Inspect Machine Daily Before Starting

The operator must perform the daily inspection before operating the machine.
Refer to MAINTENANCE chapter for more information.

Inspection Items	Inspection Criteria
1. Brake system	1. Acceptable brake pedal stroke, good brake application, and brakes apply evenly.
	2. The parking brake applies sufficiently.
	3. Check the brake oil level. Check brake tubing for leaks.
2. Tire	1. Check tire pressure.
	2. Check tires for cracks or damage.
	3. Check for excessive wear.
	4. Check for objects, such as stones or metal stuck in tire tread.
3. Lighting system and turn signals	The lights operate normally. Lights clean and not damaged.
4. Rearview mirror	Rearview is normal.
5. Machine identification plate	Clean, legible and not damaged.
6. A device that was previously inoperable.	The device works normally.
7. Engine	1. Correct engine oil and coolant levels. Clean.
	2. Check the alternator drive belt for damage and tension.
	3. Starting ability, exhaust gas color, and noise are within allowable range.
	4. Check the engine for oil and coolant leaks, check hoses and pipe lines for damage.
	5. Check the radiator and oil cooler for clogging and damage.
	6. Check bolts and nuts for loosening and dropping.

(continued)

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Correct Maintenance and Inspection Procedures

Learn how to service your machine correctly. Follow the correct maintenance and inspection procedures shown in this manual. Refer to page 3-1 for walk around inspection list.



SA-005

Inspect machine daily before starting.

- Check controls and instruments.
- Check coolant, fuel and oil levels.
- Check for leaks, kinked, frayed or damaged hoses and lines.
- Walk around machine checking general appearance, noise, heat, etc.
- Check for loose or missing parts.

If there is any problem with your machine, repair it before operating or contact your authorized dealer.

IMPORTANT:

- **Use only recommended fuel and lubricants.**
- **Be sure to use only genuine Kawasaki parts. Failure to do so may result in serious injury or death and/or machine breakdown.**
- **Failure to use recommended fuel, lubricants, and genuine Kawasaki parts will result in loss of Kawasaki product warranty.**
- **Never adjust engine governor or hydraulic system relief valve.**
- **Protect electrical parts from water and steam.**
- **Never disassemble electrical components such as main controller, sensors, etc.**

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Troubleshooting

If any machine trouble has occurred, immediately repair it. Make certain the cause of the trouble and take necessary measures to prevent the reoccurrence of the same trouble. In case troubleshooting is difficult, or measures marked with * must be taken, consult the nearest Kawasaki dealer. Never attempt to adjust, disassemble, or repair the hydraulic and/or electrical/electronic parts/components.

Engine

Consult the nearest Kawasaki dealer for the engine troubleshooting.

Engine Auxiliaries

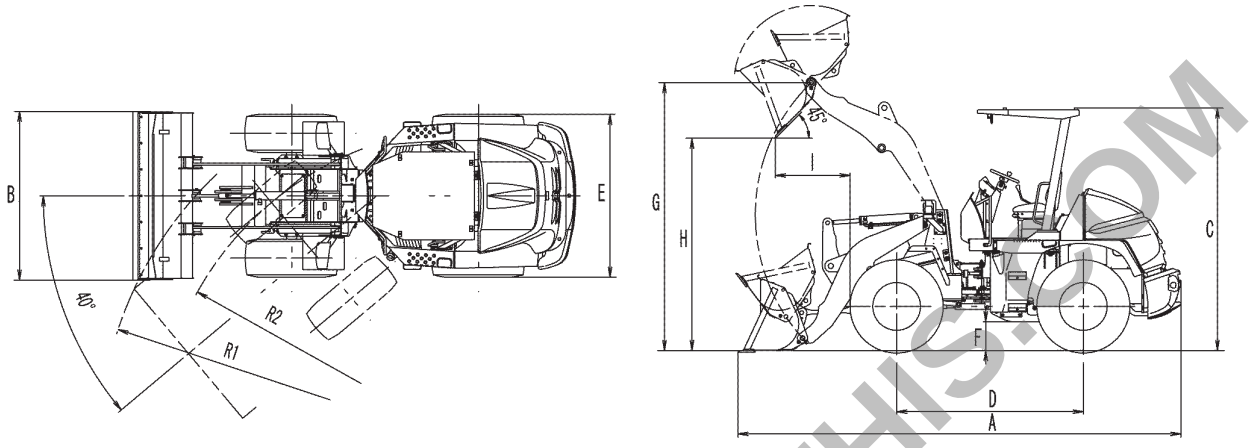
Problem	Cause	Solution
Batteries will not charge.	Broken battery separator	Replace
	Faulty regulator	* Adjust or replace
	Faulty ground line	* Repair
	Faulty alternator	* Repair or replace
Batteries discharge quickly after being charged.	Shorted cable	* Repair or replace
	Shorted battery separator	* Replace
	Increased sediment in battery	* Replace
Coolant temperature is too high.	Low coolant level	Add
	Loose engine fan V-belt	* Adjust
	Damaged rubber hose	* Replace
	Faulty thermostat	* Replace
	Faulty coolant temperature gauge	* Replace
	Cooling system passages dirty	Flush cooling system
	Radiator core or oil cooler core plugged	Clean radiator and oil cooler
	Radiator screen plugged	Clean screen

