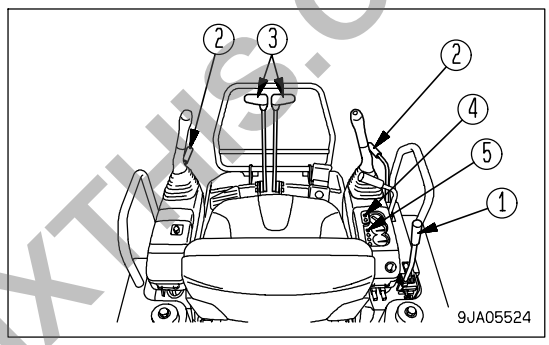
MACHINE OPERATION

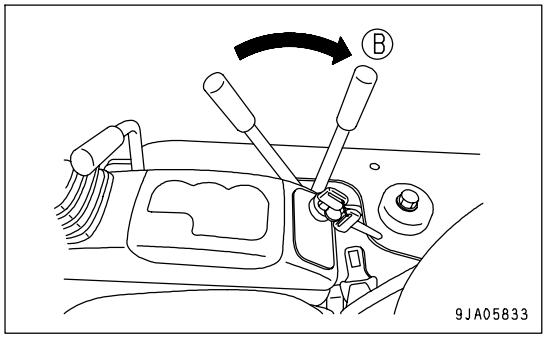
WARNING

- **Before operating the travel levers, check the direction of the track frame. If the sprocket is at the front, the operation of the travel levers is reversed.**
- **When moving off, check that the area around the machine is safe, and sound the horn before moving.**
- **Clear all personnal from the machine and the area.**
- **Clear all obstracles from the path of the machine.**
- **Check that the travel alarm works properly.**



Preparations for Moving the Machine

1. Pull fuel control lever (1) towards the high idle position to increase the engine speed.
   (B): High idling



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MAINTENANCE SCHEDULE

If the machine is equipped with a hydraulic breaker, the maintenance schedule for some parts will be different. For details, see "MAINTENANCE INTERVAL FOR HYDRAULIC BREAKER (PAGE 4-17)" to confirm the correct maintenance schedule when carrying out maintenance.

MAINTENANCE SCHEDULE CHART

WHEN REQUIRED
CHECK, CLEAN AND REPLACE AIR CLEANER ELEMENT ---- 4- 18
CLEAN INSIDE OF COOLING SYSTEM ---- 4- 24
CHECK LEVEL OF BATTERY ELECTROLYTE ---- 4- 27
CLEAN WATER SEPARATOR ELEMENT ---- 4- 29
DRAIN WATER AND SEDIMENT FROM FUEL TANK ---- 4- 29
CHECK AND TIGHTEN TRACK SHOE BOLTS (Machine equipped with road liner, steel shoe) ---- 4- 30
CHECK AND ADJUST TRACK TENSION (Machine equipped with road liner, steel shoe) ---- 4- 31
CHECK, RUBBER SHOES OR ROAD LINERS (Machine equipped with rubber shoes, road liner) ---- 4- 33
CHECK AND ADJUST RUBBER SHOE TENSION (Machine equipped with rubber shoes) ---- 4- 35
REPLACE RUBBER SHOES (Machine equipped with rubber shoes) ---- 4- 37
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CHECK WINDOW WASHER FLUID LEVEL, ADD FLUID ---- 4- 43
CHECK, CLEAN AND LUBRICATE CAB SLIDE DOOR RAIL AND ROLLER ---- 4- 44
LUBRICATING ---- 4- 44
BLEEDING AIR FROM HYDRAULIC SYSTEM ---- 4- 45

CHECKS BEFORE STARTING

EVERY 500 HOURS MAINTENANCE
LUBRICATING ---- 4- 48
CHANGE OIL IN ENGINE OIL PAN, REPLACE ENGINE OIL FILTER CARTRIDGE ---- 4- 51
REPLACE FUEL FILTER CARTRIDGE ---- 4- 52
CHECK OIL LEVEL IN FINAL DRIVE CASE, ADD OIL ---- 4- 54
CLEAN AND INSPECT RADIATOR FINS AND OIL COOLER FINS ---- 4- 55
CLEAN NET (IF EQUIPPED) ---- 4- 55
CHECK AND ADJUST COOLING FAN BELT TENSION ---- 4- 56
CHECK SWING PINION GREASE LEVEL, ADD GREASE ---- 4- 57

