

WACKER NEUSON

MADE
BY



OPERATION & MAINTENANCE MANUAL

Mini Loader

SM325-24W

SM325-24T

Item	9200000210 & 9200000220
Revision	102

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01 – SAFETY

General Operation

Read, understand, and follow instructions before starting the Machine. Improper use may result in injury.

Keep hands, feet and clothing away from all moving parts.

Wear appropriate clothing and PPE including but not limited to safety glasses, long pants, safety shoes, and hearing protection.

Only allow use by those suitably competent and familiar with operation of the machine.

Always operate away from pedestrians and establish appropriate isolation measures.

Never carry passengers; keep pets and bystanders away from the machine and work site.

Do not refuel while the engine is running or with an ignition source in the area.

Do not operate any of the control levers unless you are standing with both feet firmly on the platform and firmly holding the grip handles.

Do not exceed the rated operating capacity. Do not place feet under the platform.

Do not operate on or near embankments. Look out for ditches, holes, etc. Beware of traffic when near roads.

Watch where you are driving, always look behind before and while reversing.

Warning: Engine exhaust contains Carbon Monoxide, an odourless deadly poison that can kill. Do not run an engine indoors or in confined spaces.

Never allow the load frame to free fall without the engine running as this can create a vacuum/air lock in the lift cylinders.

Always lower the load frame and/or place the attachment on the ground when parking or leaving the machine unattended.

Always stop the engine before leaving the operators platform.

Do not carry a load or heavy attachment with the load frame in a raised position.

Do not step off the platform with a load raised.

Never jerk the control levers, instead use a steady motion. Slow down before turning, as sharp turns may cause loss of control.

Stop the engine before making any adjustments to the attachments or the machine.

When carrying rocks or other bulky materials, maintain the bucket in a level position to minimise potential hazard of the load rolling back toward the operator.

Operate only in daylight or good artificial lighting.

Do not operate equipment while under the influence of alcohol or drugs, or while otherwise impaired.

Use extra care while loading or unloading the machine onto a trailer.

Do not touch equipment or attachment parts that may be hot from operation. Allow to cool before attempting to maintain, adjust, or service.

Never let children or untrained people operate or service the machine.

Do not allow any person or animal near the machine or its attachments whilst in operation. Stop the machine if any person or animal approaches.

Immediately replace worn, damaged, or missing decals.

REMEMBER – SAFETY IS YOUR RESPONSIBILITY

Use extra caution on uneven ground requires. Do not operate on uneven ground exceeding 15 degrees. If a slope is greater than 5 degrees, only travel up or down, not across.

Always have the heavy end of the machine uphill. Weight distribution will change, an empty bucket will make the rear of the machine heaviest, and a loaded bucket will make the front of the machine heaviest. Various attachments will change which end is heaviest. These same rules apply when loading and unloading the machine onto a trailer or truck.

Reduce speed over rough or uneven ground to reduce the likelihood of the machine tipping over.

Avoid turning on uneven ground and when you must, turn slowly keeping the heavy end of the machine uphill.

Do not operate near ditches or embankments, the machine could turn over if a wheel goes over an edge, into a ditch or if an edge collapses.

Use caution on wet grass & slippery surfaces that may reduce traction & cause wheel slip.

Identify and remove obstacles such as rocks, tree limbs, etc. from the work area. Watch for ruts or bumps as uneven terrain which could tip over the machine.

Operate in slow speed while on uneven ground to reduce changes in direction and speed.

If parking on uneven ground or hillsides always lower the load frame and attachment to the ground and chock the wheels.

If the machine becomes unstable, step clear. Never try to stabilise the machine by putting your foot on the ground.

Be aware of blind corners, shrubs, trees, or ends of fences that may obscure vision.

Keep children out of, and ensure they cannot enter the worksite. If a child enters the worksite stop and shut down the machine immediately.

Never carry children (or anyone) on a machine or any of its attachments.

Do not allow children to play on or to operate the machine or within the work area or site.

