

DONG FENG
Factory Direct Tractors

Operator's Manual

ZB 65 / 85



FOREWORD

Congratulations on your purchase of a new DongFeng Factory Direct Tractor.

DongFeng is Chinese for 'DongFeng'.

The ZB Series is built to exacting DongFeng standards at the Changzhou Dongfeng Agricultural Machinery Factory. They are designed to meet the needs of the Australian Lifestyle Farmer while representing outstanding value. Safety is our highest priority and your tractor is fitted with a certified Roll Over Protective Structure

Performance is taken care of with a four cylinder, direct inject diesel engine that provides high torque, reduced vibration and low noise.

Great features include, four wheel drive, hydraulic power steering and two-speed P.T.O..

A number of implements can be fitted to your tractor enabling you to take on a wide variety of tasks around your farm. Hanmey implements are ideally suited to your tractor. Find out more at hanmey.com.au

DongFeng Tractors are subject to continuous improvement and change without notice. Therefore, there may be some difference between the manual and illustrated parts catalogue and your actual tractor. Dealers or operators are requested to provide the serial number, stock number (if available) and date of manufacture of the tractor when placing an order for spare parts. This helps to ensure the correct part is provided.

Take the time to read this manual carefully for your safety and awareness of your machine. With a little care you can look forward to a lifetime of service on a lifestyle property.

DongFeng Tractors,
Australia.

November 2012

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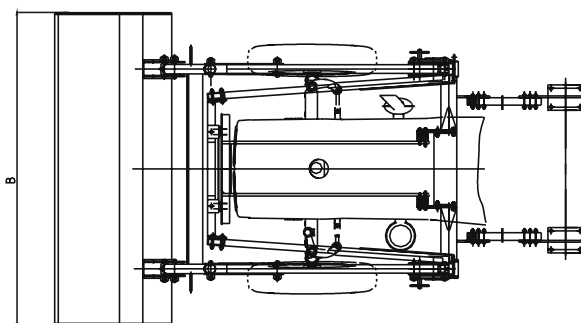
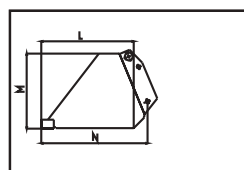
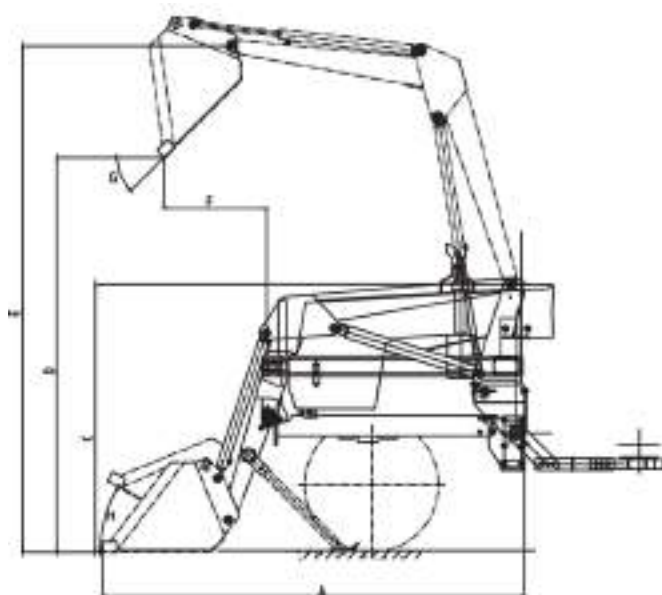
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Specifications

Tractor Model	ZB65	ZB85
Drive type:	4WD	
Horsepower:	65HP	85HP
Overall length (front weight to link end): (mm)	3890	
Overall width (outer wheel tread): (mm)	1830	
Height to R.O.P.S (top): (mm)	2550	
Height to canopy (top): (mm)	2585	
Height to steering wheel: (mm)	1750	
Ground clearance: (mm)	320	
Tractor weight with ballast: (kg)	3000	3200
Minimum turning radius: (m)	4.1	
Speed:	forward (km/hr)	1.57-36.61
	backward (km/hr)	1.60-36.81
Engine Model	LR4B3-23	LR4M5-23
Type:	Direct injection, vertical Liquid Cooled 4 Cyl Diesel	
Gross power (12hr rated power kw/hp):	48.0/65	62.0/85
Cylinders:	4 Cyl	
Bore and stroke: (mm)	108 X 125	110 X 135
Compression:	17.0 : 1.0	
Displacement: (L)	4.58	5.13
Speed rated at: (rpm)	2300	
Gearbox:	Synchromesh	
Gears:	4 x (3+1)	
	12 Forward, 4 Reverse	
Brake type:	Wet Multi Disc	
Clutch type:	Dry Type Dual Stage	
Rear differential lock:	Mechanical	
P.T.O. type:	Live	
P.T.O. rotating speed:	540/1000	
P.T.O. kW/HP:	43.6/58.5	
3PL capacity at Ball End: (kg)	1200kg (cat 2 linkage)	
Hydraulics: Main pump:	38L/min	
Power steer pump: (L)	2L	
Fuel capacity: (L)	60	
Engine Oil: (L)	10	
Transmission Oil: (L)	25	
Hydraulic Oil Reservoir: (L)	15	
Front Differential Oil: (L)	7	
Front Hubs Oil: (L)	2 X 1	
Front tyre size - Agricultural:	11.2-24	
Rear tyre size - Agricultural:	16.9-30	
Front tyre size - Turf	12.4-24	
Rear tyre size - Turf	16.9-30	

Front End Loader Specifications

	Loader attachment model	BL-65	BL-85
A	Overall length (mm) (With bucket on the ground)	3170	3170
B	Bucket width (mm)	1840	1840
C	Overall height (mm) (With bucket on the ground)	1655	1655
D	Clearance with bucket dumped	2118	2118
E	Maximum lifting height (mm) (From ground to bucket pivot)	2888	2888
F	Reach the bucket (mm) (Bucket fully lifted and at 45° dumping angle)	800	800
G	Bucket dumping angle	76°	76°
H	Bucket rollback angle	32°	32°
L	Depth of bucket (to back of inner shell) (mm)	770	770
M	Height of bucket (mm)	545	545
N	Depth of bucket (to pivot pin) (mm)	970	970
	Maximum opening angle of clamping bucket	88°	88°
	Bucket cubage (m³)	0.38	0.38
	Carrying capacity (kg)	1000	1000
	Mass of loader attachment (kg)	925	925
	Minimum operating flow required	20L/min	20L/min
	Maximum operating flow allowed	35L/min	35L/min
	Minimum operating pressure required	10MPa	10MPa
	Maximum operating pressure allowed	16Mpa	16Mpa



Safety Precautions

• Recognize safety information

This is a safety — alert symbol. When you see this symbol on your machine or in this manual, it is to alert you to the potential for personal injury. Follow recommended precautions and safe operating practices.



• Warnings and cautions

DANGER, WARNING, and CAUTION — is used in this safety manual to alert you to safety issues. DANGER identifies the most serious hazards. DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.



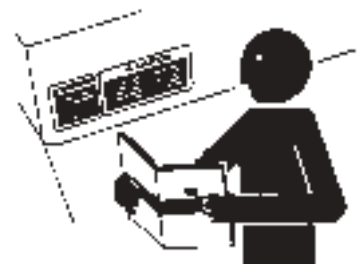
• Follow safety instructions

Carefully read all safety messages in this manual and on your machine. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your DongFeng dealer.

Learn how to operate the machine and how to use the controls properly. Do not let anyone operate without instruction. Keep your machine in proper working condition.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

If you do not understand any part of this manual and need assistance, contact your DongFeng dealer.



• Key start your tractor only

Avoid possible injury or death from machinery runaway.
Do not start engine by shorting across starter terminals.
Machine will start in gear If normal circuitry is bypassed.

NEVER start engine while standing on the ground. Start engine only from operator's seat, with transmission in neutral or park.



Safety Precautions

• Use seat belt and foldable ROPS properly

Only operate the tractor when the ROPS is locked out in the 'up' or extended position, ALWAYS use your seat belt to minimize the chance of injury from an overturn accident.

Only fold the ROPS to access low clearance areas. DO NOT operate the tractor with the ROPS down or not properly installed. DongFeng Tractors are equipped with a foldable Roll-Over Protective

Structure (ROPS). The ROPS (A) should be kept in the 'up' or extended position (as pictured) with lock out pins (C) retained with R-clips (B), except when it is necessary to fold it for low clearance access.

A ROPS

B R-clips

C Lock out Pin



• Handle chemicals safely

Direct exposure to hazardous chemicals can cause serious injury. Potentially hazardous chemicals used with DongFeng equipment include such items as lubricants, coolants, paints, and adhesives.

Before you start any job using a hazardous chemical, you should know exactly what the risks are and how to do the job safely. Then follow procedures and use recommended safety equipment.



• Operate Tractor Safely

Features designed into your tractor make operation Safer and let it perform a wide variety of jobs. Use your tractor only for specified jobs it was designed to perform: implement carrier, load mover, remote power source, or transport Unit - not a recreational vehicle.

Careless use or misuse can result in unnecessary accidents. Be alert to hazards of tractor operation. Understand causes of accidents and take every precaution to avoid them. Most common accidents are caused from:

- Tractor misuse.
- Improper starting procedures
- Crushing and pinching during hitching
- Collisions with other motor vehicles
- Getting entangled in P.T.O. shafts
- Falls from tractors

Avoid accidents by taking the following precautions:

Before dismounting, put the transmission in NEUTRAL and APPLY the PARK BRAKE. Leaving the transmission in gear with the engine stopped will NOT prevent the tractor from moving. Be sure everyone is clear of the tractor and attached equipment before starting the engine.

Never try to get on or off a moving tractor.

When the tractor is left unattended, place the transmission in NEUTRAL, apply the park brake, lower implements to the ground, stop the engine and remove the key.

CAUTION

- | | |
|---|--|
| 1. Read Operator's manual before operating this tractor. | or operating around hazards, on rough ground or steep slopes. |
| 2. Keep all shields in place. | |
| 3. Hitch towed loads only to drawbar to avoid rearward upset. | 8. Couple brake pedals together for road travel. |
| 4. Make certain everyone is clear of machine before starting engine or operation. | 9. Use flashing warning lights on highway unless prohibited by law. |
| 5. Keep all riders off tractor and equipment. | 10. Stop engine, lower implement to ground and shift to "PARK" or set brakes(s) securely before dismounting. |
| 6. Keep hands, feet and clothing away from power-driven parts. | 11. Wait for all movement to stop before servicing machinery. |
| 7. Reduce speed when turning or applying individual brakes | 12. Remove key if leaving tractor unattended. |



• Hillside safety

Always wear your seat belt with the ROPS in the up extended position.

Avoid holes, ditches, and obstructions which could cause the tractor to tip, especially on hillsides. Avoid sharp, uphill turns.

Never drive near the edge of a gully or steep embankment, as it might cave in.

Driving forward out of a ditch or up a steep slope could cause the tractor to tip over rearward. Back out of these situations if possible.

While mechanical front wheel drive greatly increases traction, it DOES NOT increase the stability of the tractor. With mechanical front wheel drive engaged, the tractor can climb steeper slopes than a two wheel drive tractor can negotiate, but it does not become more stable. Use extra caution when negotiating steep slopes in four wheel drive.

Danger of overturn increases greatly with a narrow wheel track, at high speed, and on slopes.

Hitch towed loads only to the drawbar. When using a chain, take up the slack slowly.



• Hearing safety

Prolonged exposure to loud noise can cause hearing loss or impairment.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against hearing loss from loud noise.



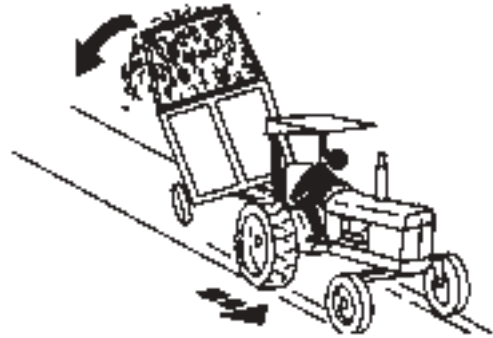
Safety Precautions

• Use low gear on hills

Shift to a low gear before descending a steep hill. This improves your control of the tractor with little or no braking. Use engine braking to reduce speed before applying the tractor brakes. Run-away tractors often tip over. Never coast downhill.