EVERY 1000 HOURS MAINTENANCE
REPLACE HYDRAULIC OIL FILTER ELEMENT ---- 4- 58
CHANGE OIL IN FINAL DRIVE CASE ---- 4- 59
CHECK ENGINE VALVE CLEARANCE, ADJUST ---- 4- 59

EVERY 2000 HOURS MAINTENANCE
CHANGE OIL IN HYDRAULIC TANK, CLEAN STRAINER ---- 4- 60
CHECK ALTERNATOR, STARTING MOTOR ---- 4- 62

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SPECIFICATIONS

	Item	Unit	PC40MR-2	PC50MR-2

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ATTACHMENTS AND OPTIONS - GENERAL INFORMATION

SAFETY FIRST

If attachments or options other than those authorized by Komatsu are installed, this will not only affect the life of the machine, but will also cause problems with safety.

When installing attachments not listed in this Operation and Maintenance Manual, contact your Komatsu distributor first.

If you do not contact Komatsu, we cannot accept any responsibility for any accidents or failures.

⚠ WARNING

General precautions

- **Read the instruction manual for the attachment thoroughly, and do not use this attachment unless you are sure that you have understood the guides completely.**
  If you lose the instruction manual, always ask the manufacturer or your Komatsu distributor for a new copy.
- **Depending on the attachment, install the necessary front guard on the machine.**
- **Depending on the attachment, the impact noise may make it difficult for fellow workers to transmit instructions for the operation. Before starting operation, decide a leader and determine the signals to be used.**
- **Do not carry out swinging operations to the side with a heavy load on the attachment. This is particularly dangerous on slopes.**
- **Comparing with a machine equipped with a bucket, a machine equipped with a breaker has a heavy load at the front of the work equipment and is unstable. To avoid a hazard of tipping over, do not carry out operations with the attachment swung to the side.**
- **When an attachment is installed, the swing range and center of gravity of the machine are different, and the machine may move in an unexpected way. Be sure that you understand the condition of the machine properly.**
- **Before starting operations, set up a fence around the machine to prevent people from entering.**
  Never operate the machine when there are people near the machine.
- **To prevent serious accidents caused by misoperation, do not put your foot on the pedal except when operating the pedal.**

Precautions for removal and installation operations

When removing or installing the attachments, obey the following precautions and take care to ensure safety during the operation.

- **Carry out the removal and installation operation on a flat, firm ground surface.**
- **When the operation is carried out by two or more workers, determine the signals and follow these during the operation.**
- **When carrying heavy objects (more than 25 kg or 55 lb), use a crane.**
- **When removing heavy parts, always support the part before removing it.**
  When lifting such as heavy parts with a crane, always pay careful attention to the position of the center of gravity.
- **It is dangerous to carry out operations with the load kept suspended. Always set the load on a stand, and check that it is safe.**
- **When removing or installing attachments, make sure that it is in a stable condition and will not fall over.**
- **Never go under a load suspended from a crane.**
  Always stand in a position that is safe even if the load should fall.

NOTICE

Qualifications are required to operate a crane. Never allow the crane to be operated by an unqualified person.

For details of removal and installation operations, contact your Komatsu distributor.

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WEAR PARTS

Replace wear parts such as the filter element or air cleaner element at the time of periodic maintenance or before they reach the wear limit. The wear parts should be replaced correctly in order to ensure more economic use of the machine. When replacing parts, always use Komatsu genuine parts.
As a result of our continuous efforts to improve product quality, the part number may change, so inform your Komatsu distributor of the machine serial number and check for the latest part number when ordering parts.

WEAR PARTS LIST

The parts in parentheses are to be replaced at the same time.

