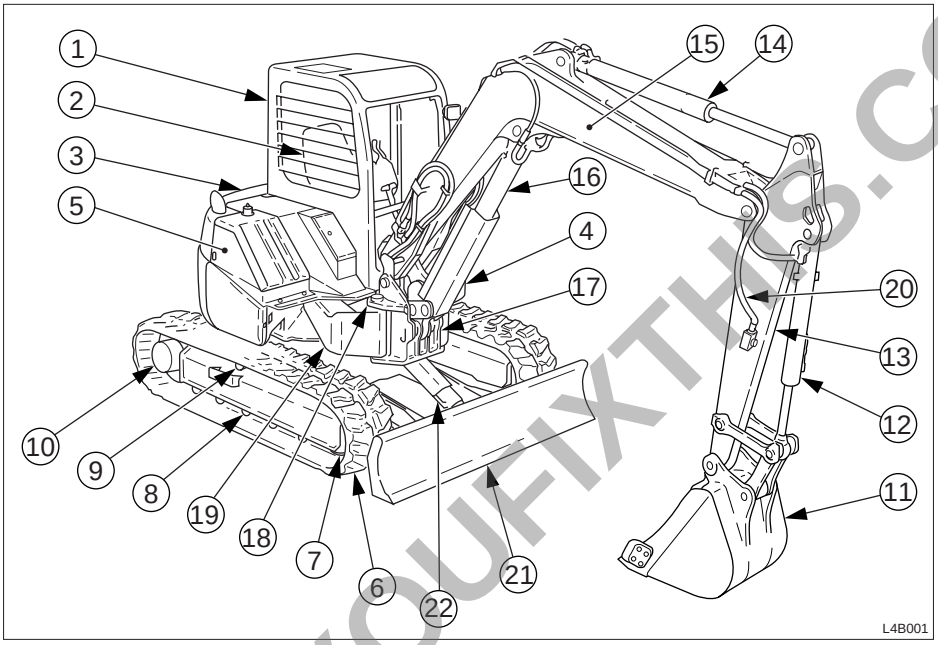
Names of Components



Upperstructure
1. Cab
2. Seat
3. Engine hood
4. Fuel tank
5. Hydraulic tank

Undercarriage
6. Crawler belt
7. Idler
8. Track roller
9. Carrier roller
10. Travel motor

Working equipment
11. Bucket
12. Bucket cylinder
13. Arm
14. Arm cylinder
15. Boom
16. Boom cylinder
17. Boom bracket
18. Offset cylinder
19. Right link arm
20. Auxiliary hydraulic lines
21. Dozer blade
22. Blade cylinder

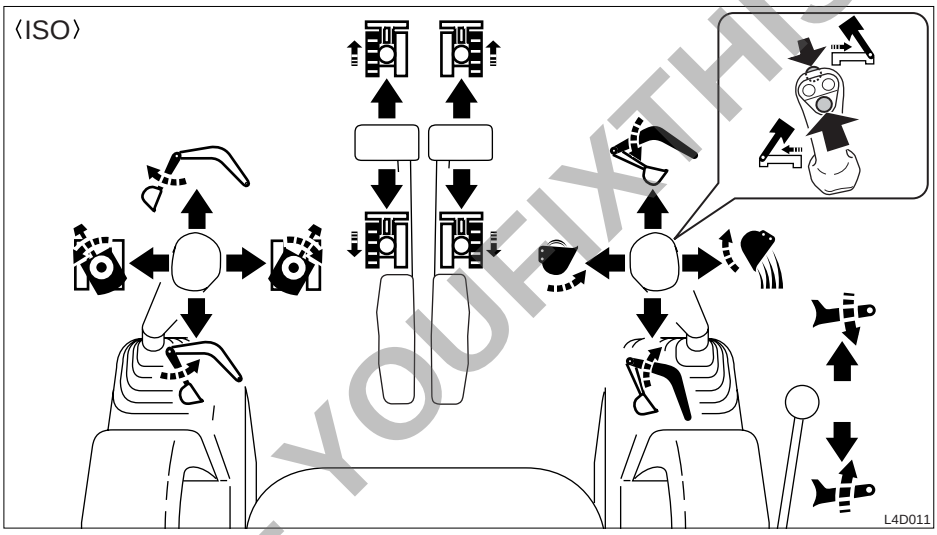
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Lever Pattern (ISO Pattern)