When driving on icy, wet or graveled surfaces reduce speed and be sure the tractor is properly ballasted to avoid skidding and loss of steering control. For best control, engage mechanical front wheel drive (if equipped).

Additional ballast may be needed for transporting heavy linkage mounted implements. When the implement is raised, drive slowly over rough ground, regardless of how much ballast is used.



• Operator only

Only allow the operator on the machine. Keep riders off. Riders or passengers on the machine are subject to injury such as being struck by foreign objects, being jolted and thrown off, and slipping and falling of the machine. Riders also obstruct the operator's view resulting in the tractor being operated in an unsafe manner.

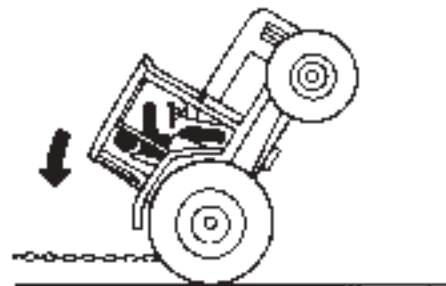


• Getting out of sticky situations safely

Attempting to free a stuck machine can involve safety hazards such as the tow tractor tipping backwards and overturning. The tow chain or tow bar can also fail and recoil from its stretched condition causing injury and damage.

Back your tractor out if it gets bogged down in mud unhitch any towed implements. Dig mud from behind the rear wheels. Place boards behind the wheels to provide a solid base and try to back out slowly. If necessary, dig mud from the front of all wheels and drive slowly ahead.

If towing with another unit, use the tow bar and a long chain (a cable is not recommended). Inspect the chain for flaws. Make sure all parts of the towing equipment are of adequate size and strong enough to handle the load always hitch to the drawbar of the towing unit. Do not hitch to the front push bar attachment point. The hitch point should never be above the rear drive axles.



Safety Precautions

Before moving, clear the area of people. Apply power smoothly to take up the slack. A sudden pull could snap any towing equipment causing it to whip or recoil dangerously.

• Avoid high-pressure fluids

Escaping fluid under pressure can penetrate the skin causing serious injury.

Avoid the hazard by relieving pressure before disconnecting hydraulic or other lines. Tighten all connections before applying pressure.

Search for leaks with a piece of cardboard. Protect hands and body from high pressure fluids.

If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

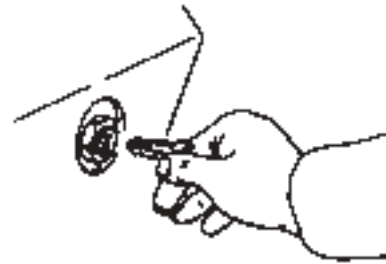


• Park tractor safely

To park tractor safely:

- Disengage the P.T.O..
- Lower the equipment to the ground.
- Put the gear shift lever into neutral.
- Apply the hand brake.
- STOP the engine.
- Remove the key.

Before you leave the operator's seat, wait for the engine and attachment parts to stop moving.



• Fuel and fire safety

Handle fuel with care; it is highly flammable. Do not refuel the machine while smoking or when near open flame or sparks.

Always stop the engine before refueling the machine. Fill the fuel tank outdoors.

Prevent fires by keeping the machine clean of accumulated trash, grease, and debris. Always clean up spilled fuel.



Safety Precautions

• Prepare for emergencies

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy. Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.



• Do not use starting fluid

DO NOT use starting fluid to start DongFeng tractors.



• Wear protective clothing

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause hearing impairment or loss.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against hearing loss from uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating the machine.



• Work in ventilated area

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and ventilate the area with clean outside air.



Safety Precautions

• Avoid contact with pesticides

The enclosed cab does not protect against inhaling harmful pesticides. Respiratory protection is required. If pesticide / herbicides are used and respiratory protection is required, wear an appropriate respirator inside the cab.

Within the cab, wear personal protective equipment as required by the hazardous chemical safety instructions.

Remove protective equipment and store in a closed box or some other type of sealable pesticide resistant container, such as a plastic bag.

Clean your shoes or boots to remove soil or other contaminated particles prior to entering the cab.



• Stay clear of rotating drivelines

Entanglement in rotating driveline can cause serious injury or death.

Keep tractor master shield and driveline shields in place at all times. Make sure rotating shields turn freely. Wear close fitting clothing. Stop the engine and be sure P.T.O. driveline is stopped before making adjustments, connections, or cleaning out P.T.O. driven equipment.



• Use safety lights and devices

Avoid collisions with other road users when using slow moving tractors with attachments or towed equipment, and self-propelled machines on public roads. Frequently check for traffic from the rear, especially in turns, and use turn indicators.

Use headlights, flashing warning lights, and turn indicators day and night. Follow local regulations for equipment lighting and marking. Keep lighting and marking visible, clean, and in good working order.

Replace or repair lighting and marking that has been damaged or lost. A safety lighting kit is available from your DongFeng dealer.



Safety Precautions

• Safety chains

A safety chain will help control towed equipment should it accidentally separate from the drawbar.

Using the appropriate adapter parts, attach the chain to the tractor drawbar support or other specified anchor location.

Provide only enough slack in the chain to permit turning.

See your DongFeng dealer for a chain with a strength rating equal to or greater than the gross weight of the towed machine.

Do not use safety chain for towing.



• Transport safety

A disabled tractor is best transported on a flatbed carrier. Use chains to secure the tractor to the carrier.

Never tow a tractor at a speed greater than 16 km/h (10mph). An operator must steer and brake the tractor under tow.



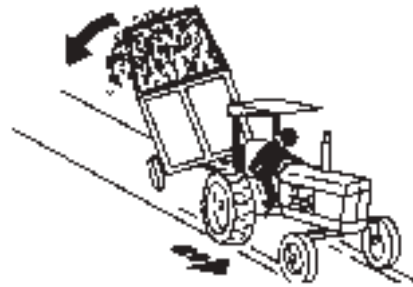
• Tow loads safely

Stopping distance increases with speed and weight of towed loads, and on slopes. Towed loads with or without brakes that are too heavy for the tractor or are towed too fast can cause loss of control. Consider the total weight of the equipment and its size.

Observe recommended maximum road speeds, or local speed limits which may be lower:

- If towed equipment does not have brakes, do not travel more than 20 km/hr and do not tow loads more than 1.5 times the tractor weight.
- If towed equipment has brakes, do not travel more than 30 km/hr and do not tow loads more than 3 times the tractor weight.

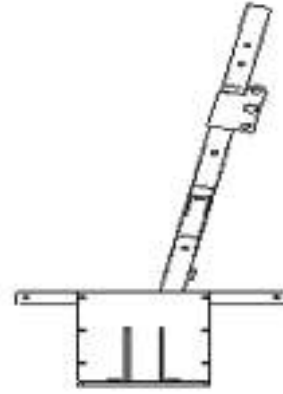
Ensure the load does not exceed the recommended weight ratio. Add ballast to recommended maximum for tractor, lighten the load, or get a heavier towing unit. The tractor must be heavy and powerful enough with adequate braking power for the towed load. Use additional caution when towing loads under adverse surface conditions, when turning, and on inclines.



• Keep ROPS installed properly

Make certain all parts are reinstalled correctly if the roll-over protective structure (ROPS) is loosened or removed for any reason. Tighten mounting bolts to proper torque.

The protection offered by ROPS will be impaired if ROPS is subjected to structural damage, is involved in an overturn incident, or is in any way altered by welding, bending, drilling, or cutting. A damaged ROPS should be replaced, not reused.



• Practice safe maintenance

Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service, or adjust machine while it is moving.

Keep hands, feet, and clothing from power-driven parts.

Disengage all power and operate controls to relieve pressure.

Lower equipment to the ground. Stop the engine. Remove the key. Allow machine to cool.

Securely support any machine elements that must be raised for service work.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts.

Remove any buildup of grease, oil, or debris.

On self-propelled equipment, disconnect battery ground Cable (-) before making adjustments on electrical systems or welding on machine.

On towed implements, disconnect wiring harnesses from tractor before servicing electrical system components or welding on machine.



Safety Precautions

• Service cooling system safely

Explosive release of fluids from pressurized cooling system can cause serious burns.

If radiator cap must be removed, do not remove when engine is hot. Shut engine off and wait until cap is cool enough to touch with bare hands. Slowly loosen cap to first stop to relieve pressure before removing completely.



• Service tractor safely

Do not service the tractor while it is in motion or while the engine is running.

When servicing front-wheel-drive-equipped tractor with rear wheels supported off ground and rotating wheels by engine power, always support front wheels in a similar manner.

Engaging front-wheel drive will pull rear wheels off support if front wheels are not raised.

Tighten wheel hardware to correct torque as specified in Wheels, Tyres and Tread section. Torque at intervals shown in Break-In Period and Lubrication and Maintenance sections, to ensure that wheel hardware does not loosen.

Reinstall protective covers removed during service.



• Support machine properly

Always lower the attachment or implement to the ground before you work on the machine. If you must work on a lifted machine or attachment, securely support the machine or attachment. If left in a raised position, hydraulically supported devices can settle or leak down.

Do not support the machine on cinder blocks, hollow tiles, or props that may crumble under continuous load. Do not work under a machine that is supported solely by a jack.

Follow recommended procedures in this manual.

When implements or attachments are used with a tractor, always follow safety precautions listed in the implement operator's manual.



Safety Precautions

• Remove paint before welding or heating

Avoid potentially toxic fumes and dust.

Hazardous fumes can be generated when paint is heated by welding, soldering, or using a torch.

Do all work outside or in a well ventilated area. Dispose of paint and solvent properly.

Remove paint before welding or heating:

- If you sand or grind paint, avoid breathing the dust. Wear an approved respirator.
- If you use solvent or paint stripper, remove stripper with soap and water before welding. Remove solvent or paint stripper containers and other flammable material from area. Allow fumes to disperse at least 15 minutes before welding or heating.



• Avoid heating near pressurized fluid lines

Flammable spray can be generated by heating near pressurized fluid lines, resulting in severe burns to yourself and bystanders.

Do not heat by welding, soldering, or using a torch near pressurized fluid lines or other flammable materials. Pressurized lines can be accidentally cut when heat goes beyond the immediate flame area.



• Store attachments safely

Stored attachments such as dual wheels, cage wheels, and loaders can fall and cause serious injury or death. Securely store attachments and implements to prevent falling. Keep playing children and bystanders away from storage area.



Safety Precautions

• Prevent acid burns

Sulfuric acid in battery electrolyte is poisonous. It is strong enough to burn skin, eat holes in clothing, and cause blindness if splashed into eyes.

Avoid the hazard by:

1. Filling batteries in a well-ventilated area.
2. Wearing eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.
4. Avoid spilling or dripping electrolyte.
5. Use proper jump start procedure.

If you spill acid on yourself:

1. Flush your skin with water.
2. Apply baking soda or lime to help neutralize the acid.
3. Flush your eyes with water for 15—30 minutes.
4. Get medical attention immediately.

If acid is swallowed:

1. Do not induce vomiting.
2. Drink large amounts of water or milk, but do not exceed 2L (2 quarts).
3. Get medical attention immediately.



• Service tyres safely

Explosive separation of a tyre and rim can cause serious injury or death.

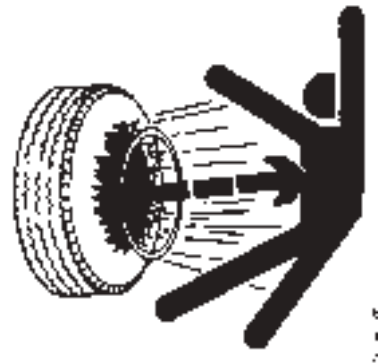
Do not attempt to mount a tyre unless you have the proper equipment and experience to perform the job.

Always maintain the correct tyre pressure. Do not inflate the tyres above the recommended pressure. Never weld or heat a wheel and tyre assembly. The heat can cause an increase in air pressure resulting in a tyre explosion.

Welding can structurally weaken or deform the wheel.

When inflating tyres, use a clip—on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tyre assembly. Use a safety cage if available.

Check wheels for low pressure, cuts, bubbles, damaged rims or missing lug bolts and nuts.



