

**580ST
590ST
695ST
Stage IV
Tractor Backhoe Loader**

SERVICE MANUAL

Part number 48090752
English
February 2017

© 2017 CNH Industrial America LLC. All Rights Reserved.

CASE
CONSTRUCTION



SERVICE MANUAL

580ST STAGE IV, SIDE-SHIFT (SS), FOUR-WHEEL DRIVE (4WD), MARBLE CUTTING, 580ST STAGE IV, STRAIGHT LOADER ARM (SLA), SIDE SHIFT (SS), FOUR-WHEEL DRIVE (4WD), 580ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS), TWO-WHEEL DRIVE (2WD), 590ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS), FOUR-WHEEL DRIVE (4WD), 695ST STAGE IV, SIDE-SHIFT (SS), FOUR-WHEEL DRIVE (4WD), MARBLE CUTTING, 695ST STAGE IV, TOOL CARRIER (TC), CENTER PIVOT (CP), 695ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS)

Link Product / Engine

Product	Market Product	Engine
580ST STAGE IV, SIDE-SHIFT (SS), FOUR-WHEEL DRIVE (4WD), MARBLE CUTTING	Europe	F5BFL413B*C002
580ST STAGE IV, STRAIGHT LOADER ARM (SLA), SIDE SHIFT (SS), FOUR-WHEEL DRIVE (4WD)	Europe	F5BFL413B*C002
580ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS), TWO-WHEEL DRIVE (2WD)	Europe	F5BFL413B*C002
590ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS), FOUR-WHEEL DRIVE (4WD)	Europe	F5BFL413A*B001
695ST STAGE IV, TOOL CARRIER (TC), CENTER PIVOT (CP)	Europe	F5BFL413A*B001
695ST STAGE IV, SIDE-SHIFT (SS), FOUR-WHEEL DRIVE (4WD), MARBLE CUTTING	Europe	F5BFL413A*B001
695ST STAGE IV, TOOL CARRIER (TC), SIDE SHIFT (SS)	Europe	F5BFL413A*B001

Contents

INTRODUCTION

Engine	10
[10.001] Engine and crankcase	10.1
[10.216] Fuel tanks	10.2
[10.206] Fuel filters	10.3
[10.218] Fuel injection system.....	10.4
[10.500] Selective Catalytic Reduction (SCR) exhaust treatment.....	10.5
[10.400] Engine cooling system	10.6
[10.414] Fan and drive	10.7
Power coupling	19
[19.100] Drive shaft.....	19.1
Transmission	21
[21.112] Power shuttle transmission.....	21.1
[21.134] Power shuttle transmission external controls	21.2
[21.154] Power shuttle transmission internal components	21.3
[21.113] Powershift transmission	21.4
[21.135] Powershift transmission external controls.....	21.5
[21.105] Powershift transmission hydraulic components	21.6
[21.155] Powershift transmission internal components.....	21.7
Front axle system	25
[25.100] Powered front axle	25.1
[25.102] Front bevel gear set and differential	25.2
[25.108] Final drive hub, steering knuckles, and shafts	25.3
[25.400] Non-powered front axle	25.4
Rear axle system	27
[27.100] Powered rear axle.....	27.1

**Thanks very much for your reading,
Want to get more information,
Please click here, Then get the complete
manual**

JustClickHere 

NOTE:

**If there is no response to click on the link above,
please download the PDF document first, and then
click on it.**

**Have any questions please write to me:
admin@servicemanualperfect.com**

[27.106] Rear bevel gear set and differential	27.2
[27.120] Planetary and final drives	27.3
[27.450] Rear-powered steerable axle	27.4
Brakes and controls	33
[33.202] Hydraulic service brakes	33.1
[33.110] Parking brake or parking lock	33.2
Hydraulic systems.....	35
[35.000] Hydraulic systems.....	35.1
[35.300] Reservoir, cooler, and filters.....	35.2
[35.104] Fixed displacement pump.....	35.3
[35.106] Variable displacement pump	35.4
[35.102] Pump control valves.....	35.5
[35.350] Safety and main relief valves	35.6
[35.357] Pilot system	35.7
[35.128] Auxiliary hydraulic function control	35.8
[35.355] Hydraulic hand control	35.9
[35.352] Hydraulic swing system	35.10
[35.724] Front loader hydraulic system control.....	35.11
[35.701] Front loader arm hydraulic system	35.12
[35.723] Front loader bucket hydraulic system	35.13
[35.726] Excavator and backhoe hydraulic controls.....	35.14
[35.736] Boom hydraulic system	35.15
[35.737] Dipper hydraulic system.....	35.16
[35.738] Excavator and backhoe bucket hydraulic system.....	35.17
[35.739] Swing arm hydraulic system	35.18
[35.703] Stabilizer hydraulic system.....	35.19
[35.740] Telescopic arm hydraulic system.....	35.20
Frames and ballasting	39

[39.100] Frame	39.1
[39.140] Ballasts and supports	39.2
Steering.....	41
[41.101] Steering control	41.1
[41.106] Tie rods.....	41.2
[41.200] Hydraulic control components.....	41.3
[41.216] Cylinders	41.4
Wheels	44
[44.511] Front wheels.....	44.1
[44.520] Rear wheels.....	44.2
Cab climate control	50
[50.100] Heating	50.1
[50.104] Ventilation	50.2
[50.200] Air conditioning.....	50.3
Electrical systems	55
[55.100] Harnesses and connectors.....	55.1
[55.301] Alternator.....	55.2
[55.302] Battery.....	55.3
[55.011] Fuel tank system	55.4
[55.012] Engine cooling system	55.5
[55.640] Electronic modules	55.6
[55.512] Cab controls.....	55.7
[55.991] Telematics	55.8
[55.DTC] FAULT CODES.....	55.9
Front loader and bucket.....	82
[82.100] Arm.....	82.1
[82.300] Bucket.....	82.2
Booms, dippers, and buckets	84

[84.114] Boom pivoting support	84.1
[84.910] Boom	84.2
[84.912] Dipper arm	84.3
[84.100] Bucket.....	84.4
Platform, cab, bodywork, and decals	90
[90.105] Machine shields and guards	90.1



INTRODUCTION

Contents

INTRODUCTION

Foreword - Important notice regarding equipment servicing (*)	3
Safety rules (*)	4
Safety rules	5
Safety rules - Specific precautions to this machine	16
Safety rules - Ductile iron	17
Safety rules - Ecology and the environment (*)	18
Basic instructions - Support strut for loader lift arm	19
Basic instructions - Engine hood	22
Basic instructions - Organic Acid Technology (OAT) coolant	23
Torque - Minimum tightening torques for normal assembly	25
Torque - Standard torque data for hydraulic connections	30
Torque - Hydraulic fittings and connectors - standard install procedures	37
Basic instructions - Shop and assembly (*)	43
Swing tower - Basic instructions	45
Abbreviation Measurements	46
Capacities - 580ST and 590ST (*)	48
Capacities - 695ST (*)	50
General specification - Diesel fuel (*)	52
General specification - Biodiesel fuels	53
Recommended engine oil for operating temperature ranges	55
Consumables	56
Hydraulic contamination	58
General specification - Hydraulic system component specifications	59
General specification - Engine	61
Bucket - General specification - Front loader bucket	63
Bucket - General specification - Backhoe bucket	64
Product identification	65
Component identification (*)	69

(*) See content for specific models

Foreword - Important notice regarding equipment servicing

580ST	
590ST	
695ST	

All repair and maintenance work listed in this manual must be carried out only by qualified dealership personnel, strictly complying with the instructions given, and using, whenever possible, the special tools.

Anyone who performs repair and maintenance operations without complying with the procedures provided herein shall be responsible for any subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional, or local dealers, reject any responsibility for damages caused by parts and/or components not approved by the manufacturer, including those used for the servicing or repair of the product manufactured or marketed by the manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the manufacturer in case of damages caused by parts and/or components not approved by the manufacturer.