LOADING and UNLOADING

Machine may be safely operated for loading and unloading to and from trailers intermittently, at angles greater than the operations manual specification of 15 degrees. Note that safe loading practices on weight location and distribution of the machine must be observed when loading and unloading at an angle.

The machine must not be generally operated, under load or for shifting materials at angles greater than the operations manual specifications other than for loading and unloading of the machine itself.

03 – SERVICE

Servicing, Preventative Maintenance, and Repairs should be performed by an Authorised Wacker Neuson Dingo Dealer in accordance with manufacturer recommendations.

Before performing any service, repairs, maintenance, or adjustment, the machine must be shut down and isolated to prevent accidental starting.

Never run the machine in an enclosed area.

Perform all maintenance with the load frame fully lowered. If the load frame needs to be raised to perform tasks, use the cylinder lock provided or appropriate mechanical safety stand to secure it.

Keep the machine free of grass, leaves, or other debris build up. Clean oil or fuel spillage. Allow the machine to cool before storing.

Use extra care when handling fuels, they are flammable and vapours are explosive.

Use only an approved fuel container.

Eliminate all ignition sources, shut down the engine, and allow the engine to cool before removing the fuel cap or adding fuel.

Never refuel the machine indoors.

Never store the machine or fuel container inside where there is an open flame, eg near a water heater or furnace

Keep the container nozzle in contact with the tank during filling.

Stop and inspect the machine if you strike anything or hear an unusual noise from the machine. If necessary, repair the machine before starting again.

Use only Genuine Parts to ensure that the original standards are maintained.

This machine is provided with a maintenance free battery. Do not attempt to service or adjust the battery fluid levels. If the battery will not hold charge or is damaged it must be replaced.

Warning: Hydraulic fluid escaping under pressure can penetrate the skin and cause injury.

Keep hands and body away from potential or suspected leaks. Isolate the machine and contact your Authorised Wacker Neuson Dingo Dealer for repair.

04 – SPECIFICATIONS

Engine

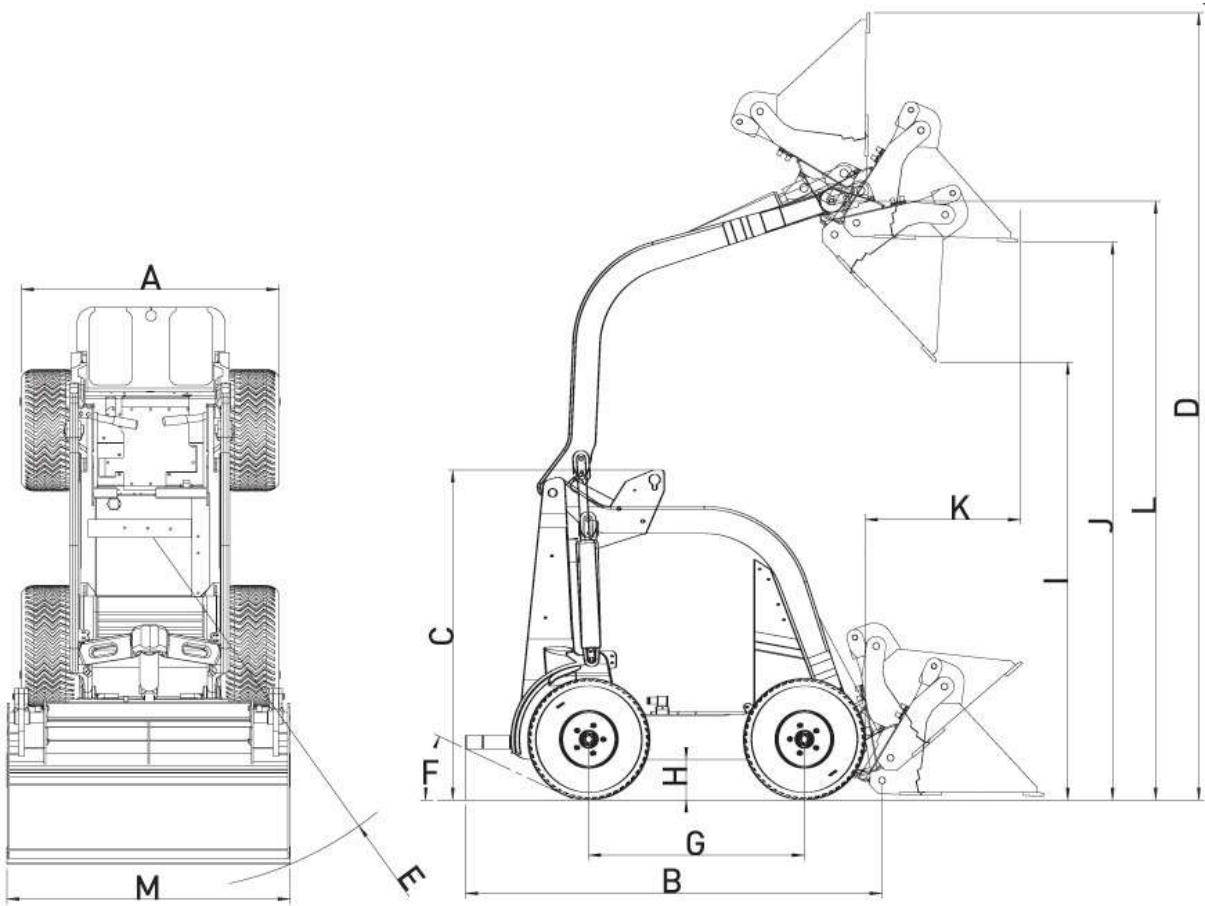
Make	Kohler Petrol EFI
Power	23hp (17kw)