• Dispose of waste properly

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with equipment includes such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leak proof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Do not pour waste onto the ground, down a drain, or into any water source.

Air conditioning refrigerants escaping into the air can damage the Earth's atmosphere. Government regulations may require a certified air conditioning service center to recover and recycle used air conditioning refrigerants.

Inquire about the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your DongFeng dealer.



Safety First

Important notices

This tractor has been designed and manufactured specifically and solely for agricultural use. Any other application will be considered non-compatible by the manufacturer who, shall not be held responsible for any damage to people or property or the machine itself or third party property, derived from its use. Always understand that you the operator assume personal responsibility for any consequence associated with the improper use of this tractor.

Understand and respect the safety rules of tractor use. The manufacturer will continue to support you as long as you continue to follow the guidelines for maintenance and repair given in this operation manual.

The tractor must only be used, serviced or repaired by qualified people. Operators must be authorised and well trained in the tractors handling characteristics as well as adhering to the safety rules of operation.

The operator of the tractor is always responsible for the strict observance of general safety and accident prevention, as well as traffic regulations when driving the tractor on public or open roads.

Any unauthorized and arbitrary modification made to the tractor will relieve the manufacturer of all responsibilities for any damage or injury derived from such modification.

The Manufacturer and all the organizations associated with its distribution network, including but not limited to national, regional or local distributors, shall decline any and all responsibilities for damages that may derive from the abnormal performance and behaviour of those machine parts or components not specifically authorized by the Manufacturer of the tractor, including those used for the maintenance and/or repair again though they were fabricated or distributed by the Manufacturer, previously.

In any event, no warranty of any sort is issued or

prescribed for damages deriving from abnormal behaviour of parts and/or components not authorized by the Manufacturer of the tractor.

Caution

Read the Operator's Manual carefully before starting, using, maintaining, refuelling or making other adjustments to the tractor.

Comply strictly with safety regulations and follow the suggested safety measures in order to look after yourself and the environment around you.

Maintenance

Use genuine DongFeng parts only.

Failure to do this will:

- Cost you more
- Not result in complete satisfaction.
- Seriously risk the proper functioning of the tractor.

The tractors are designed with the owner in mind and effort has been made to simplify maintenance. The purpose of this handbook is to familiarize the operator with the operation and regular servicing of the tractor. Remember that the time spent on maintenance extends the life of your tractor.

Pay particular attention to the instructions covering fuel filtering, air cleaner maintenance and lubrication. Remember that badly filtered fuel results in injection system deterioration and irregular air cleaner maintenance leads to premature engine wear. Please keep in mind that the engine oil should be replaced thoroughly after every 50 working hours, and at least once a year.

Safety precautions

General

- Your tractor was designed with safety very much in mind. However, there is no real substitute for caution and attention to prevent accidents. Once an accident has happened, it is too late to think about what you should have done.

- Read this manual carefully, before attempting to start, operate, service, refuel or carry out any other adjustments to your tractor. A few minutes dedicated to reading will save time and trouble later.
- Remember that your tractor was designed and produced exclusively for agricultural use. If the owner of the tractor is to use it for any other purposes, he needs to get the prior authorization from the Manufacturer in advance.
- Keep a first aid kit handy.
- Do not wear loose garments that could get caught in moving parts. Check that all rotating parts connected to the power take-off shaft are fitted with safety guards.
- Before operating the tractor, the driver needs to be fully trained in safety and maintenance, and appropriately authorised before operating the tractor.
- Do not attempt to increase the maximum engine rpm by altering the setting of the fuel injection system.
- Do not alter the hydraulic pressure relief settings of the hydraulic lift and remote control valves.
- Do not operate the tractor if you feel unwell or physically unfit, in which case you should stop working.

*Always operate with an undamaged cab or ROPS (roll over protective structure), complete with all components and correctly installed on the tractor. Periodically check the mounting bolts for tightness and the frame and structures to make sure they are free from damage.
Replace damaged ROPS.*

Starting the tractor

Before starting the engine, check that the parking brake is on and transmission and P.T.O. are in neutral.

- Make sure all implements are fully lowered to the ground before starting the engine.
- Before starting the engine, make sure that all protective guards and shields are correctly installed on your tractor.
- Do not attempt to start or drive the tractor unless sitting in the operator's seat.
- Before moving the tractor, always make sure that there are no people or obstacles within range.
- Do not run the engine inside closed premises without adequate ventilation as exhaust fumes are harmful to health or may even become deadly.

Tractor operation

Select the wheel track width setting best suited to the work, always keeping tractor stability in mind.

- Engage clutch gradually. Abrupt engagements, particularly if pulling out of a rough area, ditch or muddy ground, or driving over a steep gradient, may cause dangerous tractor pitching. Immediately disengage the clutch if front wheels tend to come up off the ground.
- When driving downhill, keep the transmission gear engaged. Never disengage the clutch and never coast your tractor downhill in neutral.
- With the tractor in motion, the operator should be correctly seated on driver's seat with the seat belt fastened.
- Do not get on or off a moving tractor.
- Always press the brake pedal gently.
- Do not corner at high speed.
- Always operate the tractor at a safe speed for the type of ground being worked. When operating on rough ground, use proper caution to assure tractor stability.
- When working on sloping grounds, as for example on hillsides, drive at moderate speed, slow the tractor down particularly when cornering.
- When driving with wheels close to the edge of a ditch or bank, proceed with extreme caution.
- Never carry passengers.
- When driving on public roads, be sure to respect traffic rules and regulations.
- Do not override brake and clutch pedals.
- When driving on roads, latch the brake pedals together by using the latch plate. Braking with pedals unlatched may cause the tractor to side skid. Avoid overworking the brakes.

Towing and transport

To ensure the tractor is stable when working, adjust the towing attachment to suit the trailer or drawn implement.

- For your personal safety, trailers should be equipped with an independent braking system.
- Drive slowly when towing heavy loads.
- Always use the drawbar and towing equipment to pull heavy loads. Avoid towing or connecting heavy loads to the three point linkage, lower links or to the top link, because of increased rearing and tipping danger.
- When towing, never negotiate bends with a locked differential because you will not be able to steer the tractor.
-

Using agricultural implements and machinery

- Do not connect implements or machinery requiring a higher power rating than your tractor class.
- Never stand between tractor and implement to facilitate hitching while the tractor is being backed up.
- Making sure no one is within operating range of the tractor and implement before actuating the power take-off shaft connected to the machine.

Stopping the tractor

- Never leave implements in a raised position while the tractor is stationary, lower the implement before switching the engine off.
- Before leaving the tractor seat, move the transmission control lever to neutral position, disengage the power take-off shaft, apply the hand brake by pushing the brake pedals and setting the hand brake lever and turn the engine off last. Always remove the key from the starter switch when leaving the tractor unattended.
- Look for level ground to park the tractor on. On sloping ground, shift into a gear and lock the hand brake. Shift into low range first forward gear if facing uphill or into low range reverse gear if facing downhill. For more safety, use a wheel chock on the rear wheels. Be sure to use a wheel chock if parking your tractor with a trailer on a hill.

Tractor maintenance

- Allow the engine to cool off sufficiently before removing the radiator cap. After the engine is shut down for some time, slowly turn the cap to release pressures before removing it completely.
- Disconnect the negative (-) cable from the battery before starting any work on the electrical system, parts or components.
- Before disconnecting any hydraulic line or hose, release the oil pressure by moving the hydraulic levers back and forth for a few seconds with the engine off.
- Hydraulic oil escaping under pressure could cause serious personal injury. When searching for or detecting oil leaks, make sure to use adequate safety protection such as shields, goggles and gloves.
- Prior to carrying out any maintenance on the tractor or connected implement, including inspections, adjustments and cleaning, make sure that the engine is turned off, transmission is in neutral, brakes are locked, the power take-off is disengaged and all other moving parts are stationary.
- Do not repair or adjust wheels and tyres unless you have suitable tools and the necessary experience. Incorrect tyre installation may seriously affect your personal safety. If in any doubt, call a qualified trades person.
- Do not fill the fuel tank completely when you expect to work in full sunlight as the fuel can expand and escape. In which case, promptly wipe up any fuel spill.
- Tractor fuel is flammable and may be dangerous. Never refuel while the engine is running, still hot, near an open flame, or when you are smoking.

Front End Loader Safety

Your safety and the safety of others depend on the correct operation and maintenance of this equipment. Ensure all potential operators read this manual and notices on the loader completely and carefully including all safety messages before use. Always use care and common sense.

Before operation ensure:

- **all controls are in a safe state.**
- you know the position of all controls and understand their correct operation.
- you are aware of the stability and work characteristics of this loader.

Contact your dealer if you are unsure of any item concerning operation, maintenance or service of this loader.

The safety information given in this manual does not replace any safety codes, insurance needs, federal, state and local laws. Make sure your machine has the correct equipment required by your laws and regulations.

Safety Rules and Precautions

Safety Rules

Improper use of a loader can cause serious injury or death. The following safety precautions, and those given in the tractor installation instructions, should be thoroughly understood before attempting to operate this machine.

1. General

- Ensure that the front end loader and tractor are set up and maintained in accordance with these instructions and that of the tractor.
- While operating your loader, ensure you observe the safety requirements / regulations relating to the tractor.
- Only operators who have been specially trained in loader operation and fully understand this manual can operate the loader.
- Keep hands, feet and clothing away from all moving parts. Wear close fitting clothing and appropriate safety equipment. Prolonged exposure to loud noise can damage hearing. Wear suitable approved hearing protection such as ear muffs or plugs. Operating equipment safely requires your full attention. Do not wear radio or music headphones. Secure hair above shoulder length.
- You must be in good physical and mental health to operate the loader safely. Do not operate the loader when you are ill, fatigued or under the influence of any substance or medication that could affect your vision, co-ordination or judgement.
- The driver/operator should have the relevant driving license and strictly follow the relevant traffic regulations.
- Do not permit others to ride on your tractor. Only one person, the operator or driver, should be on the machine when it is in operation.

2. Prior To Each Use:

Conduct the following inspections with the equipment in a safe state – implements lowered to the ground, tractor park brake engaged, drive disengaged, all controls in neutral, engine shut off and ignition keys removed.

- Inspect the hoses, seals and couplers for leaks in an effort to avoid the possibility of a dangerous failure to the hydraulic system. Do not operate your loader if any oil leaks exist.
- Inspect the loader for structural damage such as bends or cracks, loose, missing, or malfunctioning components in an effort to avoid the possibility of a dangerous failure.
- Tighten any loose parts. Replace any damaged or worn parts. Make sure replaced parts are of equivalent strength and quality. Be certain any repairs necessary are completed prior to loader operation.
- Check hydraulic oil level in tractor and top up if necessary (refer tractor manual). Check lubrication points on loader and lubricate if necessary.

3. When Operating

- Before starting your tractor engine make sure all operating controls are in park lock or neutral position.
- Your tractor must be fitted with a Roll Over Protective Structure (ROPS) cab or frame for your protection. See your tractor operator's manual for correct seat belt usage.
- Be certain all bystanders are clear of the machine and work area prior to operation.
- Operate the loader unloaded to ensure it is in proper operating condition before starting your work.
- The use of good judgement is necessary by the operator in using this loader. Use extra caution when rear wheel weights and tyre ballast are added to a loader-equipped tractor. **Do not** ram into compacted or frozen piles of dirt or other material with great momentum where sudden shock loads are encountered. Serious and costly damage may result to both the loader and the tractor.
- Operate controls only when seated in the tractor's seat.
- Never lift, hoist, or carry humans in the bucket or on any portion of the loader or loader attachments.
- Move slowly! Travel speed should be such that complete control and machine stability is maintained at all times. Where possible, avoid operating near ditches, embankments and holes. Reduce speed when turning, crossing slopes, and on rough, slick or muddy surfaces.
- Stay off slopes too steep for safe operation. Select low range before travelling up or down a hill with a heavy load. Avoid "free wheeling".
- Avoid sudden stops when lowering or lifting the loader boom to prevent loss of control over the machine and / or loader.
- Never perform maintenance or adjustments on the loader or tractor while in operation.
- A loader attachment should be transported in a low position at slow ground speeds. Make turns slowly and use the tractor brakes cautiously. A loaded attachment in the raised position alters the center of gravity of the machine and increases the possibility of mishaps.