The manufacturer reserves the right to make improvements in design and changes in specifications at any time without notice and without incurring any obligation to install them on units previously sold. Specifications, descriptions, and illustrative material herein are as accurate as known at time of publication but are subject to change without notice.

In case of questions, refer to your CASE CONSTRUCTION Sales and Service Networks.

Safety rules

580ST	
590ST	
695ST	


Personal safety





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

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

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

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

 CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: Notice indicates a situation that, if not avoided, could result in machine or property damage.

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: Note indicates additional information that clarifies steps, procedures, or other information in this manual.

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

Safety rules

General safety rules

Use caution when you operate the machine on slopes. Raised equipment, full tanks and other loads will change the center of gravity of the machine. The machine can tip or roll over when near ditches and embankments or uneven surfaces.

Never permit anyone other than the operator to ride on the machine.

Never operate the machine under the influence of alcohol or drugs, or while you are otherwise impaired.

When digging or using ground-engaging attachments, be aware of buried cables. Contact local utilities to determine the locations of services.

Pay attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety.

Hydraulic oil or diesel fuel leaking under pressure can penetrate the skin, causing serious injury or infection.

- DO NOT use your hand to check for leaks. Use a piece of cardboard or paper.
- Stop the engine, remove the key, and relieve the pressure before you connect or disconnect fluid lines.
- Make sure that all components are in good condition. Tighten all connections before you start the engine or pressurize the system.
- If hydraulic fluid or diesel fuel penetrates the skin, seek medical attention immediately.
- Continuous long term contact with hydraulic fluid may cause skin cancer. Avoid long term contact and wash the skin promptly with soap and water.

Keep clear of moving parts. Loose clothing, jewelry, watches, long hair, and other loose or hanging items can become entangled in moving parts.

Wear protective equipment when appropriate.

DO NOT attempt to remove material from any part of the machine while it is being operated or while components are in motion.

Make sure that all guards and shields are in good condition and properly installed before you operate the machine. Never operate the machine with shields removed. Always close access doors or panels before you operate the machine.

Dirty or slippery steps, ladders, walkways, and platforms can cause falls. Make sure these surfaces remain clean and clear of debris.

A person or pet within the operating area of a machine can be struck or crushed by the machine or its equipment. DO NOT allow anyone to enter the work area.

Raised equipment and/or loads can fall unexpectedly and crush persons underneath. Never allow anyone to enter the area underneath raised equipment during operation.

Never operate the engine in enclosed spaces as harmful exhaust gases may build up.

Before you start the machine, be sure that all controls are in neutral or park lock position with the backhoe swing lock pin in the lock position. The backhoe swing lock pin must be in the lock position when you are not using the backhoe.

Start the engine only from the operator's seat. If you bypass the safety start switch, the engine can start with the transmission in gear. Do not connect or short across terminals on the starter solenoid. Attach jumper cables as described in the manual. Starting in gear may cause death or serious injury.

Always keep windows, mirrors, all lighting, and Slow-Moving Vehicle (SMV) emblem clean to provide the best possible visibility while you operate the machine.

INTRODUCTION

Operate controls only when seated in the operator's seat, except for those controls expressly intended for use from other locations.

From the operator's platform, install the backhoe swing lock pin when the backhoe is not in use and before all other operation.

Before you leave the machine:

1. Park the machine on a firm, level surface.
2. Put all controls in neutral or park lock position.
3. Engage the parking brake. Use wheel chocks if required.
4. Lower the loader bucket or other front attachment to the ground.
5. Move the operator's seat to the backhoe operating position and choose one of the following backhoe positions:
 - Move the backhoe into the stowed position and from the operator's seat install the backhoe swing lock pin. See **Swing tower - Basic instructions ()**.
 - Lower the backhoe bucket or other attachment to the ground.
6. Turn off the engine and remove the key.
7. Move the operator's seat into the driving position.