⚠ WARNING

- **Be careful to check which pattern of lever control arrangement you are operating with before beginning operations.**
- **The explanations in this manual are for the ISO pattern.**



	Left Crawler Forward		Right Crawler Forward
	Left Crawler Reverse		Right Crawler Reverse
	Arm Out		Boom Lower
	Arm In		Boom Raise
	Upperstructure Left Slew		Bucket Load
	Upperstructure Right Slew		Bucket Dump
	Boom Offset Left		Dozer Blade Lower
	Boom Offset Right		Dozer Blade Raise

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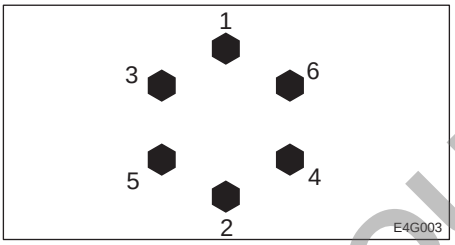
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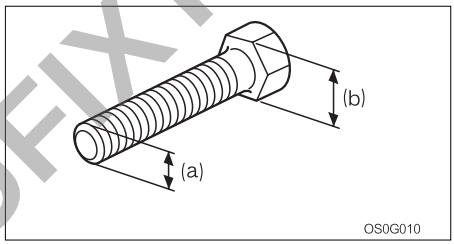
Tightening Torques

Nuts and Bolts (for ISO strength category 10.9)

Tighten nuts and bolts at the torques shown on the table below, unless otherwise specified in the text.

- Tightening torques when mounting plastic covers differ from the values on the table below. Consult a Takeuchi sales or service outlet. Tightening too strongly will break the cover.
- When replacing nuts and bolts, replace them with nuts and bolts of the same size and standards.
- Tighten nuts and bolts alternately (top, bottom, left then right) or in 2 or 3 times so that they are tightened uniformly.



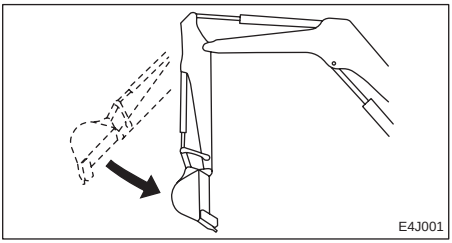


Thread	Head width (b)	Size (a) X Pitch	Torque	
			General Connection Points	
	mm	mm	N·m	ft-lb
Coarse	10	M6 X 1.0	9.8 ± 0.5	7.2 ± 0.4
	12, 13	M8 X 1.25	22.6 ± 1.1	16.6 ± 0.8
	14, 17	M10 X 1.5	47.1 ± 2.4	34.7 ± 1.7
	17, 19	M12 X 1.75	83.4 ± 4.1	61.5 ± 3.0
	19, 22	M14 X 2.0	134.4 ± 6.7	99.1 ± 4.9
	22, 24	M16 X 2.0	207.9 ± 10.4	153.3 ± 7.7
	27, 30	M20 X 2.5	410.9 ± 20.5	303.1 ± 15.1
Fine	12, 13	M8 X 1.0	24.5 ± 1.2	18.1 ± 0.9
	14, 17	M10 X 1.25	50 ± 2.5	36.9 ± 1.8
	17, 19	M12 X 1.5	87.3 ± 4.3	64.4 ± 3.2
	19, 22	M14 X 1.5	135.3 ± 6.8	99.8 ± 5.0
	22, 24	M16 X 1.5	220.6 ± 11	162.7 ± 8.1
	27, 30	M20 X 1.5	452.1 ± 22.6	333.4 ± 16.6

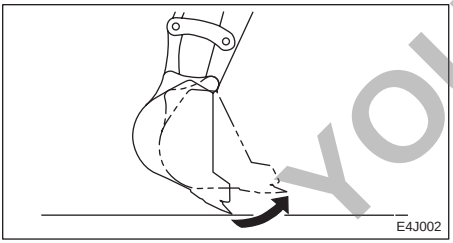
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The following symptoms are not malfunctions:



- When the arm reaches the vertical position while contracting it while the engine is running at low speed, the contracting speed slows down momentarily.