- Do not stand, walk or work under a raised loader or attachment unless it is securely blocked or held in position. Accidental movement of a control lever or leak in the hydraulic system could cause the loader to drop, or attachment to dump, causing severe injury.
- Contact with power lines can cause severe electrical burns or death from electrocution. Be aware of overhead wires and underground services. Ensure no part of the Front end loader comes in contact with them. Before digging in areas that may contain underground services contact relevant authorities to identify exact location.
- Before applying hydraulic pressure, make sure all hydraulic connections are tight and components are in good condition.
- When using a loader, be alert of bucket position at all times. With loader in raised position rolling bucket back can dump material on tractor causing damage to tractor or injury to operator.
- When using remote hydraulic tractor valves on some tractors, the loader lifting and dumping cylinders will continue moving unless the control levers are manually returned to neutral, or until relief pressure is reached at the ends of piston strokes. Observe the bucket movement and maintain control with the control levers.

4. Following Operation

- Whenever the machine is not in operation, lower the loader bucket to the ground, engage tractor park brakes, disengage drive, put all controls in neutral, shut the engine off, and remove the ignition key before leaving the tractor.
- Make sure all parked loaders on stands are on a hard level surface with all safety devices engaged to prevent loader from falling and being damaged or injuring someone.
- Always park loader with bucket attached to loader.

5. Performing Maintenance

- Carefully review, understand, and follow the “maintenance” section in this manual before attempting to service loader.
- To prevent personal injury, lower the bucket or attachment to the ground, shut off tractor engine, lock out the hydraulic supply and relieve pressure in the hydraulic system before disconnecting fluid lines adjusting, lubrication, or servicing the loader.
- Never use your hand to check for suspected leaks under pressures. Use a piece of cardboard or wood for this purpose. Escaping hydraulic oil or diesel fuel leaking under pressure can have sufficient force to penetrate the skin and cause infection or other injury. If injured by leaking fluid, seek medical attention immediately.

Caution

- Loader: Do not operate the front end loader while the safety lock-out pins are in place, or major damage may occur. When the loader is in operation you must engage low range. Failure to comply will void warranty.
- Operating: This is not an industrial strength bucket. Once the bucket is ‘clammed’ over a heavy or immovable object (stump), the weight and traction of the tractor can bend or damage the bucket if it is used incorrectly.

- Do not use a bucket to scrape or as a dozer blade, unless the bucket is tilted so that the bucket stops are in contact with the boom. A limited amount of leveling may be done, when the loader valve is arranged with a float control. This will prevent damage to cylinder rods.
- Care must be taken with your loader cylinders. Always keep cylinders in a retracted position when the loader is not in use to guard against rust and contamination which may cause damage to the cylinder rods or hydraulic system.
- Hydraulics: When parking the tractor, release the hydraulic pressure by shutting down the engine and place the loader control lever into the 'Float' position. After five seconds, replace the lever to the neutral position.

Note: Do not operate the three point linkage with the loader control in float position.

1.3 Safety Decals

Care of Safety Decals

1. Keep safety decals clean and free of obstructing material.
2. Replace damaged or missing safety decals with new decals from your dealer.
3. If a component with a safety decal(s) affixed is replaced with a new part, ensure new safety decal(s) are attached in the same locations on the replacement components.

Refer below for correct location of decals. Note decals appear on both sides of loader.





①.

DONG FENG

②.

ROL 350KG

3.

⚠ CAUTION

TO AVOID PERSONAL INJURY:

1. Observe safety precautions in loader and tractor Operator's Manual.
2. Operate the loader from tractor seat only.
3. Keep children, others and livestock away when operating loader and tractor.
4. Avoid holes, loose ground, and rocks which may cause tractor / loader to tip.
5. Make sure approved bucket is attached before removing loader from tractor.
6. When parking or storing, choose flat and hard ground. Lower the bucket to the ground, set brakes and remove key before leaving tractor.
7. Before disconnecting hydraulic lines, relieve all hydraulic pressure.

5.

⚠ CAUTION

TO AVOID INJURY FROM CRUSHING:

1. Do not utilize the valve lock for machine maintenance or repair.
2. The valve lock is to prevent accidental actuation when implement is not in use or during transport.

4.

⚠ WARNING



TO AVOID INJURY FROM FALLS OR BEING CRUSHED:

1. DO NOT stand or work under raised loader or bucket.
2. DO NOT use loader as a jack for servicing.
3. DO NOT use loader as a work platform.
4. NEVER connect chain, cable or rope to loader bucket while operating loader.

6.

Caution!



- * Use ROPS and seatbelt at all times.
- * Add required rear ballast with loader.
- * Move wheels to widest setting when working on slopes.
- * Operate tractor at low speeds.
- * Carry all loads close to the ground.
- * Do not walk or perform service under a raised loader.
- * Always lower loader and implements to the ground when parked.



7.

A yellow rectangular sign with a red border. At the top, the word "ATTENTION" is written in large, bold, red capital letters. Below it, the text "Your responsibilities before operating this machine are:" is written in black. A list of eight safety responsibilities follows, each preceded by an asterisk.

ATTENTION

Your responsibilities before operating this machine are:

- * Read, Understand and Follow the safety procedures manual.
- * Train operators before using & review safety procedures regularly.
- * Ensure that all guards are in place before operating.
- * Keep Hands, Feet, Hair and Clothing away from all moving parts.
- * Avoid wearing loose clothing whenever possible.
- * Disengage the PTO drive when transporting or when not in use.
- * Maintain as per schedule in the safety procedures. Especially Blades, and securing Hardware, due to the hazard they present should any part break loose during operation.
- * During maintenance, use suitable support stands. Don't rely on the tractors' Linkage & Hydraulics.
- * DO NOT allow any persons to ride on the equipment.

8.

A yellow rectangular sign with a black border. At the top, there is a red triangle icon with a white exclamation mark inside, followed by the word "CAUTION" in large, bold, red capital letters. Below this, three safety instructions are listed, each preceded by an asterisk. The word "BOTH" is written in red in the first and third instructions.

CAUTION

- * **BOTH** loader lock pins to be installed when working under raised loader.
- * Lower loader slowly to rest on both lock pins.
- * **BOTH** lock pins to be removed before operation resumes.

9.



10.



11.



BL25



1. Request For Dealer Service

Thank you for purchasing an DongFeng tractor. Your DongFeng dealer is interested in your new tractor and has the knowledge, parts and backup to help you get the best value from it. After reading this manual thoroughly, you will find that you can do many of the regular service jobs quickly and easily.

When you need service, parts or advice, have the tractor model and both the engine and serial numbers ready to provide to your DongFeng dealer or service agent.

The tractor serial number is located in several places. At the rear of the tractor below the PTO output shaft, on the Identification Plate pop riveted to the rear mudguard and on the ROPS Identification Plate on the ROPS. The engine serial number is on the Engine Identification Plate fixed to the intake manifold located on the left side of the engine crankcase. It is also stamped on the block behind the injector pump governor housing on the same side.

Locate the serial numbers now and record them in the space provided.

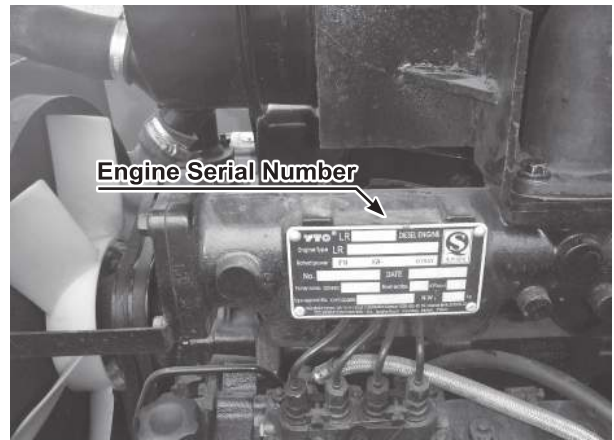
Model: _____

Tractor Serial No: _____

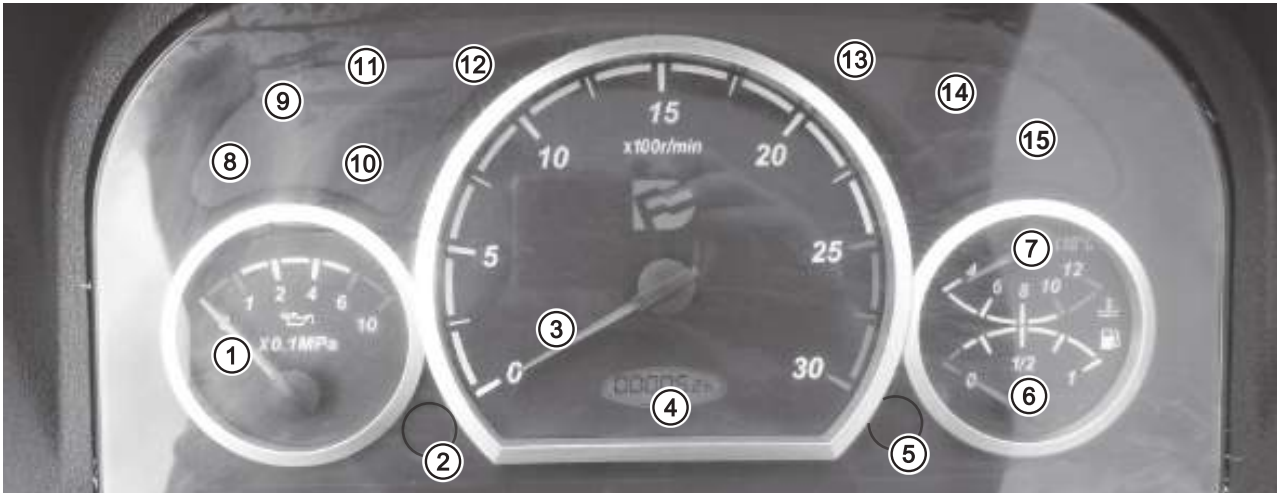
Engine Serial No: _____

Date of purchase: _____

(To be filled in by purchaser)



2. Instrument Panel And Controls



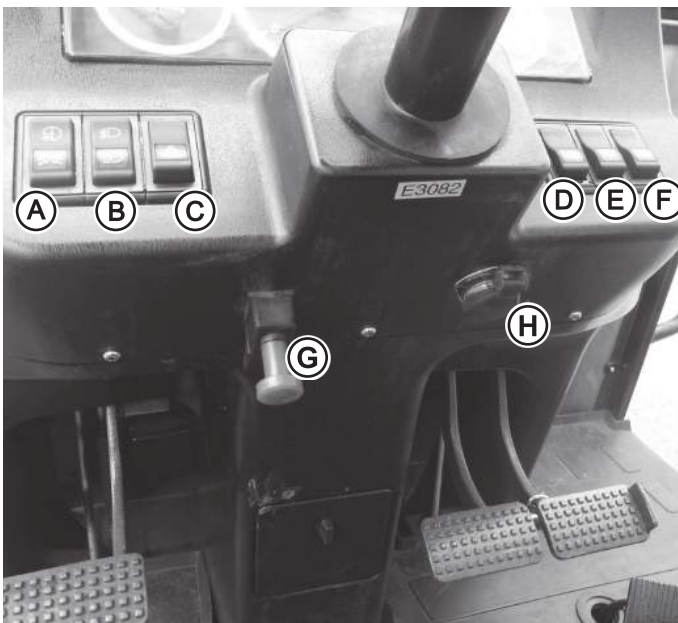
2.1 Instrument panel display

- 1 – Oil Pressure Gauge
- 2 – Low Bean Indicator
- 3 – Tachometer
- 4 – Hour Meter
- 5 – Ignition On
- 6 – Fuel Gauge
- 7 – Temperature Gauge
- 8 – Oil Warning
- 9 – Battery Warning
- 10 – High Beam Headlight
- 11 – Brake Warning
- 12 – Left Indicator

- 13 – Right Indicator
- 14 – Fuel Warning
- 15 – Temperature Warning

Dash - board buttons:

- A – Rear Work Light / Dash and Tail Lights
- B – Headlights, High and Low beam
- C – Hazard Lights
- D – Left Turn Indicator
- E – Right Turn Indicator
- F – Horn
- G – Fuel Cut Off “Stop Button”
- H – Ignition Switch

