



## **WARNING!**

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**Do not start, operate or service this machine unless you have read and understood these instructions and received proper training.**

**Unsafe or improper use of the machine may cause serious injury or death.**

**Operators and maintenance personnel must read this manual and receive training before operating or maintaining the machine.**

**This manual should be kept with the machine for reference and periodically reviewed by the machine operator and by all personnel who will come into contact with it.**

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The following warning is provided pursuant to California Health & Safety Code Sections 25247.5 et, seq,

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## **WARNING!**

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### **California Proposition 65**

**Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.**

**Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.**

**WASH HANDS AFTER HANDLING.**

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# Operating Instructions

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## Practical Training

The questions above and others like them can help you design an appropriate training course for your operators. But above all, be sure that your training incorporates a significant portion of practical experience.

## Recognition

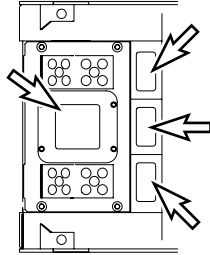
A key part of any training program is recognition.

Think of ways you can recognize the achievement of those who successfully complete this important training. Certificates, licenses, patches, authorization cards and the like set these individuals apart and help create a lasting attitude of commitment to the job.

## INFORMATION RESOURCES FOR OPERATION, MAINTENANCE, AND SAFETY

The following publications contain information, instructions, and standards for various operation, maintenance, and safety issues related to your *DOOSAN* equipment.

- General Industry Standards, OSHA 2206: “OSHA Safety and Health Standards (29 CFR 1910),” “Subpart N - Materials Handling and Storage”; 29 CFR 1910.178 powered industrial trucks; 1910.177 - “Servicing Multi-Piece and Single Rim Wheels.” Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
- National Fire Protection (NFPA) 505, “Powered Industrial Trucks, Type Designation, Areas of Use, Maintenance, and Operation.” Available from: Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
- ANSI/ASME B56.1-1988: “Safety Standard for Low Lift and High Lift Trucks” (Safety Code of Powered Industrial Trucks). Available from:

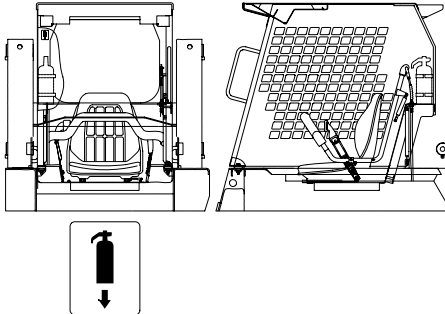


View "E-E"  
450 (Plus)

IA00A100

Figure 18

13. Extinguisher



IA00A76I

Figure 19

# GENERAL SAFETY AND HAZARD INFORMATION

## Unauthorized Modification



# WARNING!

### UNAUTHORIZED MODIFICATION

- Any modification made without authorization from *DOOSAN* can create hazards.
- Before making a modification, consult your *DOOSAN* dealer.
- Improper modification could result in injury or death.
- Improper use of safety features could result in serious bodily harm or death.

## Avoiding High-Voltage Cables

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### AVOID HIGH-VOLTAGE CABLES

- Serious injury or death can result from contact with or close proximity to electric lines.
  - Keep all parts of the machine or load far from all electric lines.
- 

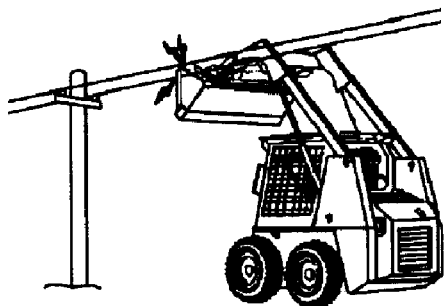


Figure 26

IA00A22S

## Operating on Snow

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### OPERATE CAREFULLY ON SNOW, ICE, OR WET SURFACES

- When working on snow or icy or wet roads, even a slight slope may cause the machine to slip to the side, so always travel at low speed and avoid sudden starting, stopping, or turning.
  - When there has been heavy snow, the road and objects placed beside the road are buried in the snow and cannot be seen, so always carry out snow-clearing operations carefully.
-