When, due to exceptional circumstances, you decide to keep the engine running after you leave the operator's station, then you must follow these precautions:

1. Bring the engine to low idle speed.
2. Disengage all drive systems.

WARNING

**Some components may continue to run down after you disengage drive systems.
Make sure all drive systems are fully disengaged.
Failure to comply could result in death or serious injury.**

W0113A

3. Move the operator's seat to the backhoe operating position and choose one of the following backhoe positions:
 - Move the backhoe into the stowed position and from the operator's seat install the backhoe swing lock pin. See **Swing tower - Basic instructions ()** .
 - Lower the backhoe bucket or other attachment to the ground.
4. Shift the transmission into neutral.
5. Apply the parking brake.

General maintenance safety

Do not attempt to clean, lubricate, clear obstructions, or make adjustments to the machine while it is in motion or while the engine is running.

Keep the area used for servicing the machine clean and dry. Clean up spilled fluids.

Service the machine on a firm, level surface.

Install guards and shields after you service the machine.

Close all access doors and install all panels after servicing the machine.

Always make sure that working area is clear of tools, parts, other persons and pets before you start operating the machine.

Unsupported hydraulic cylinders can lose pressure and drop the equipment, causing a crushing hazard. Do not leave equipment in a raised position while parked or during service, unless the equipment is securely supported.

Jack or lift the machine only at jack or lift points indicated in this manual.

Incorrect towing procedures can cause accidents. When you tow a disabled machine follow the procedure in this manual. Use only rigid tow bars.

Stop the engine, remove the key, and relieve pressure before you connect or disconnect fluid lines.

Stop the engine and remove the key before you connect or disconnect electrical connections.

Scalding can result from incorrect removal of coolant caps. Cooling systems operate under pressure. Hot coolant can spray out if you remove a cap while the system is hot. Allow the system to cool before you remove the cap. When you remove the cap, turn it slowly to allow pressure to escape before you completely remove the cap.

Replace damaged or worn tubes, hoses, electrical wiring, etc.

The engine, transmission, exhaust components, and hydraulic lines may become hot during operation. Take care when you service such components. Allow surfaces to cool before you handle or disconnect hot components. Wear protective equipment when appropriate.

When welding, follow the instructions in the manual. Always disconnect the battery before you weld on the machine. Always wash your hands after you handle battery components.

Wheels and tires

Make sure that tires are correctly inflated. Do not exceed any recommended load or pressure. Follow the instructions in the manual for proper tire inflation.

Tires are heavy. Handling tires without proper equipment could cause death or serious injury.

Never weld on a wheel with a tire installed. Always remove the tire completely from the wheel prior to welding.

Always have a qualified tire technician service the tires and wheels. If a tire has lost all pressure, take the tire and wheel to a tire shop or your dealer for service. Explosive separation of the tire can cause serious injury.

DO NOT weld to a wheel or rim until the tire is completely removed. Inflated tires can generate a gas mixture with the air that can be ignited by high temperatures from welding procedures performed on the wheel or rim. Removing the air or loosening the tire on the rim (breaking the bead) will NOT eliminate the hazard. This condition can exist whether tires are inflated or deflated. The tire MUST be completely removed from the wheel or rim prior to welding the wheel or rim.

Driving on public roads and general transportation safety

Comply with local laws and regulations.

Make sure that the backhoe swing lock pin is in the lock position. See **Swing tower - Basic instructions ()** for more information.

Use appropriate lighting to meet local regulations.

Make sure that the Slow-Moving Vehicle (SMV) emblem is visible.

Make sure that the brake pedal latch is engaged. You must lock brake pedals together for road travel.

Use safety chains for trailed equipment when safety chains are provided with machine or equipment.

Lift implements and attachments high enough above ground to prevent accidental contact with road.

When you transport equipment or a machine on a transport trailer, make sure that it is properly secured. Be sure the Slow-Moving Vehicle (SMV) on the equipment or machine is covered while being transported on a trailer.

Be aware of overhead structures or power lines and make sure that the machine and/or attachments can pass safely under.