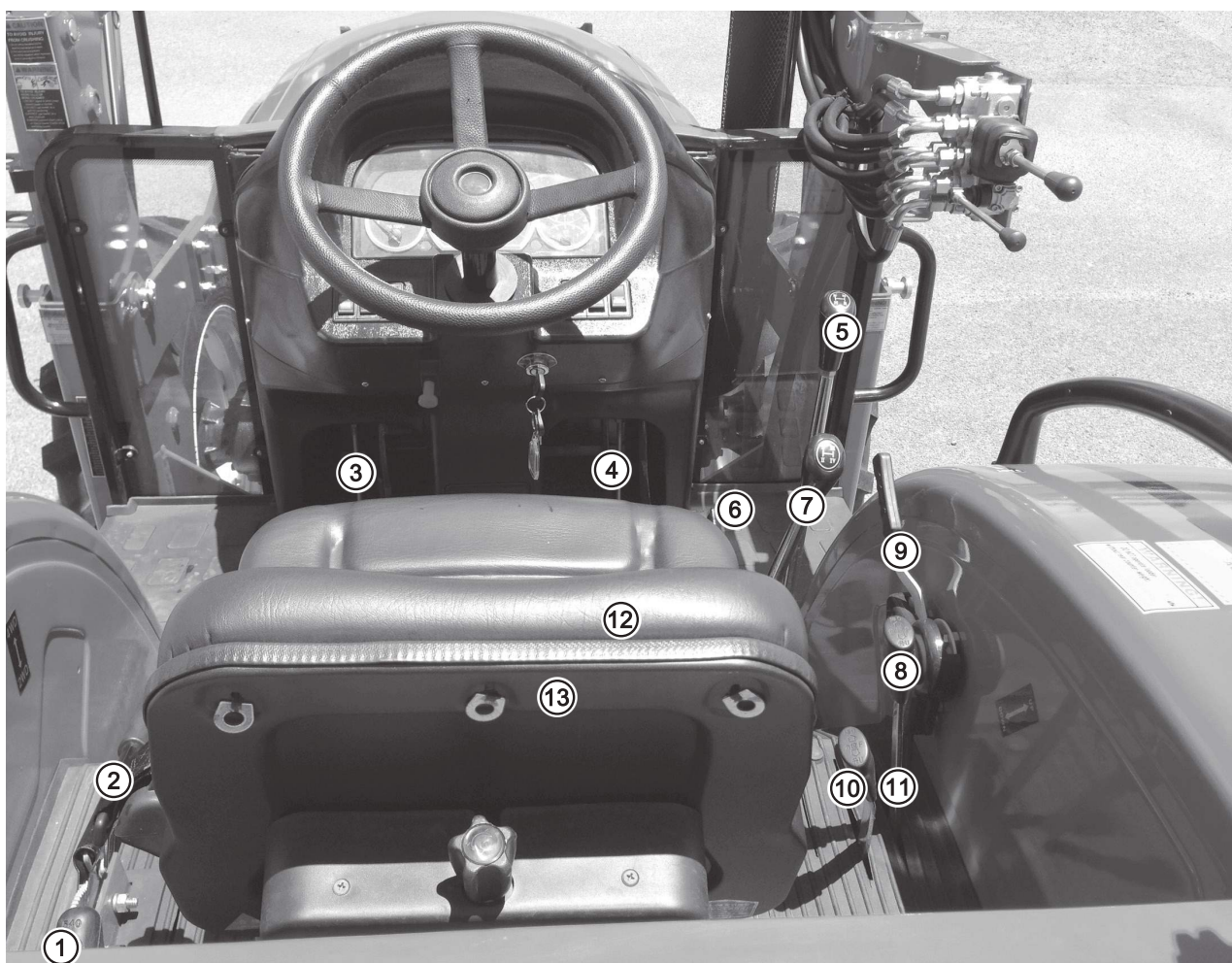


2.1.1 Hour meter

The hour meter is electronic, and records the engine hours of operation. Use the hour meter to schedule your service and maintenance program found in chapter 6. Always run the engine with the ignition switch turned 'on'.

2.1.2 Headlights switch

The Headlight switch is an on-off-on rocker button 'B' and only works with the ignition on. Pushing the rocker forward turns on the low beam showing a green indicator on the dash. Pushing the switch back turns on the high beam showing a blue indicator on the dash.



Control Layout

- 1 – P.T.O. Lever
- 2 – 4WD Lever
- 3 – Clutch Pedal
- 4 – Brake Pedals
- 5 – Range Lever
- 6 – Foot Throttle
- 7 – Gear Lever
- 8 – Position Control (3PL)
- 9 – Hand Throttle
- 10 – Remote Hydraulic Lever x2
- 11 – Draft On/Off (3PL)

2.1.3 Horn button

Press the horn button to sound the horn. The ignition switch needs to be on for the horn to work.

2.1.4 Engine oil pressure gauge

The engine oil pressure gauge indicates if engine oil pressure is sufficient and oil is circulating throughout the engine. The oil pressure gauge operates when the engine is running.

2.1.5 Fuses

The fuses are located on the left hand side behind the clutch pedal and are there to protect the electrical circuits. When a fuse blows, find the cause and fix the problem before replacing with a new fuse. If you or your mechanic can't find the problem, call your DongFeng dealer for assistance. Ensure the electrical circuits are carrying normal amperage. Spare fuses are available from your DongFeng dealer.

2.2 Controls

2.2.1 Accelerator

The tractor is equipped with both a hand and foot accelerator. When seated the hand throttle is

located by your right leg. Move the hand throttle lever up and back to speed up the engine and forward and down to slow the engine. In addition, the engine is sped up by stepping on the accelerator pedal while the hand throttle lever left in the down position. To stop the engine, reduce the engine revs to idle and pull the red fuel cut off switch. Generally the foot throttle is used to drive the tractor from place to place while the hand throttle is used to set the engine to work at a constant speed.

2.2.2 Hydraulic lift system-Three Point Linkage

The hydraulic lift system provides both position control and draft control using two separate levers.

Position Control

Position control is used to control the position of the implement fitted to the three point linkage that operates above ground, such as slashers, carryalls, grader blades. It can also be used to position tillage implements like a ripper, but will provide no resistance feedback to the hydraulic lift system.

The position control is the outer linkage lever beside your right hip when seated. Make sure the inner lever (draft control) is up and back when using position control. The position control lever is indexed. When the position control lever is up and back the linkage is raised. As the position lever is moved forward and down, the linkage will lower to a corresponding position, with the lever full forward and down giving the lowest three point linkage position. Note: To achieve full position control the draft lever must be firmly up and back.

Draft Control

The draft 'on/off' lever is the inner linkage lever beside your right hip when seated.

Draft 'ON' is used to control tillage or 'in ground' working equipment mounted on the three point linkage such as a ripper or plough. It allows control of ground resistance through a feedback mechanism fitted to the top linkage of the three point linkage. Use the top hole of the top link mount on the tractor for more sensitive control, middle for less sensitive and bottom hole for least sensitive control.

Use position control (outer lever) to position the implement with Draft OFF when transporting the implement to the work site. At the worksite lower the

tillage implement to the ground then push the draft lever firmly forward and down to draft ON, turning the draft facility on. Manage the implement depth/resistance using the outer position lever. With the position lever up and back for light resistance and shallow penetration and moving forward and down increasing resistance for deeper penetration. The load (resistance) on the three point linkage varies with implement penetration and soil condition. This load feeds back through the top link providing control input adjusting the linkage for constant load. The load is managed by the operator using the position lever with the draft lever in the ON position to maintain wheel traction while achieving the desired implement penetration.

Response Control

The response control wheel is located behind the panel below the seat. It is a needle valve in the oil gallery that controls the flow of oil from the linkage when the three point linkage is lowering. Turn the wheel clockwise like turning off a tap to slow the flow of oil slowing the downward movement of the linkage. Screw it right down to stop the oil flow and stop the linkage from lowering. Likewise turn it anti-clockwise and increase the rate of fall. Note: Never climb under an implement on the three point linkage unless it is supported by a mechanical safety device.

2.2.3 Main gear, range and leavers

The tractor is equipped with a four speed synchromesh transmission with three ranges. Couple this with the synchromesh shift to be provided with twelve (12) forward and twelve (12) reverse gears.

The synchro lever conveniently provides the selection of forward or reverse direction. Use the clutch when selecting gears and changing between forward and reverse.

2.2.4 P.T.O. lever

The P.T.O. lever engages the tractor power take off providing 540 or 1000 RPM at rated engine speed. Caution: When operating implements, ALWAYS use 540rpm. Only use 1000rpm when specified by the implement manufacturer. The standard PTO operation speed in Australia is 450rpm, and should be used on slashers and finishing mowers.

2.2.5 Four wheel drive lever

The four wheel drive lever is used in the event

that greater traction is required on a slope or a wet paddock or to stop the tractor from surging during rotary hoeing hard soil.

Pull the 4WD lever up (located by the left knee when seated) to engage the front wheels, selecting four wheel drive. Push the 4WD lever down to release the front wheels returning to two wheel drive. Never operate the tractor in 4WD on hard standing.

Note:

Operating in 4WD will often cause 'windup' between the front and back wheels making it difficult to disengage 4WD. Driving forward or back with the steering on the opposite lock while pushing down on the lever will sometimes free windup and allow disengaging. If fitted with a front end loader, push the bucket down firmly to raise the front axle and release the windup. Disengagement should now be easy.

Caution:

Only use 4wd when required, operating the tractor full time in 4wd on a hard surface will cause damage and void warranty.

2.2.6 Clutch pedal

The tractor is equipped with a two stage clutch. Pushing down the clutch pedal first disengages the transmission, and when depressed fully disengages the PTO drive. To start the tractor the clutch pedal must be fully depressed to engage the safety start switch.

Caution:

- Release the clutch pedal slowly when operating the tractor.
- If using a front end loader, select low range for operating the loader and high range for travelling. If high range is used when working the front end loader, premature clutch wear will occur.
- Do not 'ride' the clutch to adjust speed while in operation or premature clutch plate wear and pressure plate damage will result. Premature clutch wear is not warranted.

Safety Precautions:

Use the clutch pedal whenever changing gears or using the shift.

2.2.7 Brake pedals (left & right)

The left and right brake pedal operates the rear wheel brakes independently when not interlocked.

Safety precaution:

When operating the tractor, be sure to interlock the left and right pedals as illustrated above. Only use the pedals independently in low range to assist steering.

2.2.8 Parking brake lever

Interlock the left and right brake pedals, step on the pedals to take the strain and set the park brake lever. This procedure locks the brake. To release the parking brake, step on the brake pedals to hold the strain and release the park brake lever.



2.2.9 Differential lock pedal

The Differential Lock is located by your right heel when seated and is applied in the case of excessive wheel slip. Locking the differential provides power equally to both wheels. This is achieved by lightly stepping on the differential lock pedal with your right heel and holding the pedal down. To unlock, lift your heel to release the pedal. Never activate the diff lock in 4 WD at high speed or when turning.

2.2.10 Seat Safety precautions

To accommodate the operator, an adjustable suspension seat is provided. Forward and back adjustment is made using the seat adjust lever below the seat pan and the suspension mechanism can be adjusted for the weight of the operator using the spring tension screw behind the seat frame.

3. Running-in

How the tractor is handled in the first 100 hours of its working life has a big impact on how long it lasts and its performance during its 'life'. In order to get the best out of your tractor and prolong its service life, it is essential to follow the procedure outlined below for a new tractor (new or overhauled engine). The run-in period is the first 100 hours.

3.1 Engine run-in without load

Caution:

If the engine will not start, do not grind it over with the key for more than 15 seconds at a time or the starter motor could be damaged.

1. Please read Safety Precautions and Safety First in this Operation Manual before carefully starting the engine.

To start the engine:

Before starting, know how to stop the engine, see 3.1. After carrying out the daily safety and service checks, sit firmly in the seat. Adjust the seat to a position in which you can fully operate all the tractor controls and secure your seat belt. Ensure the gear levers are in neutral position and the PTO is disengaged. Move the hand throttle to the medium position and push the clutch pedal firmly to engage the safety switch. Ensure the fuel cut off button is pushed right in and turn the ignition key clockwise or right to the normal start position. The tractor will start. Release the key and it will return to the 'ignition on' position.

2. After starting, let the engine run at medium or low speed, until the engine temperature reaches 50°C. Ensure the oil pressure gauge is indicating normal. Avoid running the engine at high speeds right after starting. While the engine is warming up, check for any water, oil or air leakage and that all instruments and indicators are working normally.