Items with * mark: Consult your nearest Kawasaki dealer.

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Specifications



M4FGE-12-001

Model		—	45ZV-2	
Bucket Type			Pin Type	Coupler Type
Bucket Capacity (heaped)		m^3 (yd^3)	0.9 (1.17)	
Operating Weight (Canopy/Cab)		kg (lb)	5245/5405 (11570/11920)	5380/5540 (11860/12220)
Static Tipping Load	Straight	kgf (lbf)	4260 (9390)	3695 (8150)
	Full 40 degree turn	kgf (lbf)	3620 (7980)	3120 (6880)
Engine		—	Kubota V3307-DI-T 45.6 kW/2200 rpm (62 PS/2200 rpm) (61 HP/2200 rpm)	
A: Overall Length		mm (ft·in)	5220 (17′ 2″)	5380 (17′ 8″)
B: Overall Width (Bucket)		mm (ft·in)	2860 (6′ 3″)	
C: Overall Height (Canopy/Cab)		mm (ft·in)	2790/2850 (9′ 2″/9′ 4″)	
D: Wheel Base		mm (ft·in)	2200 (7′ 3″)	
E: Tread		mm (ft·in)	1470 (4′ 10″)	
F: Ground Clearance		mm (ft·in)	340 (1′ 1″)	
G: Bucket Hinge Height		mm (ft·in)	3160 (10′ 4″)	
H: Dumping Clearance (45 °)		mm (ft·in)	2500 (8′ 2″)	2390 (7′ 10″)
I: Dumping Reach (45 °)		mm (ft·in)	880 (2′ 11″)	990 (3′ 3″)
R1: Minimum Rotation Radius Outer Ring Center		mm (ft·in)	3795 (12′ 5″)	
R2: Minimum Rotation Radius End of Bucket		mm (ft·in)	4475 (14′ 8″)	4540 (14′ 11″)
Travel Speed Forward/Reverse		km/h (mph)	34/34 (21/21)	
Transmission Speeds (F/R)		—	2/2	
Articulation Angle (Left/Right) deg		(°)	40	
Tire Size		—	17.5/65-20-10PR	

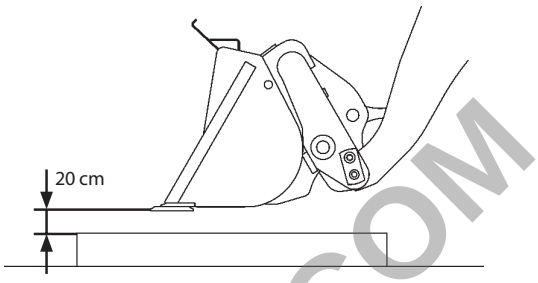
NOTE: The specifications can change at any time.

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Operating Quick Coupler (Mechanical Type)

WARNING: During work, keep personnel away from the machine.

The quick coupler is a system with which a front attachment work tool such as a bucket can be easily replaced with other work tool.
When installing an additionally purchased bucket or your own bucket with the quick coupler, the bucket may not be fit on due to misaligned stopper. Contact your nearest Kawasaki dealer for adjustment.

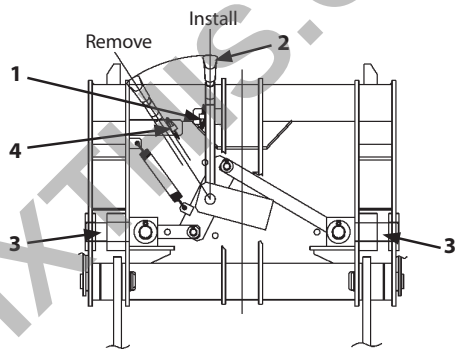


M4EK-13-001

Removal

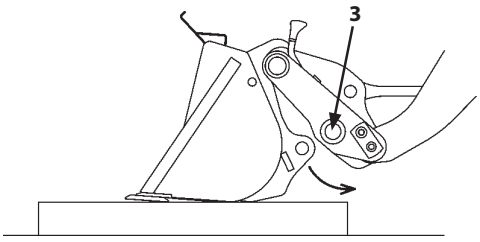
WARNING: Apply the parking brake before leaving the machine.