Travel speed should be such that you maintain complete control and machine stability at all times.

Slow down and signal before turning.

Pull over to allow faster traffic to pass.

Follow correct towing procedure for equipment with or without brakes.

Fire and explosion prevention

Fuel or oil that is leaked or spilled on hot surfaces or electrical components can cause a fire.

Crop materials, trash, debris, bird nests, or flammable material can ignite on hot surfaces.

Always have a fire extinguisher on or near the machine.

Make sure that the fire extinguisher(s) is maintained and serviced according to the manufacturer's instructions.

At least once each day and at the end of the day, remove all trash and debris from the machine especially around hot components such as the engine, transmission, exhaust, battery, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

At least once each day, remove debris accumulation around moving components such as bearings, pulleys, belts, gears, cleaning fans, etc. More frequent cleaning of your machine may be necessary depending on the operating environment and conditions.

Inspect the electrical system for loose connections and frayed insulation. Repair or replace loose or damaged parts.

Do not store oily rags or other flammable material on the machine.

Do not weld or flame cut any items that contain flammable material. Clean items thoroughly with non-flammable solvents before welding or flame-cutting.

Do not expose the machine to flames, burning brush, or explosives.

Promptly investigate any unusual smells or odors that may occur during operation of the machine.

General battery safety

Always wear eye protection when you work with batteries.

Do not create sparks or have open flame near a battery.

Ventilate the area when you charge a battery or use a battery in an enclosed area.

Disconnect the negative (-) terminal first and reconnect the negative (-) terminal last.

When you weld on the machine, disconnect both terminals of the battery.

Do not weld, grind, or smoke near a battery.

When you use auxiliary batteries or connect jumper cables to start the engine, use the procedure shown in the operator's manual. Do not short across terminals.

Follow the manufacturer's instructions when you store and handle batteries.

Battery post, terminals, and related accessories contain lead and lead compounds. Wash hands after handling.

Battery acid causes burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes, or clothing. Antidote (external): Flush with water. Antidote (eyes): flush with water for 15 minutes and seek medical attention immediately. Antidote (internal): Drink large quantities of water or milk. Do not induce vomiting. Seek medical attention immediately.

Keep out of reach of children and other unauthorized persons.

Reflectors and warning lights

You must use flashing amber warning lights when you operate equipment on public roads.

⚠ Seat belts ⚠

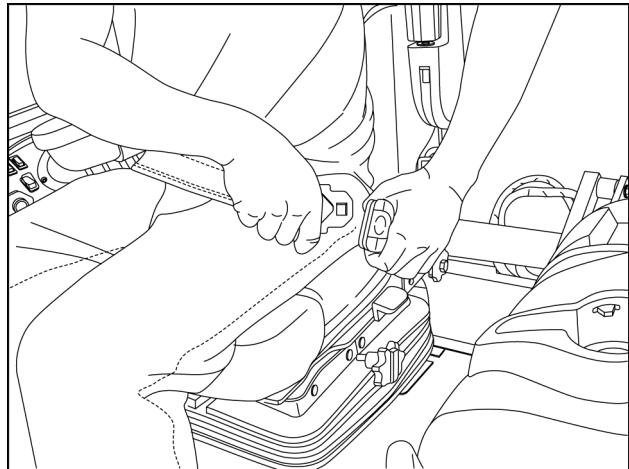
Seat belts must be worn at all times.

Seat belt inspection and maintenance:

- Keep seat belts in good condition.
- Keep sharp edges and items that can cause damage away from the belts.
- Periodically check belts, buckles, retractors, tethers, slack take-up system, and mounting bolts for damage and wear.
- Replace all parts that have damage or wear.
- Replace belts that have cuts that can make the belt weak.
- Check that bolts are tight on the seat bracket or mounting.
- If the belt is attached to the seat, make sure that the seat or seat brackets are mounted securely.
- Keep seat belts clean and dry.
- Clean belts only with soap solution and warm water.
- Do not use bleach or dye on the belts because this can make the belts weak.