Performance

Hydraulic Pumps	2
Pump Sizes	11 & 4cc
Relief Pressure (AUX)	3200 psi (220 bar)
Hydraulic Output	47 L/min
Max Travel Speed	7.5 km/h
Rated Lift Capacity	325kg WLL
Wheel Motors – wheeled	4
Wheel Motors - tracked	2
Auxiliary Hydraulic Circuits	2
Hydraulic Reservoir Capacity	76L
Machine Mass	862kg – SM325-24W 989kg – SM325-24T

Dimensions

A	Overall Width	850-1050mm
B	Overall Length	1600mm
C	Overall Height	1200mm
D	Max Operating Height with 4 in 1 Bucket	2080mm
E	Turning Radius with 4 in 1 Bucket	1300mm
F	Angle of Departure	25°
G	Wheel Base	800mm
H	Ground Clearance	135mm
I	Dump Height Standard Bucket	1450mm
J	Dump Height with 4in1 Bucket	1835mm
K	Reach Fully Raised 4 in 1 Bucket	800mm
L	Height to Hinge Pin	1940mm
M	Machine Width with 4in1 Bucket	1050-1200mm



05 – OPERATION

Become familiar with this manual and the engine manual.

Before commencing operation each day perform the following pre start checks:

5.1 Operating Instructions

Read all the safety instructions and the pre start section of this manual and the engine manual before operating the machine.

Do not operate any of the control levers including the auxiliary lever unless you are standing with both feet on the platform and firmly holding the grip handles.

The auxiliary hydraulic lever must be in the centre (disengaged) position before attempting to start the engine. The most common cause of reported starting difficulties are a result of the auxiliary lever being engaged therefore starting the engine while under load.

5.2 Machine

Fuel level; fill to 60mm from the top (do not overfill)

Engine oil level (refer to the engine manual)

Remove all debris from the machine

Check the air filter and clean if necessary

Check the bushes and pins for wear

Check the tyre pressure is 25-30PSI

Check fans and cooling ventilation are clean and clear from obstruction

Check the machine for leaks i.e. oils, fuel, water

Check the machine for any damaged or loose components

Check wheel nuts (85fld/115nm) daily for first 6 days of operation

5.3 Operator

Only those suitably competent and familiar with the machine, the attachments, and the intended use to may operate the machine.