Disconnect all hydraulic hoses routed to the attachment cylinders except for the bucket and lift arm cylinders. (Refer to page 13-6 for "Disconnection/Connection Hydraulic Hoses".)
If possible, place the bucket (attachment) to be removed on a pallet.



M4EK-13-002

1. Raise the bucket (attachment) level, about 20 cm (8 in) above the pallet.
2. Remove quick coupler lock pin (1). Pull up lever (2) to the removal position and remove coupler pins (3) (right and left).
3. Check that coupler pins (3) (right and left) are removed. Install lock pin (1) in hole (4) to fix lock lever (2) in position.
4. Place the bucket (attachment) as close to the rear of the pallet as possible so that the quick coupler can be easily removed.
5. While tilting the bucket forward, slightly lower the arm. The bucket (attachment) is able to be removed from the quick coupler. Take your time and proceed with care.



M4EK-13-003

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Recognize Safety Information

- These are the **SAFETY ALERT SYMBOLS**.
  - When you see these symbols on your machine or in this manual, be alert to the potential for personal injury.
  - Follow recommended precautions and safe operating practices.



SA-688

Understand Signal Words

- On machine safety signs, signal words designating the degree or level of hazard - DANGER, WARNING, or CAUTION - are used with the safety alert symbol.
  - **DANGER** indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
  - **WARNING** indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
  - **CAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
  - **DANGER or WARNING safety signs** signs are located near specific hazards. General precautions are listed on **CAUTION safety signs**.
  - Some safety signs do not use any of the designated signal words above after the safety alert symbol has been used on this machine.
- To avoid confusing machine protection with personal safety messages, a signal word **IMPORTANT** indicates a situation which, if not avoided, could result in damage to the machine.
- ***NOTE*** indicates an additional explanation for an element of information.