- When the bucket teeth reach the horizontal position while the engine is running at low speed, the speed of bucket movement slows down momentarily.
- The slew motor produces noise at the beginning and end of the slewing operation.
- The travel motor produces noise when stopped suddenly during high speed travel.
- The control valve produces noise if excessive force is applied to the working equipment and when the stroke end is reached.

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Main Specifications

TYPE			Standard Arm	Long Arm
MASS				
Machine mass kg (lb.) (not including operator)	Rubber crawlers		8005 (17645)	8505 (18750)
	Steel crawlers		8130 (17930)	8630 (19025)
PERFORMANCE				
Bucket capacity m^3 (cu.ft.) (standard bucket)	Heaped		0.245 (8.65)	
	Struck		0.165 (5.83)	
Slew speed min^{-1} (rpm)			10.4 (10.4)	
Travel speed km/h (mph)	Rubber crawlers	1st	2.8 (1.74)	
		2nd	5.2 (3.23)	
	Steel crawlers	1st	2.7 (1.68)	
		2nd	5.0 (3.11)	
Gradeability (degrees)			30	
Ground pressure kPa (psi)	Rubber crawlers		35.6 (5.16)	40.7 (5.90)
	Steel crawlers		36.1 (5.23)	41.2 (5.97)
Noise level dB(A)	Sound-power level		L_{WA} 100	
	Sound-pressure level		L_{pA} 78	
ENGINE				
Manufacturer and model			Yanmar 4TNE98-TBA	
Rated output kW / min^{-1} (hp / rpm)			41.2 / 1900 (55.2 / 1900)	
Displacement ml (cu.in.)			3319 (202.5)	
Starter V – kW			12 – 3.0	
Alternator V – kW			12 – 0.48	
Battery V – A·h			12 – 64	

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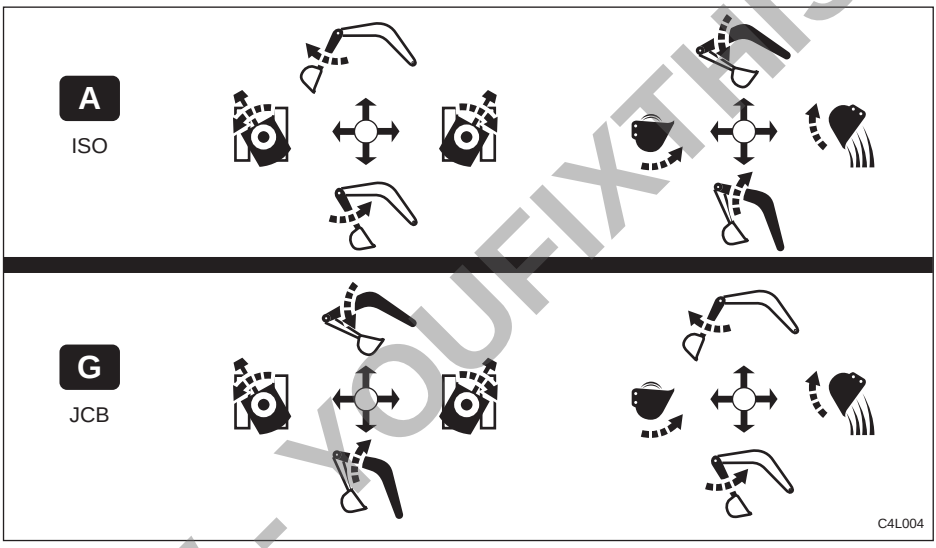
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Switching the Lever Pattern

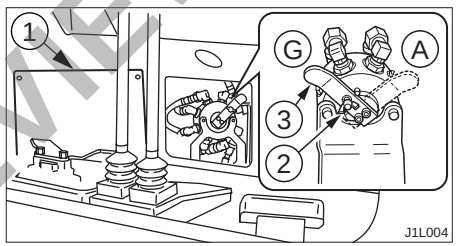
The operating pattern of the left and right operating levers can be changed.