The operator should wear appropriate clothing and personal protective equipment:

- Fully enclosed non slip footwear (safety boots)
- Long pants and shirt
- Safety glasses
- Hard hat if working in areas with a risk of falling items or overhead obstacles
- Hearing protection

Operator is supervised if undergoing training

5.4 Work Area

Ground conditions are firm and stable

Sloping ground has been identified

Holes have been identified and isolated

Embankments have been marked

Tree stumps, rocks and other hazards have been identified & removed or marked

Water courses (dams, creeks, rivers) have been clearly marked

Underground and aboveground service have been identified and isolated if necessary

Site physical hazards have been identified & removed or marked

Dust, noise, traffic and other adverse conditions have been controlled

Persons not involved in the work have been removed & excluded from the area

Children and animals have been removed & excluded from the area

5.5 Adding Fuel

Position the machine on a level surface, lower the load frame, turn off the engine, and remove the key.

Clean around the fuel tank cap and remove the cap. Use a funnel to add fuel as specified above to the fuel tank, fill until the fuel reaches 60-70mm below the top of the tank to allow for expansion. Do not fill the fuel tank completely full.

Replace the fuel cap securely. Clean away any fuel that may have spilt.

5.6 Checking the Engine

Check the engine oil level using the dip stick (refer to your engine manual for details).

5.7 Remove Debris from the Machine

Keep cooling fins, shrouds, vents, engine compartment, hoses, fittings, etc. clean and clear of dirt, debris, blockages, and restrictions to prevent overheating.

Park the machine on a flat surface, lower the load frame and turn off the engine. Remove the key.

Check the air filter for debris. If required, wipe away debris before and during each use.

Debris can build up in the engine compartment and must be cleared away before and during each use.

Do not put water directly onto the electrical system or ignition system. Brushing and blowing out dirt in these areas is safer than washing.

5.8 Tyres and Traction

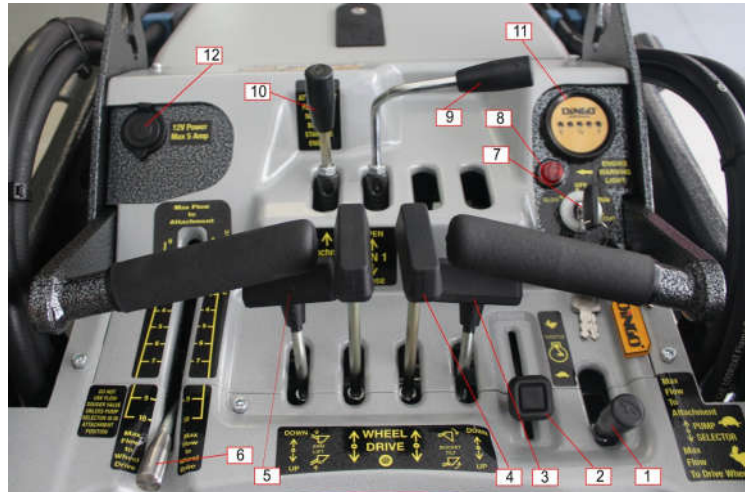
WARNING – Dingo tyres should be filled with water and maintained at 25-30 PSI.

Failure to do so will affect the weight distribution, and can drastically reduce the stability and carrying capacity of the machine.

A range of tyres to suit different applications, and equipment for water filling your tyres is available to purchase from your Authorised Wacker Neuson Dingo Dealer.

5.9 Control Panel

1. Pump selector
2. Throttle
3. Crowd tilt lever
4. Drive control levers
5. Load frame lever
6. Flow divider control
7. Ignition
8. Engine warning light
9. 4in1 Bucket lever
10. Auxiliary control
11. Fuel gauge
12. 12V Power socket



5.10 Control Levers/ Control Panel

Ignition Switch

A keyed ignition switch is used to start and stop the engine. Check engine manufacturer's manual for starting instructions.