3. Once warmed to operating temperature, run the engine for 5 minute at maximum speed, keeping an eye on the engine's instruments to monitor its working status. Then vary the engine rpm cycling between medium to low speed. Run the engine without load for a minimum of 20 to 30 minutes.

3.1 Stopping the engine

1. Drive the tractor to a safe flat location.
2. Disengage the PTO, gear and range levers and apply the park brake.
3. Lower the implement / loader to the ground, and close the throttle to reduce engine speed.
4. Turn the ignition off.
5. Pull the red fuel cut off button and hold it out till the engine stops
6. Push the button back in, remove the ignition key and release your seat belt.

3.2 Tractor –No Load

1. Drive the tractor into a safe open 'test' area with enough room to carry out the following manoeuvres.
2. At varying slow to medium speeds, run the tractor in every forward and reverse gear for half an hour respectively. Run third and forth gear in medium or low range. Use the steering from lock to lock without holding on full lock. Manoeuvre at medium and low speeds, applying LH brake and RH brake in sync with the steering. With the brakes interlocked, try emergency braking when the tractor is running in gears 11 and 12 with limited throttle. Engage the front wheel drive if the tractor is a four-wheel drive model. Never operate in four-wheel drive on hard surfaces. While running in the transmission system, the P.T.O. should be "disengaged".
3. Engage the P.T.O., and operate the hydraulic linkage system repeatedly to ensure all the linkage joints are working smoothly together.

4. If a front end loader is fitted, drive the tractor to a safe level position and operate the lift, crowd and bucket rams through their full range of movement for at least 12 cycles.

3.3 Run-in tractor - loaded

1. Running-in the loaded hydraulic linkage system should be done before running-in the transmission system. Fit a slasher to the linkage system, (don't fit the P.T.O. shaft) fully lift and lower the slasher as least 20 times while the engine is working at the rated speed.
2. When operating the tractor with a load during the running-in period, the load must be added gradually and gears changed sequentially from low to high. The engine should not be left at idle for long periods. A slasher can be used to 'load' the engine. Use a higher gear than normal when cutting grass to load the engine, making it work hard. Keep the revs up high to stop it from stalling while working the tractor at the same time. Carry this out for approximately 2 – 3 minutes then return to normal operation. Alternate normal and 'loaded' operation for a period of 45 minutes, then use the tractor as normal.
3. If the above running-in condition can't be achieved, then light-load operation can be used

as a substitute. For example, pulling a light implement for shallow-tillage or towing a skid (log or heavy harrow) to provide light resistance. Alternatively a trailer loaded with 1.5 ton of cargo may also be used to provide a load on the tractor.

Points for attention:

- Don't operate the tractor at full speed for the first 100 hours.
- Vary the engine speed often and don't run the engine at speeds faster than necessary.
- Warm the engine up fully, before putting the tractor to work.
- Don't start quickly or apply the brakes suddenly.
- Don't operate the tractor at fast speeds. Slow down to a suitable speed on rough roads or paddocks.
- Keep an eye on the operation of all parts and assemblies at every stage of the run-in process. If any abnormal condition occurs during the run-in period, adjust or repair it immediately.

3.4 30HR run-in service

Refer to section 6 for your 30 hour service schedule. Carry out all tasks listed.

4. Operating Instructions

4.1 Pre-start checks

Prior to starting the engine, follow the pre-start checks outlined in the service schedule 6.2.1 on page 6-1.

4.2 Starting and stopping

4.2.1 Starting

1. Sit down on the operator's seat and fasten the seat belt.
2. Step on the brake pedals and engage the park brake.
3. Set the main gear shift lever and the P.T.O. lever to neutral.
4. Move the hand accelerator lever 'on' from half to two thirds and ensure the fuel cut off (stop button) is pushed firmly in.
5. Insert the key into the ignition switch.
6. Fully depress the clutch pedal and turn the key switch to the start position and the engine will start.
7. Make sure that the engine oil pressure indicator has registered. If the indicator is not working normally, immediately stop the engine and check the lubrication system.
8. Allow the engine to warm-up by running it at fast idle to medium speed. Watch the temperature gauge to identify when the engine has warmed up.

Caution:

1. While the engine is running, do not turn the ignition switch off.
2. If the engine does not start when holding the ignition key on after 15 seconds, switch off for about 20 seconds. If the ignition switch is continuously turned to the start position for more than 30 seconds it may lead to problems with the starter motor.
3. Make sure to warm-up the engine regardless of the ambient temperature. If the tractor is used before the engine warms up, performance is reduced, and the tractor service life will be adversely affected.

4. Don't use starting fluid to aid engine start. Doing so may cause serious damage to the engine.

Safety precautions:

1. Do not start the engine in an enclosed room. This will contaminate the air with exhaust fumes and lead to the risk of poisoning.
2. Make it a habit to start the engine after moving the main gear shift lever and P.T.O. lever to neutral positions and fully disengaging the clutch. If this procedure is not observed, the tractor may dangerously lunge forward as the engine starts. Australian DongFeng tractor models have been factory fitted with a clutch operated safety start switch.

Caution:

When the ambient temperature is less than 0°, remove the battery from the tractor and store it somewhere warm until next operation.

4.2.2 Stopping

1. Slow the engine speed down to less than 1000 rpm by moving the hand throttle lever forward and releasing the accelerator pedal.
2. Select neutral with the gear lever, shift and P.T.O., then release the clutch.
3. Turn the ignition key switch off, pull the red fuel cut off button and remove the key.

4.3 Driving

4.3.1 Starting

1. With the park brake engaged, lift the front end loader and implement if fitted to minimum safe height for transit.
2. Depress the clutch pedal to disengage the clutch.
3. Shift the main and range gear shift levers to the desired gear.
4. Select forward or reverse with the shift lever.
5. Release the park brake.
6. Speed up the engine by pulling the hand throttle lever up, or using the foot accelerator.

7. Slowly release the clutch pedal and the tractor will start to move.

Caution:

1. Do not drive the tractor with the park brake on.
2. Do not drive with your foot resting on the clutch pedal.

Safety precautions:

1. Releasing the clutch pedal suddenly can make the tractor lunge forward dangerously.
2. It is best to avoid shifting gear while you are driving. Select the gear you want to work in, then move off. To change gear, stop the tractor by stepping firmly on the clutch pedal.
3. Interlock the left and right brake pedals before starting. Uneven braking can result in a sharp turn, unbalancing the tractor, which could even tip it over.
4. Do not allow any person other than the driver to ride on the tractor.
5. Do not drive the tractor close to the edges of ditches or banks which may break under its weight, especially when the ground is loose or wet.
6. When turning the tractor, slow the engine speed down and, if necessary, engage a lower gear.
7. Do not drive the tractor on the road with the P.T.O. engaged and the implement in motion.
8. After using the diff lock, make sure it has been released.
9. When going down a slope, use the slowed engine to control the speed, (engine braking). Relying only on the brake pedal is dangerous. Never depress your clutch to free-wheel when travelling down steep slopes.

4.3.2 Stopping

1. Slow the engine down.
2. Step on both the clutch and brake pedal and the tractor will stop moving.
3. Move the main gearshift and shift lever to the neutral position and release the clutch pedal.
4. Interlock the left and right brake pedals then apply the park brake.

Safety precautions:

1. When parking, be sure to apply the park brake.
2. If you have no other option than to park on a slope, take an added precaution against rolling by placing stones or a wheel chock against the rear wheels on the down hill side.
3. Before getting off the tractor, make sure you stop the engine and lower the implement to the ground for safety.

4.4 Check during driving

While driving, check the instrument gauges to make sure all systems are functioning normally.

4.4.1 Coolant

Prior to starting the engine, follow the pre-start checks outlined in the service schedule 6.2.1 on page 6-1. Also check and rectify the following:

1. Low coolant level or coolant leaks.
2. Foreign matter on the radiator screen and dust and dirt between the radiator fins.
3. Fan belt drive tension.
4. Unnecessary addition of anti-freeze in climate locations that don't freeze.

Safety precautions:

To remove the radiator cap, wait for about 10 minutes after stopping the engine. Release the cap slowly to release any remaining pressure carefully. Immediate removal of the radiator cap on a hot engine, allows scalding coolant to spray out burning the operator.

4.4.2 Engine oil pressure indicator

The oil pressure gauge indicates whether the engine is receiving adequate oil pressure. If the indicator shows an incorrect operating pressure, or the oil warning lights up immediately stop the engine and check:

1. The engine oil level. (See page 6-1).
2. External engine oil leaks.
3. Electrical connection at the gauge & sender.

4.4.3 Fuel

Do not run the tank dry. Using the top two thirds of the tank is recommended. If air is sucked into the fuel system, the system must be bled.

4.4.4 Exhaust fumes

1. Exhaust fumes are colourless during normal operation.
2. Exhaust fumes become a little coloured with increased engine power. If the exhaust turns dark continuously during driving, it probably indicates an engine overload. In this case reduce the load on the engine. If the situation continues have it checked by a diesel technician to avoid damaging the engine.

4.4.5 Emergency engine stop

Should the following unusual events take place, immediately stop the engine.

1. The engine slows down or speeds up unexpectedly.
2. Unusual noises are suddenly heard.
3. Exhaust fumes rapidly become very dark.
4. The engine oil pressure gauge indicates an abnormal pressure.
5. For service checks of the above situations, consult your dealer or service agent.

4.5 Operating the differential lock

Using the differential lock properly will enhance your tractor performance in extreme wheel slip situations, while its incorrect use may subject the operator to serious dangers and lead to tractor problems. Be aware of the following considerations when applying the diff lock:

1. The diff lock can be used in the following situations:
 - The tractor is lightly bogged because of one wheel slip, for example coming out of a drain or entering a paddock in slippery conditions.
 - One rear wheel is caught in a loose area of the paddock and the tractor cannot move due to wheel-spin.
 - When ploughing, the rear wheel closer to the

ridge is caught in the loose soil and is spinning due to limited traction.

2. The use of the diff lock must be limited to a particular application and cannot be applied beyond that limit, which is usually for a short time only.
3. When the rear wheel is subjected to excessive loads and the rear axle is 'wound up', the differential will sometimes remain locked even though the diff lock pedal has been released. Lightly tapping the brake pedal opposite to the turn will sometimes release the lock. Likewise driving the tractor straight will release the axle 'wind up' allowing the Diff to unlock.
4. Do not engage the diff lock at high speed or when turning. The tractor cannot turn with the diff lock engaged and attempting this is very dangerous and will void any warranty.
5. Do not engage diff lock while operating in 4WD.

4.6 Control and usage of tractor's working devices

4.6.1 Hydraulic lift system

Lifting & lowering the three point linkage

Position Control (see Fig. 4-6).

Position the Draft Control lever (lever closest to the seat) firmly up and back to turn draft off, allowing the Position Control lever (outer lever closest to the mudguard) to be used for above ground position control. Position control is indexed, as the lever is moved forward and down the three point linkage lowers to a corresponding position with linkage fully down when the position control outer lever is firmly down. When using Position Control, preferentially pin the top link to the tractor in the bottom hole of the top link mount.

4.6.2 Draft Control - Three Point Linkage

The three point linkage is equipped with draft control using the top link for the draft control input. Use the top and middle hole of the top link mount when hitching up 'draft' implements. Use the top hole for most draft sensitivity.

1. With the Draft lever up and back in the 'Draft

Off' position, lower the implement to the ground using the position lever. Push the draft lever forward and down to the 'Draft On' position engaging draft control which is managed using the position lever.

Caution:

Ensure the draft lever is off (up and fully back) before raising the implement with the position control. If draft control is suddenly pulled up and back suddenly turning draft off when the position lever is right back, the linkage will quickly lift with the attached implement to its full height and damage may result.

2. The response control wheel is located behind the panel below the seat. Increase the linkage 'fall' speed by screwing it up anti clockwise increasing oil flow. Remember the linkage will not work with the response wheel screwed right down creating a hydraulic lock.
3. Adjusting the lift linkage. Use the top link to adjust and level the implement front to back. The lift arm levelling assemblies can be adjusted individually to level the implement side to side. Make sure you tighten the linkage locknuts to secure the adjusted position. The adjustable stabiliser links can now be set to allow minimal sideways movement. A properly adjusted implement will make working more enjoyable and efficient and ensure the least amount of wear and damage can occur while the implement is in operation.