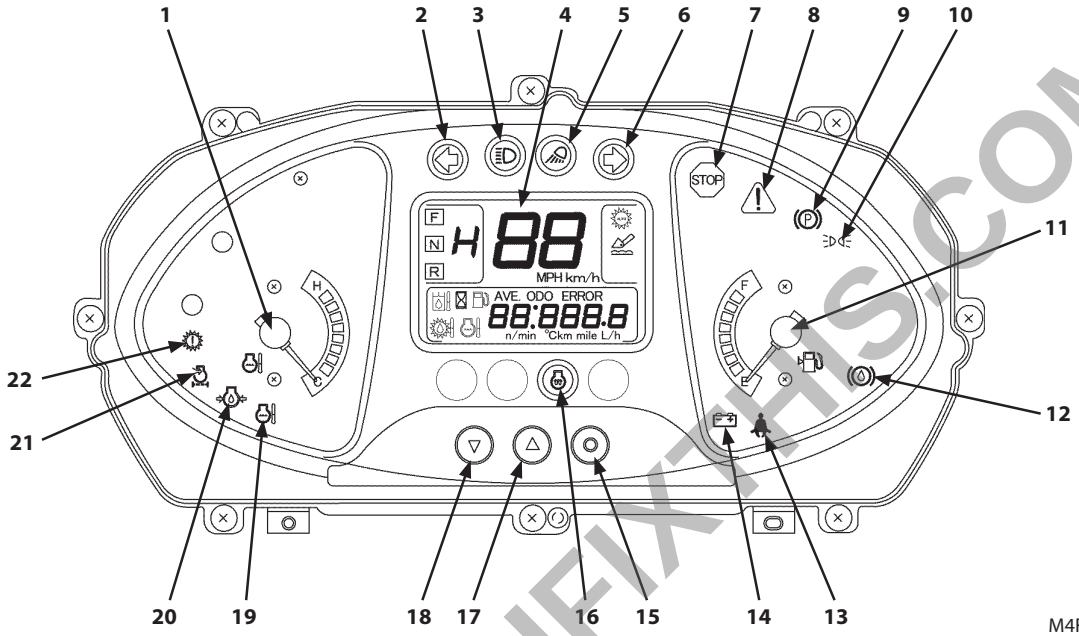


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Monitor Panel



M4FG-01-010

1- Engine Coolant Temperature Gauge
2- Left Turn Signal Indicator
3- High Beam Indicator
4- Monitor Display
5- Work Light Indicator (Optional)
6- Right Turn Signal Indicator
7- Stop Indicator
8- Service Indicator
9- Parking Brake Indicator
10- Clearance Light Indicator
11- Fuel Gauge
12- Brake Oil Low Level Indicator
13- Not Used
14- Discharge Warning Indicator
15- HST Error Code Readout Switch
16- Preheat Indicator
17- Monitor Display Selector
18- Not Used
19- Overheat Indicator
20- Engine Oil Low Pressure Indicator
21- Air Filter Restriction Indicator
22- HST Warning Indicator

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Starting Engine

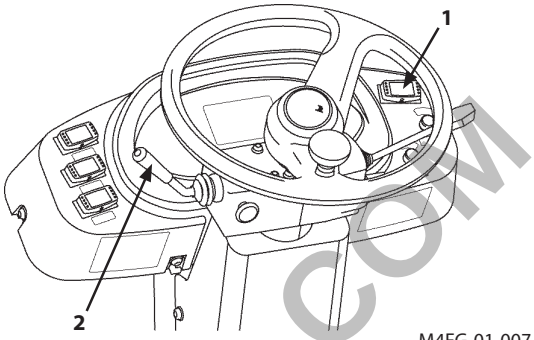
Start the engine following the procedures below.

1. Check that parking brake switch (1) is in the ON position.
2. Check that F-N-R lever (2) is in neutral (N) position.
3. Check indicator bulbs

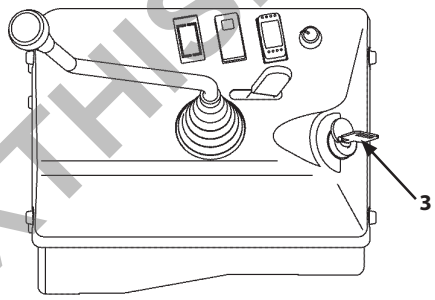
   When key switch (3) is turned ON, all indicators and the warning lights come and stay ON for 2 seconds. Then, they go OFF afterward. Any indicator and/or warning light that fails to light at this time is a burned bulb. After checking indicator bulbs, check that the six square segment marks displayed on the LCD will be sequentially erased one at a time. Charge warning indicator (4) will stay ON until the engine starts.
4. Check that parking brake indicator (5) is ON and preheat indicator (6) turns OFF (Engine preheating is completed). And then, sound the horn to clear any personnel away from the area surrounding the machine.

IMPORTANT: Never operate the starter for more than 10 seconds at a time. If the engine fails to start, return the key switch to OFF. Wait for more than 30 seconds, then try again. Prevent starter damage and/or battery discharge.

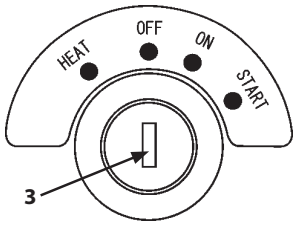
5. Turn key switch (3) to START position to rotate the starter. The engine should start and run.
6. As soon as the engine starts, release the key switch. The key switch will automatically return to the ON position.