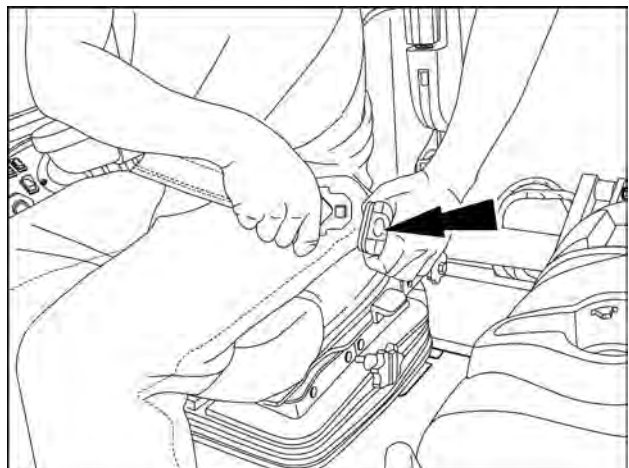
Fasten/release

1. Pull the right-hand belt strap from the retractor.
2. Insert the metal end into the latch mechanism of the left-hand side of the seat.



RAIL14UTL0054BA 1

3. To release, press the red button on the latch mechanism. The seat belt will automatically retract.



RAIL14UTL0054BA 2

Operator protective structure

Your machine is equipped with an operator protective structure, such as: a Roll Over Protective Structure (ROPS), Falling Objects Protective Structure (FOPS), or a cab with a ROPS. A ROPS may be a can frame or a two-posted or four-posted structure used for the protection of the operator to minimize the possibility of serious injury. The mounting structure and fasteners forming the mounting connection with the machine are part of the ROPS.

The protective structure is a special safety component of your machine.

DO NOT attach any device to the protective structure for pulling purposes. DO NOT drill holes to the protective structure.

The protective structure and interconnecting components are a certified system. Any damage, fire, corrosion, or modification will weaken the structure and reduce your protection. If this occurs, THE PROTECTIVE STRUCTURE MUST BE REPLACED so that it will provide the same protection as a new protective structure. Contact your dealer for protective structure inspection and replacement.

After an accident, fire, tip over, or roll over, the following MUST be performed by a qualified technician before returning the machine to field or job-site operations:

- The protective structure MUST BE REPLACED.
- The mounting or suspension for the protective structure, operator's seat and suspension, seat belts and mounting components, and wiring within the operator's protective system MUST be carefully inspected for damage.
- All damaged parts MUST BE REPLACED.

DO NOT WELD, DRILL HOLES, ATTEMPT TO STRAIGHTEN, OR REPAIR THE PROTECTIVE STRUCTURE. MODIFICATION IN ANY WAY CAN REDUCE THE STRUCTURAL INTEGRITY OF THE STRUCTURE, WHICH COULD CAUSE DEATH OR SERIOUS INJURY IN THE EVENT OF FIRE, TIP OVER, ROLL OVER, COLLISION, OR ACCIDENT.

Seat belts are part of your protective system and must be worn at all times. The operator must be held to the seat inside the frame in order for the protective system to work.

Backup alarm system

The audible backup alarm system notifies others in the area that the machine will be or is moving in reverse

Place the directional lever in the reverse travel position and an audible alarm will sound repeatedly until the operator moves the directional lever into the neutral position or the forward travel position.

Personal Protective Equipment (PPE)

Wear Personal Protective Equipment (PPE) such as hard hat, eye protection, heavy gloves, hearing protection, protective clothing, etc.

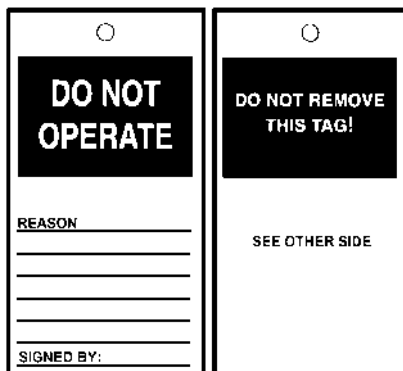
INTRODUCTION



DCAPLT5NE020S2A 3

⚠ Do Not Operate tag ⚠

Before you start servicing the machine, attach a 'Do Not Operate' warning tag to the machine in an area that will be visible.