## WARNING!

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- Batteries generate hydrogen gas. Hydrogen gas is very **EXPLOSIVE**, and is easily ignited with a small spark or flame.
  - Before working with batteries, stop the engine and turn the starting switch to the **OFF** position.
  - Avoid short-circuiting the battery terminals through accidental contact with metallic objects, such as tools, across the terminals or between the hot (+) post and frame or other grounding surface.
  - Keep the battery terminals tightened securely. Loose terminals can generate sparks and lead to an explosion.
  - When repairing the electrical system or when carrying out electrical welding, remove the negative(-) terminal of the battery to stop the flow of current.
  - **NEVER** attempt to charge or jump start a frozen battery. An explosion may occur.
- 

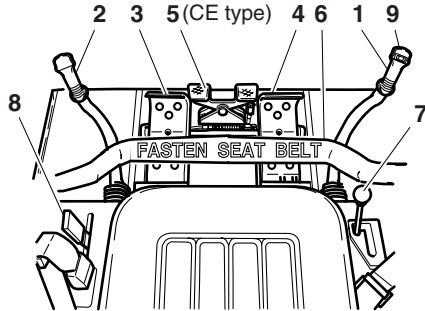


Figure 30

FG008038

# Contols and Instruments

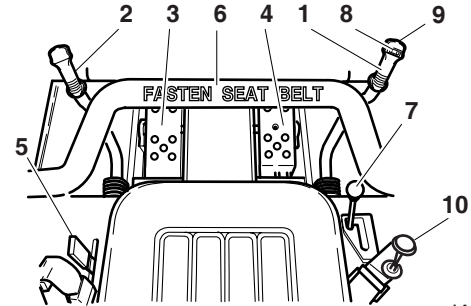
# CONTROLS



IA4O5001

Figure 17 430 (Plus)

Reference Number	Description
1	Drive Control Lever(RH)
2	Drive Control Lever(LH)
3	Boom Pedal
4	Bucket Pedal
5	Attachment Pedal
6	Seat Bar
7	Parking Brake (Released Position)
8	Throttle Lever
9	Horn Button(Optional)



IA0OC05I

Figure 18 450 (Plus)

Reference Number	Description
1	Drive Control Lever(RH)
2	Drive Control Lever(LH)
3	Boom Pedal
4	Bucket Pedal
5	Throttle Lever
6	Seat Bar
7	Parking Brake (Released Position)
8	Auxiliary Hydraulic Thumb Control
9	Horn Button
10	Pressure Relief

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## CAUTION!

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When using an attachment other than the standard bucket, follow the instructions for each separate attachment.

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## Auxiliary Hydraulic Thumb Control - 450 (Plus) Only Joystick

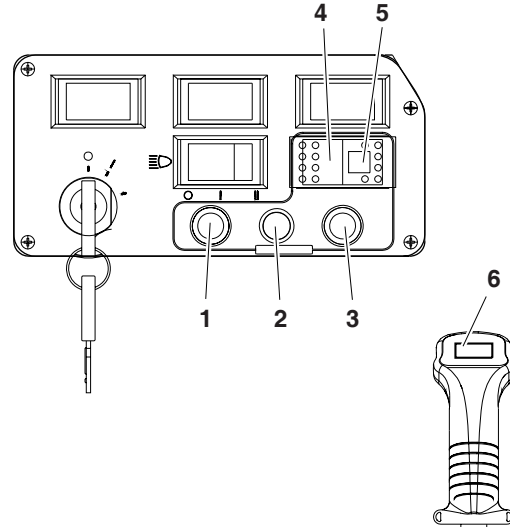


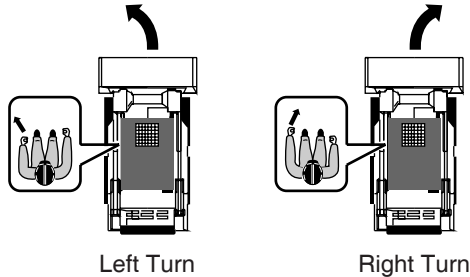
Figure 36

FG006148

5. Steering procedure is illustrated as follows:

- Gradual Turning

Push left drive handle diagonally forward.