Throttle

Move the control forward to increase the engine speed and backward to decrease the engine speed.

Drive Control Levers

To go forward, slowly push the right and left drive control levers forward. To go backward, slowly pull the right and left drive control levers backward. To go straight, apply equal pressure to both drive control levers.

To turn, decrease pressure on the drive control lever closest to the direction you want to turn.

The further you move the drive control levers in either direction, the faster the machine will move in that direction.

To slow or stop, move the drive control levers into neutral (if released the control levers will automatically return to neutral).

The machine is capable of turning on the spot by applying equal power to each drive lever in opposite directions.

Attachment Tilt Lever

To tilt the attachment forward, slowly push the tilt lever forward.

To tilt the attachment backward, slowly pull the tilt lever backward.

Load Frame Lever

To lower the load frame, slowly push the arm lever forward.

To raise the load frame, slowly pull the arm lever backward.

Auxiliary Hydraulic Levers

The auxiliary hydraulic levers allow you to alter the direction of rotation of hydraulic driven attachments or stop them completely.

Ensure the auxiliary hydraulic levers are in the neutral position before starting and stopping the engine.

To operate the attachment in forward direction, slowly pull the auxiliary lever rearward.

To operate the attachment in the reverse direction, slowly push the auxiliary lever forward.

4 in 1 Bucket

The 4 in 1 bucket lever opens and closes the bucket. Push the lever forward to open the bucket, pull the lever backward to close the bucket. When you let go of the lever it will return to the centre position and hold the bucket in that current position.

Pump Selector

When faster ground speed and lifting speed is required more than attachment speed and power, push the pump selector lever to the forward position.

When faster attachment speed and power is required (trenching, post hole digging etc.) more than ground speed and lifting power, pull the pump selector lever to the rearward position.

Flow Divider Control

In its normal operating position no flow division is taking place. Moving the lever forward diverts oil flow to the attachment and less is available to the travel and load frame. This allows for greater concentration of hydraulic power to the attachment.

The flow divider is mainly used for trenching, rotary hoeing and stump grinding where greater hydraulic power is required to the attachment and less for ground speed.

Starting the Engine

Stand on the platform and move the auxiliary hydraulics lever to neutral. Follow instruction on starting the engine as detailed in the engine manufacturer's manual.

Stopping the Engine

Move the auxiliary hydraulics lever to neutral and the throttle to idle, and turn the key to off.

Refer to the engine manual.

NOTE: if the engine has been working hard or is hot, let it idle for a minute before turning the ignition key to off. This helps cool the engine before it is stopped. In an emergency, turning the ignition key to off will stop the engine.

Stopping the Machine

Park on firm, level ground, move the auxiliary hydraulics lever to neutral, the throttle to idle, lower the load frame to the ground, turn the ignition key to off, remove the key, and chock the wheels.

Caution: Remove the key from the ignition while the machine is unattended to avoid unauthorised and unsafe use.

Moving a Non Functioning Machine

The best way to move a non-functioning machine is by forklift or crane. It is also possible to push or tow a machine slowly over a short distance without the use of the engine if required. Contact your Authorised Wacker Neuson Dingo Dealer for more information.

Using Cylinder Locks

Important: Normal maintenance should be completed with the load frame fully lowered. If maintenance or repairs requires the load frame to be raised, use the cylinder lock provided.

Warning: The load frame may lower when in the raised position. To avoid this hazard always install cylinder locks or safety stand, available through your Authorised Wacker Neuson Dingo Dealer.

06 – ATTACHMENTS

6.1 Connecting

Use only Genuine Wacker Neuson Dingo attachments. Attachments can change the stability and operating characteristics of the machine. Use of non-genuine attachments that do not meet the machine manufacturer specifications may void warranty.

IMPORTANT

Before connecting an attachment to the machine make sure the mount plates are free of any dirt or debris. Dirt build up in the bottom of the receiver plate will become compacted and ultimately cause damage.