Position Control Summary

With the implement on the ground:

1. Push the position lever (outer lever) forward and down. (if the implement was up, this will lower it to the ground provided you don't have a hydraulic lock).
2. Pull the draft lever up and firmly back to 'Draft OFF' position and keep it there.
3. Using the position lever lift the implement to the required height.
4. If desired set the implement fall speed by adjusting the response control valve.

Draft Control Summary:

1. Push the position lever forward and down till the implement rests on the ground.

2. Push the draft lever forward and firmly down to the 'Draft ON' position and keep it there.
3. Drive forward and control the implement penetration with the position lever. Up and back for shallow tilth and moving forward and down for deeper penetration.
4. The position of the top link, in the tractors three position top link mount will vary the draft sensitivity of the implement with most draft sensitivity at the top position and least draft sensitivity at the bottom position.

4.6.3 Attaching a Three Point Linkage Implement

1. Attaching an implement to the tractor. Back the tractor up to the implement as square as possible. Adjust the lift arms to be close in height to the mounting points on the implement. Having the tractor linkage a little lower may be an advantage at times as they can be lifted a little by hand while aligning the attachment pins. Ensure the mount pins are securely locked with lynch pins. Keep a few spare lynch pins on hand as they are easy to misplace or lose. Adjust the top link to the correct length and attach it in position with a top link pin.

4.6.4 Linkage: Points for attention

1. NEVER adjust the top link and the left and right vertical arms to the minimum length at the same time, otherwise the implement may lift too high causing damage to the cabin or driver when it is rising to the highest position.
2. Lift implements, especially tillage equipment before driving off or turning.
3. Do not manoeuvre or turn the tractor while a ripper tyne is in the ground. Lift the ripper – or other tillage implement first.
4. Make sure the implements fit the tractor well and there is no interference to the implements lifting or lowering.
5. Avoid dragging implements along roads or across paddocks. Use a slow gear for traversing rough paddocks to avoid implements from shaking violently. This will improve the longevity of both tractor and implements.

4.6.5 Towing, hauling and dragging

1. Use the drawbar supplied with the tractor. The drawbar is equipped with a clevis and clevis pin and can be used with the clevis up, down or removed to suit the requirements. Mounting holes are provided along its length to offer a range of adjustments to suit the application. It is recommended to remove the drawbar when not in use and store it in the shed or safe place for use when needed.
2. Ensure the tractor has sufficient ballast to control the trailer/implement in the environment and conditions it is being operated in. Make certain the tractor is not overloaded with ballast.

4.6.6 Operating the P.T.O.

1. The two speed P.T.O. provides standard 540 as well as 1000 rpm. The P.T.O. control is a three position lever. Push the lever forward for 540rpm, and rearward for 1000 rpm with neutral in between.
2. Most P.T.O. driven implements in Australia are designed to run at 540rpm. Do not run 1000 speed P.T.O. rpm unless it is specified by the implement manufacturer.
3. Engage the P.T.O. by fully depressing the clutch and shifting the P.T.O. control lever forward for 540 rpm rating. Release the clutch slowly when driving an implement then increase the tractor engine rpm using the hand throttle to operating speed.
4. Ensure the tractor is firmly secured with the park brake engaged when carrying out stationary operations, such as wood chipping, log splitting and using the backhoe.

5. Mechanical Adjustment

5.1 Engine

Please refer to the engine operation manual for adjustment and maintenance.

5.2 Clutch

5.2.1 Dual stage clutch

Under normal operation the clutch will wear and need to be checked and adjusted at regular service intervals as required. Avoid excessive clutch slip. If the clutch is not immediately adjusted to stop abnormal slipping, premature clutch plate wear will occur with possible damage to the clutch assembly through over heating, or metal on metal wear.

5.2.2 Clutch assembly

Clutch assembly and adjustment should be carried out by a qualified technician.

The dual stage clutch structure is shown in Fig. 5-2-1.

Two Stage Clutch Adjustment:

1. Remove the clutch inspection cover on the side of the bell housing.
2. First adjust the main pull rod (15) so that the threaded end of the pull rod protrudes 1mm past its 16mm lock nuts. There are two other Main release fingers (9) to be adjusted. Use the throw out bearing as a guide by measuring the gap between the first adjusted finger (9) and the throw out bearing (10) to adjust the other two fingers so they are within 0.25mm on the same vertical plane. The three release fingers should contact the throw out bearing at the same time when the clutch pedal is pushed.
3. Adjust the three Sub pull rods (7) using their two lock nuts so that the gap between the washer and main clutch pressure plate (3) is 0.5mm. You need to rotate the clutch assembly to gain access to the three adjustment points.
4. Finally adjust the pedal free play at the adjustable pull rod (13) when the clutch pedal is at rest so that the clearance between the main release fingers (9) and release bearing (10) is 3mm.
5. Test the clutch operation.

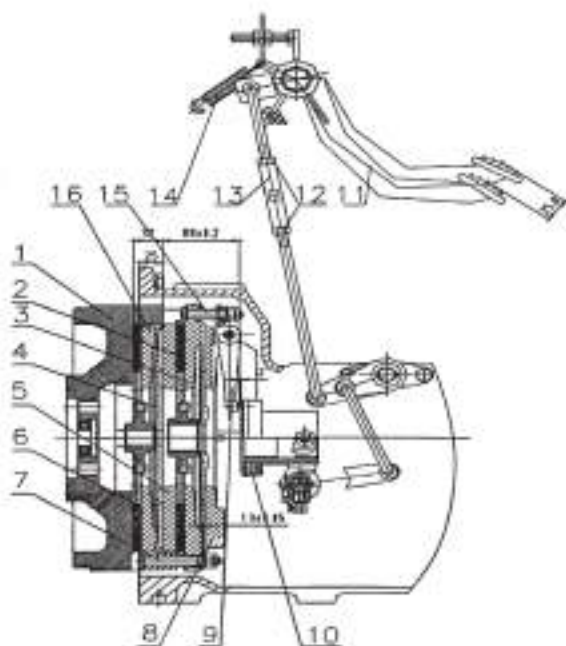


Fig. 5-2-1 Manual double-acting clutch

1. Flywheel
2. Main clutch driven plate assembly
3. Main clutch pressure plate
4. Dish spring
5. Fixed clutch pressure plate
6. Sub-clutch driven plate assembly
7. Sub pull rod
8. Clutch cover
9. Main release fingers
10. Release bearing
11. Clutch pedal
12. Adjusting nut
13. Adjustable pull rod
14. Return spring
15. Main pull rod
16. PTO clutch pressure plate

Note: The main clutch should release when the pedal is half way down its stroke and the PTO clutch should release 30 – 40mm before the bottom of the pedal stroke. Readjust as required.

5.3. Wheel adjustments

5.3.1 Toe-in adjustment

In normal operation the front wheels will periodically require toe-in adjustment due to normal wear and tear. If the adjustments are not carried out, rapid or uneven tyre wear will occur.

Adjusting toe-in:

1. Steer the front wheels straight forward.
2. Measure the front and rear distances between the steering wheels at axle height to the centre of the tyre tread.
3. Adjust the steering tie rod till the front distance is 4 to 12 mm less than the rear distance.
4. Tighten the lock nuts on both ends of the steering tie rod.

Note: One side of the steering tie rod has a left hand thread.

5.3.2 Front axle pivot

The front axle pivot housing should have some clearance with the front axle support bracket on the tractor. This ensures the front axle can swing through its limited range without slopping back and forth on the pivot pin. Check and adjust the clearance by removing the pivot pin and adding or removing shims as required.

5.3.3 Rear wheel track – 4WD

The rear wheel track can be set to a number of positions. Only use the maximum setting when required. The front wheels should remain as factory set or increased pressure will be applied to the steering equipment and damage may result.

5.3.4 Rear wheel track

Rear wheels can be fitted with the concave side of wheel disk facing either inward or outward. The wheel track width is different for each of these fitting positions.

Danger!

Only remove the rear wheels, when the tractor has been stabilised with a suitable mechanical safety stands, or an approved hoist.

Points for attention:

1. After adjusting the wheel track make sure the front and rear wheels are symmetrical about the tractor centreline.
2. Rear lug tyred wheels, can be swapped side to side when adjusting the wheel tracks. (for rear wheels only).
3. Make sure that the direction of lugs are correct for traction when moving forward.

5.3.5 Front drive axle

Oil is drained using three plugs. One at the diff centre and the other two on the outside of the front wheel hubs. The oil plug on the front wheel hubs is also used as fill and oil level indicator by rotating the front wheel hub to the required position. The oil level should be half way up the hub. The front axle oil is filled through the fill and dip stick plug on the right hand side of the axle housing near the breather tube.

5.4 Power steering structure and points for attention

The power steering reservoir is located under the bonnet near the radiator. As long as the engine is running, the hydraulic pump will provide power steering to the tractor which won't be affected when using the hydraulic linkage system.

1. Power steering is provided through the hydraulic steering orbital. It requires a light force of 4 – 5 Nm (2.5 – 3.5ftlb) to steer the tractor in normal dry conditions. If the steering jams or becomes heavy do not use excessive force or wrench the steering wheel as damage could result.
2. If moving the tractor manually by towing or pushing, do not apply a force greater than 250Nm (180ftlb) to the steering wheel.
3. Servicing and maintaining the hydraulic orbital gear should be carried out by a qualified trade's person.
4. Ensure the nuts, bolts and hydraulic connections

are checked and tensioned to avoid oil leaking from couplings and connections.

5. Make sure dirt, dust and grit can't contaminate the hydraulic power steering system through the reservoir, pump, oil lines and galleries when carrying out maintenance.
6. Power steering oil / fluid should be changed regularly along with cleaning or replacing the filter as per the service schedule.
7. When using full lock do not hold the steering wheels tight against the stops, back the steering off about an inch or 25mm. When held hard on full lock the hydraulic steering pump will load up with pressure and activate the relief valve making a recognisable noise, usually drowned by the sound of the diesel motor. Consistently holding the steering on full lock can damage the hydraulic relief valve.

5.5 Brakes

The tractor is fitted with wet brakes that will wear with time and usage requiring adjustment and eventually replacement.

This will be noticed over time as extra pedal travel. Sometimes uneven wearing will occur. When this is noticed the brakes should be checked and adjusted to bring them back into sync. Incorrect adjustment can lead to brake dragging and accelerated wear in the brake system.

5.5.1 Brake adjustment

When the brakes need adjusting, adjust both sides using small increments and test.

Eventually some internal brake parts will wear out and require replacing. This should be done by a qualified trade technician. For your safety regularly check and maintain the brakes to keep them working well. Don't wait till they are unbalanced, out of adjustment and dangerous to use.

The wet brakes on this tractor are very effective and will require minimal adjustment. Before adjusting the brakes, thoroughly inspect the linkage system and pivot points. Damaged or ceased parts need to be rectified before any adjustment is carried out. Brake adjustment consists of adjusting the length of up pull rod (3) or lower pull rod (5) so the brake pedals fully engage and lock the rear wheels between 75 – 100mm of travel. If brake pedal travel is too long, shorten either pull rod one turn at a time. Check that the brakes are engaging simultaneously when the pedals are interlocked. Adjust as required.

5.6 Electrical system

The tractor is fitted with a 12V electrical system and is negative-earth as per standard convention.

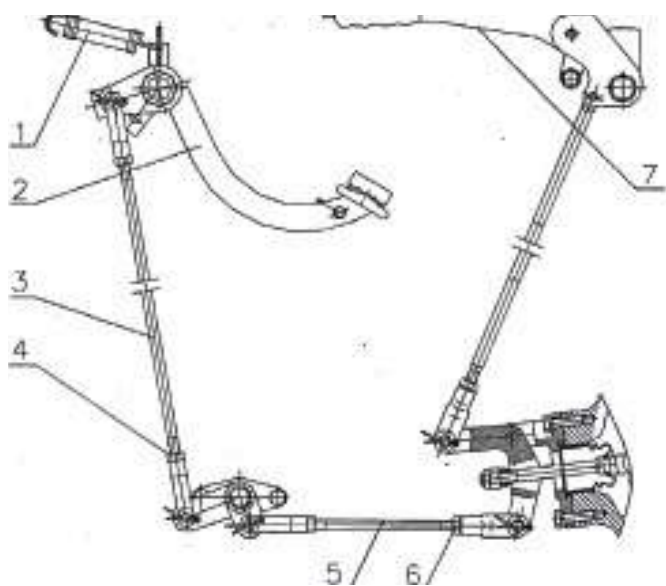


Fig. 5-5-1 DongFeng ZB 65 / 85 Brake Adjustment

1. Return spring
2. Brake pedal
3. Up pull rod
4. Adjusting nut
5. Lower pull rod
6. Adjusting nut
7. Park brake control lever

5.6.1 Battery

The tractor is equipped with a 12 volt battery. When the ammeter's pointer turns towards the "+", positive side, the battery is charging, and when ammeter's pointer turns towards "-", the negative side, the battery is discharging. Ensure the battery is charging while the tractor is working in normal conditions.

