
8	5610700-01	Sponge protective sleeve	2	
9	5530114	Left handle	1	
10	3800210	Handle plug	1	
11	3802107	Tower shaped rubber sleeve	1	
12	5530110	Left anti pinch plate	1	
13	5530111	Right anti pinch plate	1	
14	5530113	Right handle	1	
15	5610700-02	LED lighting	2	

16	5610700-03	Start key	1	
17	5610700-03	Rocker switch	1	
18	5610700-04	Chronograph	1	
19	5610700-05	Oil level gauge	1	
20	5610700-06	Power socket	1	
21	5610700-07	Oil pressure indicator	1	
22	5610700-08	Water temperature indicator	1	
23	5610700-09	Power indicator	1	

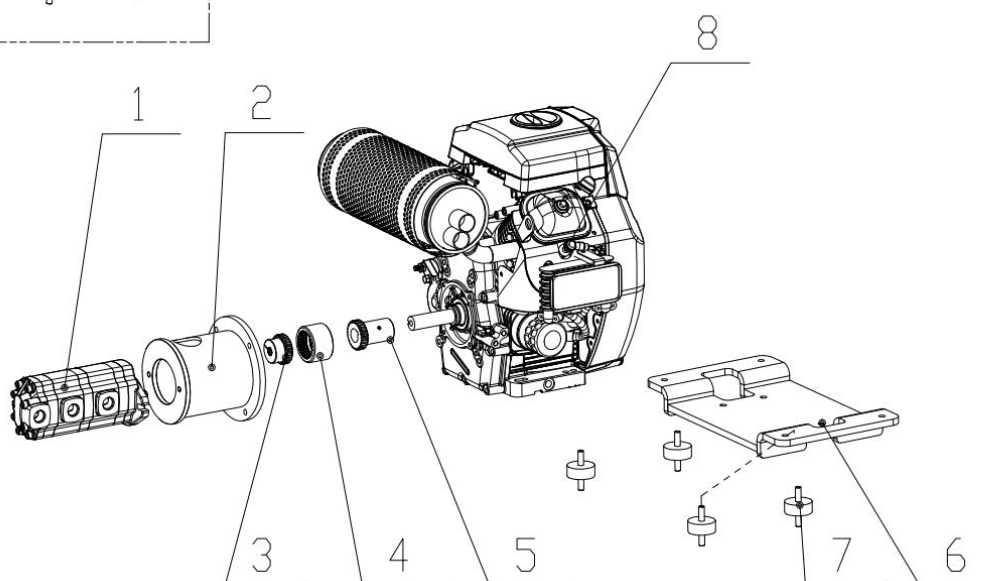
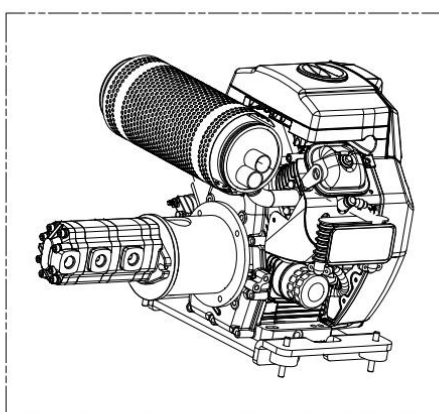
4.11 Operator panel (Three pump configuration)



No	Part No	Description	Q' ty	Remark
1	5620300-01	Control panel	1	
2	5610400-01	Right control valve	1	
3	5610400-02	Left control valve	1	
4	49A	Auxiliary reversing plate	1	
5	2310048	Bending handle rod	1	
6	5540131	Strengthening frame	1	
7	49	Auxiliary reversing lever	1	
8	5610700-01	Sponge protective sleeve	2	
9	5530114	Left handle	1	
10	3800210	Handle plug	1	

11	3802107	Tower shaped rubber sleeve	1	
12	5530110	Left anti pinch plate	1	
13	5530111	Right anti pinch plate	1	
14	5530113	Right handle	1	
15	5610700-02	LED lighting	2	
16	5610700-03	Start key	1	
17	5610700-03	Rocker switch	1	
18	5610700-04	Chronograph	1	
19	5610700-05	Oil level gauge	1	
20	5610700-06	Power socket	1	
21	5610700-07	Oil pressure indicator	1	
22	5610700-08	Water temperature indicator	1	
23	5610700-09	Power indicator	1	
24	5610500-01	Accessory control valve	1	

4.12 Gasoline engine assembly



No	Part No	Description	Q' ty	Remark
1	5620400-01	Hydraulic pump	1	
2	5620400-02	Pump seat	1	

3	5620400-03	Pump coupling	1	
4	5610200-08	nylon jacket	1	
5	5620400-04	Engine coupling	1	
6	5620400-05	Engine seat plate	1	
7	5620200-03	Diameter 50 shock-absorbing block	4	
8	5620400-06	Gasoline engine	1	