FG006155

Figure 10



**CAUTION!**

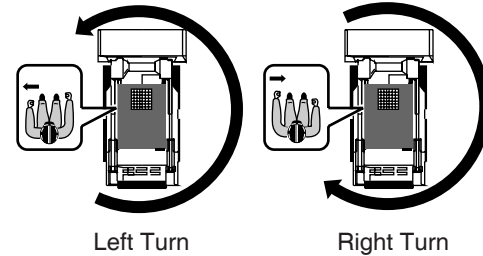
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When traveling or steering, always lower the boom to the carry position.

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- Sharp Turning

Push left drive handle left side or right side.



FG006156

Figure 11

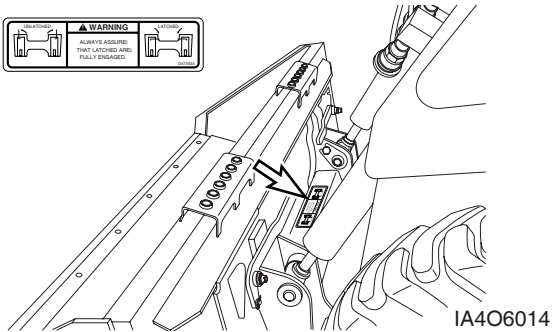


**CAUTION!**

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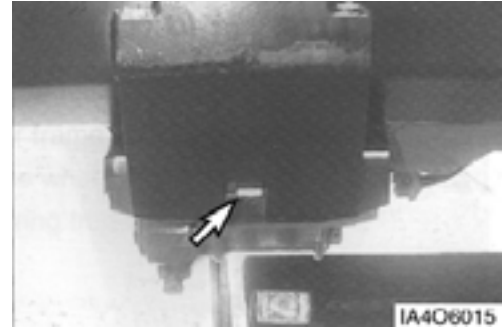
Be alert for tail swing.

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**Figure 26**

- D. Lock the bucket and Quick-tach by pushing down both handles. (Figure 26)



**Figure 27**

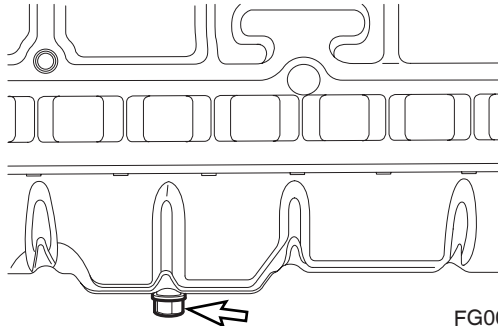
- E. Make sure that both wedges are inserted firmly through the holes on the bucket (or attachments). (Figure 27)

## After Starting-Before Operation

1. Start the engine and observe the initial exhaust color at start and at normal operating temperatures.

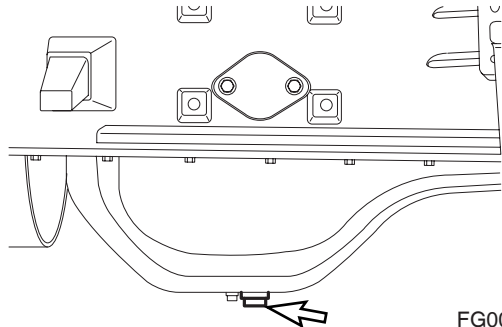
Excessively black, blue, or white exhaust is an indication of a problem. Listen for any abnormal sounds.

2. Check the operation of all exterior lights, instrument panel indicator lights and installed optional equipment.
3. Check the operation of all switches.
4. Check the operation of all controls.
  - A. Check loader for movement with controls in neutral. Should movement occur refer to service manual for proper adjustment procedure.
  - B. Check for proper operation of boom, bucket, and accessories (if attached).
  - C. Insure that the boom, bucket, attachment pedals are locked with the seat bar raised.