An AVO meter can be used to check the batteries charge state. Do not short circuit the battery to assess its state of charge. A hydrometer can also be used to check the batteries charge level. Do not connect the positive terminal to the body of the tractor. The electrolyte level of the battery lies between the "UPPER" and "LOWER" marks on the battery case. Once it is under the "LOWER" mark, distilled water should be added.

When the battery is low on charge, the tractor will be hard or impossible to start. The battery needs to be charged from an external power source.

Persistently trying to start the engine with a low charge battery can damage the electrical system including the starter motor.

Points for attention:

1. When charging the battery, loosen or remove all battery vent plugs.
2. Make sure that all cells of the battery are immersed in electrolyte. Add distilled water in a well-ventilated area as required.
3. When the specific gravity of the electrolyte measures between 1.28 - 1.29g/cm³, the charging process has completed. (Using the hydrometer)
4. After charging, let the battery 'rest' for at least 40 minutes before putting it into service.
5. Battery replacement: contact your dealer for the correct battery to suit your model.

5.6.2 Fuse

The fuses are located on the inner side of the clutch pedal well.

Before replacing a blown fuse with a new one of the same current rating, determine the exact causes of the failure and make the necessary repairs.

5.7 Final drive system

If metal filings, shavings, shards or pieces are found during regular maintenance, contact a qualified trades person for assistance.

6. Technical Maintenance

6.1 Oil and lubrication

6.1.1 Diesel oil and lubricants : (Oil Table)

6.1.2 Lubrication points

Oil fill locations:

Front diff and front hubs

Power steering reservoir

Engine sump – tappet cover

Transmission – under floor matt

Rear diff housing – back right hand side

Hydraulic oil reservoir

6.1.3 Grease nipples

1 x Front axle swivel housing

2 x Tie rod ball joints

4 x Front axle steering joints (2 x top and 2 x bottom)

2 x Power steering ram pivot and ball joints

1 x clutch pedal pivot

2 x brake pedal pivot

6.1.4 Oil level inspection points

Engine dipstick

Power steering reservoir dipstick

Transmission dipstick

Front wheel drive axle dipstick.

Front wheel hub level plug (when plug is horizontally centred)

Rear axle dip stick

Hydraulic oil reservoir

6.1.5 Oil drain plugs on

Bottom of the engine sump

Under front diff

On front wheel hubs (when oil plug is rotated low)

Under transmission

Under rear axle (above drawbar).

In order to keep your Tractor in good serviceable condition and prolong the life of the machine the following service guide must be followed. DongFeng recommends using genuine oil and filters for all services to ensure all components of the machine are protected and operate within

manufactures specifications. The use of non genuine parts including filters and oil that does not meet specification will void your warranty. Please fill out the Maintenance Service Record at the rear of this manual to keep track of the machine's service history. Also keep records and receipts of all oils and filters purchased for each and every service.

Refer to Chapter 5 Mechanical Adjustment and Chapter 7 Maintenance Checks for instructions and specifications on carrying out tractor maintenance. If any information is not supplied, or your machine differs from the one in the manual please contact your nearest dealer for information and guidance.

6.2 Maintenance schedule

6.2.1 Daily checks

1. Check engine oil level and fill as required.
2. Check front diff and front wheel hubs.
3. Inspect radiator core for blockage, blow out and reinspect, clean as required.
4. Check filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Be sure to wipe out intake with a damp cloth. Do not use compressed air to blow it out, as this will push dust particles into the engine.
5. Check coolant level and top up as required.
6. Check hydraulic steering oil and top up as required.
7. Check fan belt and adjust as required.
8. Check gearbox and hydraulic reservoir oil and top up as required.
9. Check fuel level and fill before each shift.
10. Check wheel nut tension and tyre pressures, adjust as required.
11. Inspect machine for loose or broken bolts, tighten or replace as required.
12. Inspect hydraulic hoses and rams for leaks and repair as required.
13. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering and stops (and water pump bearings (if grease nipple fitted)).

6.2.2 30 Hour 1st service

1. Change engine oil and filter.
2. Change fuel filter and clean inline strainer.
3. Change injector pump oil.
4. Change gearbox oil and filter, change hydraulic reservoir oil and filter & change front wheel hubs oil.
5. Change front diff oil.
6. Change hydraulic steering oil, clean strainer and refill with new oil.
7. Check tappet clearance and adjust as required.
8. Check air filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Inspect inlet manifold and hoses for leaks, repair as required.
9. Drain coolant, flush cooling system and refill with new coolant.
10. Check wheel nut tension and tyre pressures, adjust as required.
11. Inspect radiator core for blockage, blow out and reinspect, clean as required.
12. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering stops and water pump bearings (if grease nipple fitted).
13. Inspect machine for loose or broken bolts, tighten or replace as required.
14. Inspect engine, transmission and final drives for oil leaks and repair as required.
15. Check brake and clutch adjustment and adjust as required. Request technical support if unsure how to carry out adjustments.

6.2.3 50 Hourly service

1. Inspect radiator core for blockage, blow out and reinspect, clean as required
2. Check air filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Inspect daily. Inspect inlet manifold and hoses for leaks, repair as required.
3. Check coolant level and top up or replace as required.
4. Check fan belt and adjust as required.
5. Check gearbox & hydraulic reservoir oil and top up as required.

6. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering stops and water pump bearings (if grease nipple fitted).
7. Check wheel nut tension and tyre pressures, adjust as required.
8. Inspect hydraulic hoses and rams for leaks and repair as required.
9. Inspect machine for loose or broken bolts, tighten or replace as required.
10. Check brake and clutch adjustment and adjust as required. Request technical support if unsure how to carry out adjustments.

6.2.4 100 Hourly service

1. Change engine oil and filter.
2. Change fuel filter and clean inline strainer.
3. Change injector pump oil.
4. Change front diff and front hub oils.
5. Change hydraulic steering oil, clean strainer and refill with new oil.
6. Inspect radiator core for blockage, blow out and reinspect, clean as required.
7. Check head tension and tighten, as required, to manufactures specifications.
8. Check air filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Inspect inlet manifold and hoses for leaks, repair as required.
9. Drain and flush cooling system, refill with new coolant.
10. Check fan belt and adjust as required.
11. Check gearbox & hydraulic reservoir and top up as required -change oil and filter every 200 Hrs / 2 years.*

Note: Transmission oil change interval:
-Machines garaged under cover - every 2 years. - Machines left out in the open - annually.
12. Check wheel nut tension and tyre pressures, adjust as required.
13. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering stops and water pump bearings (if grease nipple fitted).
14. Inspect hydraulic hoses and rams for leaks and repair as required.
15. Inspect machine for loose or broken bolts, tighten or replace as required.

16. Check brake and clutch adjustment and adjust as required. Request technical support if unsure how to carry out adjustments.

6.2.5 250 Hourly service

Complete the 50 Hourly Interval Service and

1. Check tappet clearance and adjust as required.
2. Inspect engine, transmission and final drives for oil leaks and repair as required.

6.2.6 500 Hourly service

1. Change engine oil and filter, check oil pressure relief valve and adjust as required.
2. Change fuel filter and clean inline strainer.
3. Change injector pump oil, check spill timing and adjust as required.
4. Change front diff and front hubs oils.
5. Change hydraulic steering oil, clean strainer and refill with new oil.
6. Change gearbox & hydraulic reservoir oil and filter, flush transmission housing and refill.
7. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering stops and water pump bearings (if grease nipple fitted).
8. Check wheel nut tension and tyre pressures, adjust as required.
9. Check tappet clearance and adjust as required.
10. Check air filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Inspect inlet manifold and hoses for leaks, repair as required.
11. Drain coolant, flush cooling system and refill with new coolant.
12. Inspect radiator core for blockage, blow out and reinspect, clean as required.
13. Inspect machine for loose or broken bolts, tighten or replace as required.
14. Inspect engine, transmission and final drives for oil leaks and repair as required.
15. Check brake and clutch adjustment and adjust as required. Request technical support if unsure how to carry out adjustments.

6.2.7 1000 Hourly service

1. Change engine oil and filter, check oil pressure

relief valve and adjust as required.

2. Change fuel filter and clean inline strainer.
3. Change injector pump oil, check spill timing and adjust as required.
4. Change front diff and hub oils.
5. Change hydraulic steering oil, clean strainer, refill with oil.
6. Change gearbox & hydraulic reservoir oil and filter, flush transmission housing, and refill.
7. Grease loader pins, pedal shafts, tie rod ends, king pins, drive shafts, steering stops and water pump bearings (if grease nipple fitted).
8. Check wheel nut tension and tyre pressures, adjust as required.
9. Check tappet clearance and adjust as required.
10. Check air filter and dust bowl for contaminant and clean as required, replace every 50 hours in very dusty conditions. Inspect inlet manifold and hoses for leaks, repair as required.
11. Drain coolant, flush cooling system and refill with new coolant.
12. Inspect radiator core for blockage, blow out and reinspect, clean as required.
13. Inspect machine for loose or broken bolts, tighten or replace as required.
14. Inspect engine, transmission and final drives for oil leaks and repair as required.
15. Check brake and clutch adjustment and adjust as required. Request technical support if unsure how to carry out adjustments.

6.3 Tractor storage

When your tractor is to be kept in storage for an extended period of time, carry out the following instructions.

- Engine maintenance should be carried out as per the instructions in the engine manual.
- Thoroughly clean the tractor. Brush a protective coating on any unpainted or scratched metal parts; store the tractor under cover, in a dry well-ventilated area.
- Ensure that all controls are in neutral, off or released position (including the ignition switch and the park brake).
- Do not leave the key in the starter switch.

- Make sure that all hydraulic piston rods are fully withdrawn.
- Fill the fuel tank to maximum level.

6.4 Maintenance service

Scheduled maintenance must be completed by a qualified technician at the appropriate intervals and recorded on this sheet. Records of filters and oils purchased for each service must accompany this record sheet as proof of service. It is the responsibility of the purchaser to follow this maintenance schedule. Failure to complete maintenance intervals will void machine warranty.

Maintenance Check list:

Tick or fill in the indicator circles as you progress through the service.

		Break-in											Since then	Reference page
		30	50	100	150	200	250	300	350	400	450	500		
Engine oil	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100Hr/annually	
Engine oil filter	Replacement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100Hr/annually	
Fuel filter element	Replacement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100 Hr	
Fuel line	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Replacement**	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 2 year	
Injector pump oil	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100 Hr	
Front diff & final drive oil (4WD only)	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100 Hr	
Transmission fluid	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 200 Hr / 2 year	
Hydraulic reservoir	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 200 Hr / 2 year	
Hydraulic oil filter	Cleaning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 200 Hr / 2 year	
Front axle case front-back play range	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 200 Hr	
Power steering oil	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100 Hr	
Radiator	Cleaning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Drain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100Hr/annually	
Radiator hose	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Replacement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 2 year	
Valve clearance	Check***	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 250 Hr	
Head tension	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1 x retension	
Air Cleaner element	Clean	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Replacement*	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100Hr/annually	
Fan belt tension	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
Water pump (grease nipple) if supplied	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
Wheel nuts / Tyre pressure	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	visual check daily	
Toe-in	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 100 Hr	
Greasing		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
Clutch adjustment	Check / Inspect	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Adjust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	adjust as required	
Brake adjustment	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	
	Adjust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	adjust as required	
Battery electrolyte level	Check	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	every 50 Hr	

* Every year or every 4 cleaning cycles.

** Replace only if necessary.

*** Ask your East Wind dealer to perform this service.