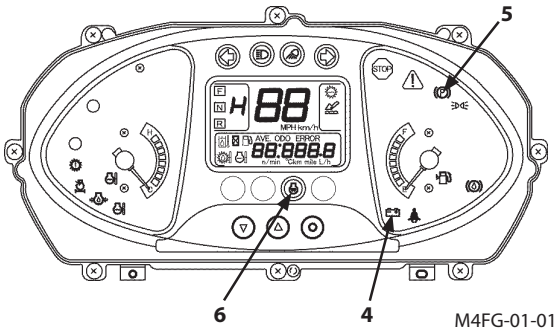
M4FG-01-007



M4FG-01-015



M4EJ-01-025



M4FG-01-011

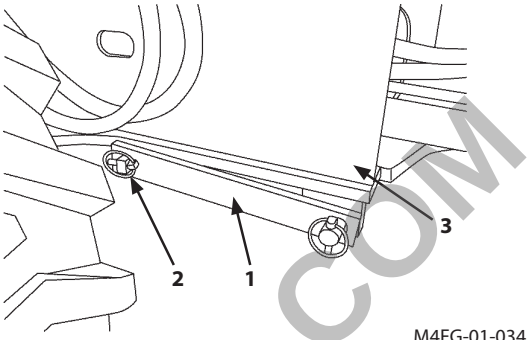
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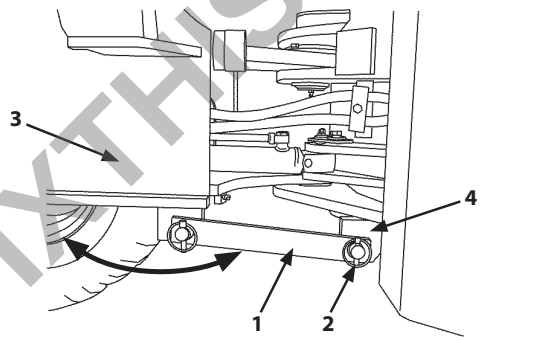
Lock Frames

WARNING: Before beginning to work near the axle of frames (3), (4), install articulation lock bar (1) to securely lock and prohibit movement between the front and rear frames (3) and (4). Avoid accidents due to unexpected movement of the machine.

1. Align the front and rear frames (3) and (4) centers with each other.
2. Remove lock pin (2) and remove articulation lock bar (1) from the front side pin hole on front frame (3).
3. Install one end of articulation lock bar (1) to the mounting pin of rear frame (4). Secure articulation lock bar (1) in position with lock pin (2).



M4FG-01-034



M4FG-01-035

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5 **Check Electrolyte Level**

--- every 100 hours or 1 month

Check the electrolyte level at least once a month.

1. Park the machine on level ground and stop the engine.
2. Check the electrolyte solution level.

2.1 When checking the level from the battery side:

Clean around the level check lines with a wet towel. Do not use a dry towel. Static electricity may cause the battery gas to explode.

Check if the electrolyte solution level is between U.L (Upper Level) and L.L (Low level). In case the electrolyte solution level is lower than the middle level between the U.L and L.L, immediately refill with distilled water or commercial battery fluid.

After refilling, securely tighten the filler plug.

Be sure to refill with distilled water before recharging (operating the machine).

2.2 When impossible to check the level from the battery side or no level check mark is indicated on the side:

After removing the filler plug from the top of the battery, check the electrolyte level by viewing through the filler port. It is difficult to judge the accurate electrolyte solution level in this case. Therefore, when the electrolyte solution level is flush with the U.L, the level is correct. Referring to the illustrations to the right, check the level. When the electrolyte solution level is lower than the bottom end of the sleeve, refill with distilled water or commercial battery fluid up to the bottom end of the sleeve.

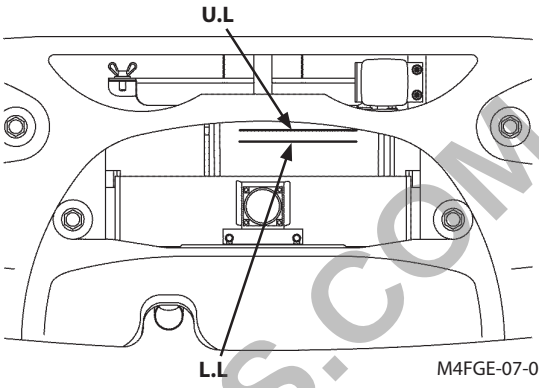
After refilling, securely tighten the filler plug.

Be sure to refill with distilled water before recharging (operating the machine).

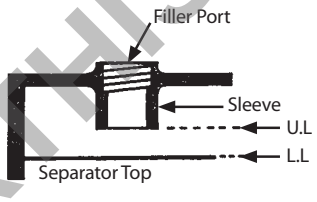
2.3 When an indicator is available to check the level, use this indicator to determine the fluid level.

3. Always keep the area around the battery terminals clean to prevent battery from discharging. Check terminals for looseness and/or corrosion.

Check terminals for looseness and/or corrosion. Coat the terminals with grease or petroleum jelly to prevent corrosion build up.



M4FGE-07-067



M4GB-07-093

Proper



Since the electrolyte solution surface touches the bottom end of the sleeve, the electrolyte surface is raised due to surface tension so that the electrode ends are shown curved.

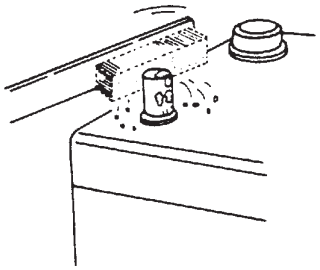
M4GB-07-094

Lower



When the electrolyte solution surface is below the bottom end of the sleeve, the electrode ends are shown straight.

M4GB-07-095



M4GB-07-096

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