FG006158

**Figure 22 430 (Plus)**

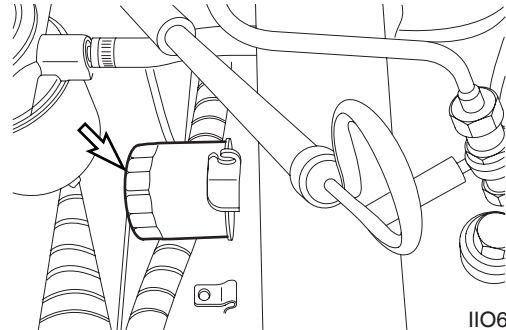


FG006159

**Figure 23 450 (Plus)**

## Remove/Replace Engine Oil Filter

Raise and secure operators cab. Filter is located on left side of engine block. Using a strap type or other style filter wrench, remove the engine oil filter. Before installing new filter, coat the rubber gasket on the filter with clean oil. Install filter **BY HAND** and tighten until gasket fully contacts the mounting surface. Once this tighten another 1/2 to 3/4 of a turn by hand only.



IIO6027P

**Figure 24 430 (Plus)**

# PRIMING THE FUEL SYSTEM

## Breeding the Fuel System

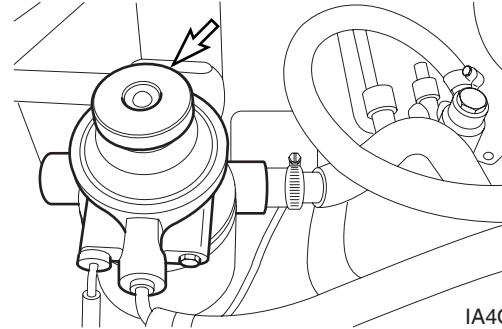
### 1. 430 (Plus)

If air enters the fuel system, it must be eliminated before the engine can be started.

Air can enter the system if:

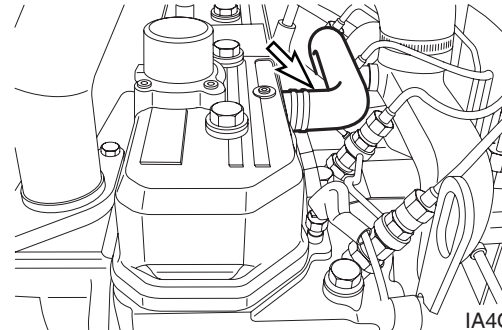
- The fuel tank is drained during normal operation.
- The low-pressure fuel pipes are disconnected.
- A part of the low-pressure fuel system leaks during engine operation.

In order to eliminate air from the fuel system, proceed as follows:



IA4O7026

**Figure 41**



IA4O7027

**Figure 42**

# TIRE MAINTENANCE

## General Information

Tires should be checked regularly for wear, damage, and proper inflation. When replacing tires, ensure that the size matches those already on the vehicle. Mismatched tire sizes can change vehicle performance and cause premature wear and damage to drive train components. If tires are replaced in pairs, they should be mounted on the same side of the vehicle to minimize stress on the drive train.



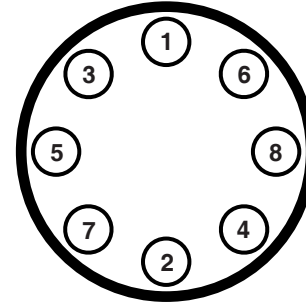
**DANGER!**

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**Tires should only be mounted/dismounted from rims or repaired by trained and authorized personnel using the proper equipment and procedures. Death or serious injury could result. See OSHA 1910.177.**

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## Inflation Pressures



**Figure 58**

430 (Plus)-45 psi (3.2 kg/cm<sup>2</sup>)

450 (Plus)-50 psi (3.5 kg/cm<sup>2</sup>)

IA00B03I

## Final Drive Components

Item	Unit	SPEC.			
		430	430 (Plus)	450	450 (Plus)
Chain	-	2 Chain with RS80HT&RS80HT	←	2 Chain with RS100HT&RS100HT	← ←
No. of Teeth					
• Drive Sprocket (Motor)	ea	11	←	10	←
• Drive Sprocket (Axle)	ea	32	←	28	←
Ratio		2.91	←	2.8	←
Tire					
• Type	-	Flotation Tubeless	←	Flotation Tubeless	←
• Size	-	10-16.5, 6PR	←	10-16.5, 6PR	←
• Pressure	psi(kg/cm <sup>2</sup> )	46 (3.25)	←	46 (3.25)	←
Wheel					
• Size	-	8.25 x 16.5	←	9.75 x 16.5	←
• Hole x Pitch Circle Diameter	-	8 x 8"	←	8 x 8"	←

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