- Move pump control switch to slow position.
- Slowly push the attachment tilt lever forward to tilt the mount plate forward.
- Position the mount plate into the upper fold of the attachments receiver plate.
- Raise the load frame while tilting back the mount plate at the same time.
- The attachment should be raised enough to clear the ground and the mount plate tilted all the way up.
- Turn the ignition key to off to stop the engine.
- Engage the attachment lock pins (the lock pins should go down 15mm as they turn). Note lock pins are located on the outer edge of the mount plate and should be turned towards the inside to engage.

For hydraulically powered attachments;

- With the engine turned off move the auxiliary hydraulics lever to the forward, backward, and back to neutral position to relieve hydraulic pressure at the hydraulic couplers.
- Ensure hydraulic connections and clean on the attachment and machine.
- Remove protective plugs from the hydraulic couplers on the machine and connect them together to prevent contamination during operation.
- Slide collar back on hydraulic coupler and connect attachment couplers to machine couplers. There will be two connections to make.
- Confirm that connection is secure by pulling on the hoses.

6.2 Disconnecting

- Lower attachment to the ground or onto a trailer.
- Turn the ignition key off to stop the engine.
- Move the auxiliary hydraulics lever forward, backward and back to neutral position to relieve hydraulic pressure at the hydraulic couplers.
- Slide collar back on the hydraulic coupler and disconnect attachment couplers from machine couplers (Note if this is difficult return to and repeat the 3rd step).
- Connect attachment hoses together to prevent contamination during storage.
- Install protective cover onto the Machines hydraulic couplers.
- Disengage the attachment lock pins by turning them to the outside.
- Start the engine, tilt the mount plate forward and back machine away from the attachment.

07 – TRANSPORT

Always observe and adhere to applicable local, state, and federal legislation and regulations.

When loading/unloading on a trailer, always follow these instructions:

- Never load or unload a machine on a trailer unless the trailer is attached to the vehicle.
- Always climb the ramps with the heavy end of the machine up hill.
- Attachments should always be secured in their designated positions on the trailer with suitable load restraint equipment to assist correct weight distribution.
- Ensure the entire load is positioned for correct weight distribution and load over the tow hitch in accordance with the tow vehicle manufacturers recommendations.
- Once in position on the trailer lower the load frame
- Turn the key to off to stop the engine.
- Remove the key.
- Secure the machine at the designated tie down points to the trailer with suitable load restraint equipment.

08 – MAINTENANCE

It is essential to maintain the engine and the machine in accordance with manufacturer recommendations. Authorised Wacker Neuson Dingo Service Dealers provide expert servicing, preventative maintenance, and repair using Genuine Wacker Neuson Dingo parts to keep your machine running smoothly and to sustain validity of your warranty.

Refer to the Pre Start section for maintenance that should be completed before every start.

8.1 Air Filter

The air filter is of extreme importance to ensure the air entering the engine is clean. Blocked or damaged air filters can greatly reduce engine life. The interval between changes of air filter will depend on the operating conditions. Air filter replacement is recommended, not cleaning of the air filter.

In dusty conditions check air filters daily and replace if necessary.

Never blow out your air filter with compressed air.

If the filter or filter housing is damaged, stop the engine immediately and replace the damaged components. Failure to stop work when the air filter or housing is damaged could result in irreparable damage.

8.2 Bushes & Pins

Your machine is fitted with Duralon bushes and chrome pins in the load frame.

These bushes are wear parts and require regular inspection not less than weekly.

To check the condition of the bushes:

- Remove attachment from the front of the Dingo
- Raise the load frame until the mount plate is at waist height
- Manually move the mount plate back and forth to identify movement at the pivot pins in the mount plate
- Manually move the load frame back and forth to identify movement at the pivot pins in the load frame
- If bushes show signs of any wear allowing movement at these points, contact your Authorised Wacker Neuson Service Dealer.
- A small amount of movement indicates initial wear which quickly accelerates if not attended to promptly.

8.3 Engine Oil

Refer to the engine manual for required oil types, crankcase capacity and viscosity.