⚠ WARNING

Before starting the engine, check the selector to see which operating pattern the left and right operating levers are set for.



Switching the Lever Pattern



(A) : ISO pattern
(G) : JCB pattern

1. Park the machine in a safe place and turn off the engine.
2. Fully open the cab door and fix it in place.
3. Lift up the floor mat.
4. Open the cover (1).
5. Loosen the wing bolt (2).
6. Turn the selector valve lever (3) and switch the pattern.
7. Tighten the wing bolt (2) and fasten the lever (3) in place.
8. Close the cover (1) and set the floor mat back in place.
9. Check the lever pattern.

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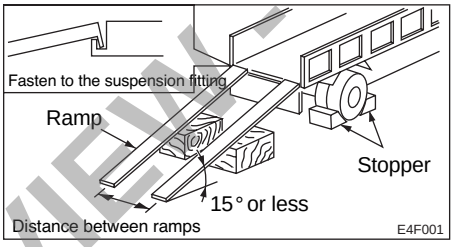
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⚠ WARNING

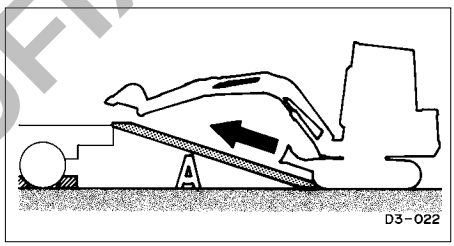
The machine may roll or tip over or fall while loading or unloading it. Take the following precautions:

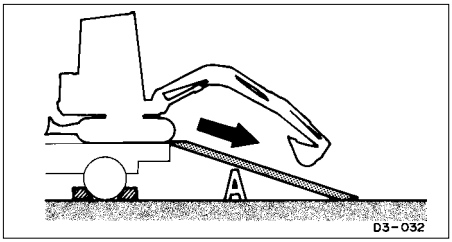
- **Select a firm, level surface and keep sufficient distance from road shoulders.**
- **Use loading ramps of adequate strength and size. Maintain the slope of loading ramps within 15 degrees.**
- **Keep the truck bed and loading ramps clean of oil, clay, ice, snow, and other materials which can become slippery. Clean the tracks.**
- **Never change course on the ramp.**
- **Do not slew (swing) on ramps. The machine may tip over.**
- **When slewing (swinging) on the truck bed, do so slowly as the footing can be unstable.**

When loading or unloading the machine, be sure to use ramps and following the procedure below.



1. Apply the truck's parking brake and place stoppers against its tires.
2. Fasten the ramps securely to the truck bed so that they will not come off. Set the ramps to an angle of 15° or less.
3. Line up the center of the truck bed with the center of the machine and the center of the ramps with the center of the crawlers.
4. Make sure the dozer blade does not hit the ramps.
5. Lower the hoe attachment as much as possible, making sure it will not hit the truck.
6. Lower the engine speed.



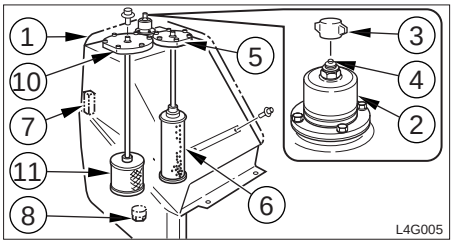


7. Determine the direction on the ramps, then slowly travel up or down the ramps in 1st speed (low speed), following the signals of a flagman.
8. Load the machine properly at the prescribed position on the bed.
   Refer to page 91 "Transporting Posture".

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Replenishing



1. Loosen the bolts and remove the cover (1).
2. Remove cap nut (3) on the air breather (2).
3. Press button (4) and bleed the air from the tank.
4. Tighten securely by hand with cap nut (3).
5. Loosen the bolts, and remove the air breather (2).
6. Add hydraulic oil up to the middle of the sight gauge (7).
7. Tighten the air breather (2).
8. Tighten the cover (1).