RH99E029 4

⚠ Hazardous chemicals ⚠

If you are exposed to or come in contact with hazardous chemicals you can be seriously injured. The fluids, lubricants, paints, adhesives, coolant, etc. required for the function of your machine can be hazardous. They may be attractive and harmful to domestic animals as well as humans.

Material Safety Data Sheets (MSDS) provide information about the chemical substances within a product, safe handling and storage procedures, first aid measures, and procedures to take in the event of a spill or accidental release. MSDS are available from your dealer.

Before you service your machine check the MSDS for each lubricant, fluid, etc. used in this machine. This information indicates the associated risks and will help you service the machine safely. Follow the information in the MSDS, and on manufacturer containers, as well as the information in this manual, when you service the machine.

Dispose of all fluids, filters, and containers in an environmentally safe manner according to local laws and regulations. Check with local environmental and recycling centers or your dealer for correct disposal information.

Store fluids and filters in accordance with local laws and regulations. Use only appropriate containers for the storage of chemicals or petrochemical substances.

Keep out of reach of children or other unauthorized persons.

Applied chemicals require additional precautions. Obtain complete information from the manufacturer or distributor of the chemicals before you use them.

⚠ Utility safety ⚠

When digging or using ground-engaging equipment, be aware of buried cables and other services. Contact your local utilities or authorities, as appropriate, to determine the locations of services.

Make sure that the machine has sufficient clearance to pass in all directions. Pay special attention to overhead power lines and hanging obstacles. High voltage lines may require significant clearance for safety. Contact local authorities or utilities to obtain safe clearance distances from high voltage power lines.

Retract raised or extended components, if necessary. Remove or lower radio antennas or other accessories. Should a contact between the machine and an electric power source occur, the following precautions must be taken:

- Stop the machine movement immediately.

- Apply the parking brake, stop the engine, and remove the key.
- Check if you can safely leave the cab or your actual position without contact with electrical wires. If not, stay in your position and call for help. If you can leave your position without touching lines, jump clear of the machine to make sure that you do not make contact with the ground and the machine at the same time.
- Do not permit anyone to touch the machine until power has been shut off to the power lines.

Electrical storm safety

Do not operate machine during an electrical storm.

If you are on the ground during an electrical storm, stay away from machinery and equipment. Seek shelter in a permanent, protected structure.

If an electrical storm should strike during operation, remain in the cab. Do not leave the cab or operator's platform. Do not make contact with the ground or objects outside the machine.

Mounting and dismounting

Mount and dismount the machine only at designated locations that have handholds, steps, and/or or ladders.

Do not jump off of the machine.

Make sure that steps, ladders, and platforms remain clean and clear of debris and foreign substances. Injury may result from slippery surfaces.

Face the machine when you mount and dismount the machine.

Maintain a three-point contact with steps, ladders, and handholds.

Never mount or dismount from a moving machine.

Do not use the steering wheel or other controls or accessories as handholds when you enter or exit the cab or operator's platform.

Working at heights

When the normal use and maintenance of the machine requires you to work at heights:

- Correctly use installed steps, ladders, and railings.
- Never use ladders, steps, or railings while the machine is moving.
- Do not stand on surfaces that are not designated as steps or platforms.

Do not use the machine as a lift, ladder, or platform for working at heights.

Lifting and overhead loads

Never use loader buckets, forks, etc. or other lifting, handling, or digging equipment to lift persons.

Do not use raised equipment as a work platform.

Know the full area of movement of the machine and equipment and do not enter or permit anyone to enter the area of movement while the machine is in operation.

Never enter or permit anyone to enter the area underneath raised equipment. Equipment and/or loads can fall unexpectedly and crush persons underneath it.