Dingo recommends engine oil is checked daily and changed every 100 hours.

8.4 Oil Filter

Refer to engine manufacturer recommendations.

8.5 Tyres

Before removing wheels, place the machine on a solid, level surface. Chock the wheels prior to using a suitable lifting device to raise the machine, and secure on appropriate stands or similar.

8.6 Hydraulic System.

The hydraulic oil type, viscosity, volume, and cleanliness is critical to the performance and longevity of the hydraulic system. If no leaks are present and volume is unchanged there is no requirement to open the system between scheduled service intervals. Only open the system (filler cap) in clean, controlled environments at scheduled service intervals.

8.7 Battery

The capacity of the battery is 12v 380cca.

The battery must be kept clean, free of corrosion, and fully charged.

Like all machines, the battery charging system is intended to maintain charge in a serviceable battery. If the machine is not to be used for extended periods, maintain the battery charge via an external battery charger.

8.8 Track Tensioning

Prior to operating the machine inspect tracks for damage and or wear. Check for rocks or dirt that may have jammed in the undercarriage causing premature damage or wear.

Clean the undercarriage frequently and prevent build-up of sand, mud or gravel.

Maintain the correct tension on tracks. With the machine off the ground you should have between 10mm and 20mm of sag in the middle of the track frame, between the track and middle roller.

Check the track tension as follows.

- Park the loader on firm level ground
- Raise the loader using suitable means
- Use additional supports for the loader
- Tracks should be off the ground
- Stop the engine
- Adjust the track tension
- Lower the machine to the ground
- Start the engine and slowly move the loader forward checking the tracks are fitted and working correctly. Repeat the tensioning process if required.

Over-tensioning the tracks may cause shortened undercarriage component life, damage to rubber track internal bands and increases the chance of throwing a track.

Regularly check undercarriage components for wear. Excessively worn undercarriage will cause unnecessary wear on rubber tracks.

When fitting new rubber tracks ensure the undercarriage components are in good condition and will support your new rubber tracks. Installing new tracks on a worn undercarriage may shorten their life. Wacker Neuson recommends the replacement of tracks be completed by an authorised Wacker Neuson service Agent

Inappropriate machine operation may also affect the life of your undercarriage. Take care when turning on hard surfaces such as concrete or asphalt.

09 – TROUBLESHOOTING

Problem	Possible Causes	Corrective Action
Starter does not crank engine	Flat battery	Charge battery. Replace if required
	Loose/corroded battery connections	Check connections. Repair or replace as required
	Damaged ignition switch	Test ignition switch. Repair or replace as required
Engine will not start, hard to start or fails to keep running	Auxiliary hydraulics lever is engaged	Disengage the auxiliary hydraulics lever
	Low fuel level	Add fuel
	Air filter dirty / blocked	Clean housing and replace filter
	Fuel contamination	Contact Authorised Dealer for repair
Engine loses power	Engine load is excessive	Reduce ground speed
	Air filter dirty / blocked	Clean housing and replace filter
	Oil level in engine crankcase is low	Add engine oil to correct level
	Cooling fins and air passages under engine blower housing are blocked	Remove obstruction from cooling fins and air passages
	Fuel contamination	Contact Authorised Dealer for repair
Engine overheats	Engine load is excessive	Reduce ground speed
	Oil level in engine crankcase is low	Add engine oil to correct level
	Cooling fins in the radiator are blocked or damaged reducing air flow	Clean or replace radiator as required
Abnormal vibration	Engine mounting bolts are loose	Tighten engine mounting bolts
	Engine mounts are broken	Replace engine mounts
Machine does not drive	Hydraulic fluid level low	Add hydraulic oil to correct level
	Traction pump drive coupler is loose or broken	Contact Authorised Dealer for repair
	Pump and/or wheel motor is defective or damaged	Contact Authorised Dealer for repair
	Control valve is defective or damaged	Contact Authorised Dealer for repair
	Relief valve is defective or damaged	Contact Authorised Dealer for repair

Notes

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