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Observe all safety rules

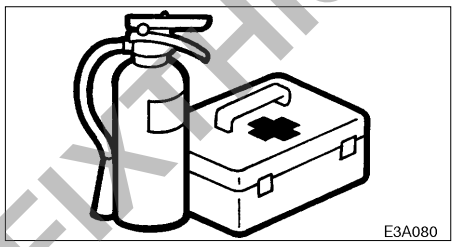
- Operation, inspection and maintenance of this machine must be performed only by a trained and qualified person.
- All rules, regulations, precautions and safety procedures must be understood and followed when performing operation, inspection and maintenance of this machine.
- Do not perform any operation, inspection and maintenance of this machine when under the adverse influence of alcohol, drugs, medication, fatigue, or insufficient sleep.

Wear appropriate clothing and personal protective equipment



- Do not wear loose clothing or any accessory that can catch on controls or in moving parts.
- Do not wear oily or fuel stained clothing that can catch fire.
- Wear a hard hat, safety shoes, safety glasses, filter mask, heavy gloves, ear protection and other protective equipment as required by job conditions. Wear required appropriate equipment such as safety glasses and filter mask when using grinders, hammers or compressed air, as metal fragments or other objects can fly and cause serious injury.
- Use hearing protection when operating the machine. Loud prolonged noise can cause hearing impairments, even the total loss of hearing.

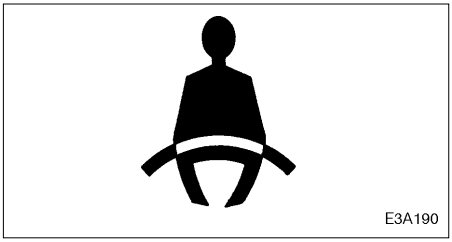
Provide a fire extinguisher and first aid kit



- Know where a fire extinguisher and first aid kit are located and understand how to use them.
- Know how to contact emergency assistance and first aid help.

Never remove safety equipment

- Make sure all protective guards, canopies, doors, etc., are in place and secure. Repair or replace damaged components before operating the machine.



- Know how to use the safety lock lever, seat belt and other safety equipment and use them properly.
- Never remove any safety equipment except for service. Keep all safety equipment in good operating condition.

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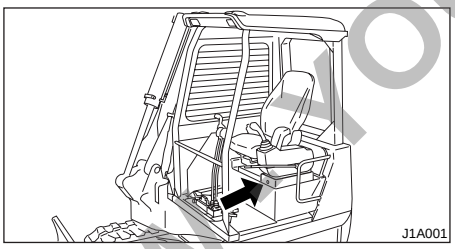
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Foreword

This manual describes operation, inspection and maintenance of the machine, as well as safety instructions to be heeded during these operations.
If you have any questions about the machine, please contact a Takeuchi sales or service outlet.

■ Manual storage

A compartment for storing this manual is provided at the position shown on the diagram below.

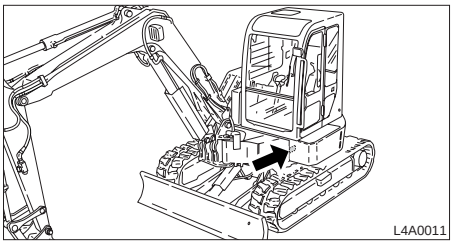


1. Insert the starter key and turn it counterclockwise to unlock the manual storage.
2. After using the manual, place it in the plastic pouch and store it back in the manual storage.

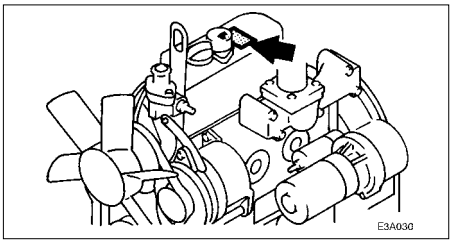
■ Serial numbers

Check the serial numbers of the machine and the engine and write them in the spaces provided below.

Machine number :



Engine number :



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