Item		Part No.	Part name	Q'ty	Replacement frequentcy
Engine oil filter		YM129150-35152	Cartridge	1	EVERY 500 HOURS
Fuel filter		YM119802-55800	Cartridge	1	EVERY 500 HOURS
Hydraulic filter		21W-60-41121	Element	1	EVERY 1000 HOURS
Water separator		YM119802-55710	Element	1	-
Air cleaner	Single type	YM129619-12520	Element	1	-
	Double type	YM129619-12520 YM129051-12530	Element (outer) Element (inner)	1 1	-
Standard backet (vertical pin)		20T-70-72320 (20T-70-71950) (20T-70-71960)	Tooth (Pin) (Lock)	4 (4) (4)	-
		20U-70-13241 20U-70-13251 (20U-70-28130) (203-32-51220)	Cuttet (left) Cutter (right) (Bolt) (Nut)	1 1 (8) (8)	-

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SAFETY INFORMATION

To enable you to use this machine safely, safety precautions and labels are given in this manual and affixed to the machine to give explanations of situations involving potential hazards and of the methods of avoiding such situations.

Signal words

The following signal words are used to inform you that there is a potential hazardous situation that may lead to personal injury or damage.
In this manual and on machine labels, the following signal words are used to express the potential level of hazard.

⚠ 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. This word is used also to alert against unsafe practices that may cause property damage.

Example of safety message using signal word

⚠ WARNING

When standing up from the operator's seat, always place the lock lever in the LOCK position.
If you accidentally touch the control levers when they are not locked, this may cause a serious injury or death.

Other signal words

In addition to the above, the following signal words are used to indicate precautions that should be followed to protect the machine or to give information that is useful to know.

NOTICE This word is used for precautions that must be taken to avoid actions which could shorten the life of the machine.

REMARKS This word is used for information that is useful to know.

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EMISSION CONTROL WARRANTY

EMISSION CONTROL WARRANTY STATEMENT (APPLIES TO CANADA ONLY)

1. **Products Warranted**

Komatsu America International Company, Komatsu Mining Systems Inc. and Komatsu Utility Corporation (collectively "Komatsu") produce and/or market products under brand names of Komatsu, Dresser, Dressta, Haulpak and Galion. This emissions warranty applies to new engines bearing the Komatsu name installed in these products and used in Canada in machines designed for industrial off-highway use. This warranty applies only to these engines produced on or after January 1, 2000. This warranty will be administered by Komatsu distribution in Canada.

2. **Coverage**

Komatsu warrants to the ultimate purchaser and each subsequent purchaser that the engine is designed, built and equipped so as to conform, at the time of sale by Komatsu, with all U.S. Federal emission regulations applicable at the time of manufacture and that it is free from defects in workmanship or material which would cause it not to meet these regulations within five years or 3,000 hours of operation, whichever occurs first, as measured from the date of delivery of the engine to the ultimate purchaser.

3. **Limitations**

Failures, other than those resulting from defects in materials or workmanship, are not covered by this warranty. Komatsu is not responsible for failures or damage resulting from what Komatsu determines to be abuse or neglect, including, but not limited to: operation without adequate coolant or lubricants; over fueling; over speeding; lack of maintenance of lubricating, cooling or intake systems; improper storage, starting, warm-up, run-in or shutdown practices; unauthorized modifications of the engine. Komatsu is also not responsible for failures caused by incorrect fuel or by water, dirt or other contaminants in the fuel. Komatsu is not responsible for non-engine repairs, "downtime" expense, related damage, fines, all business costs or other losses resulting from a warrantable failure.

KOMATSU IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This warranty, together with the express commercial warranties, are the sole warranties of Komatsu. **THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICUALR PURPOSE.**

GARANTIE SUR LE CONTRÔLE DES ÉMISSIONS

ÉNONCÉ DE GARANTIE SUR LE CONTRÔLE DES ÉMISSIONS (APPLICABLE AU CANADA SEULEMENT):

1. **Produits garantis**:

Komatsu America International Company, Komatsu Mining Systems Inc. et Komatsu Utility Corporation (collectivement Komatsu) produisent et/ou font la mise en marché de produits portant les noms de marque Komatsu, Dresser, Dressta, Haulpak et Galion. Cette garantie sur les émissions s'applique à tous les nouveaux moteurs portant le nom Komatsu, installés dans ces produits et utilisés au Canada dans des machines conçues pour utilisation industrielle non-routière. Cette garantie s'applique seulement sur les moteurs produits à partir du 1er Janvier 2000. Cette garantie sera administrée par la distribution de Komatsu au Canada.

2. **Couverture:**

Komatsu garantit à l'acheteur ultime et chaque acheteur subséquent que le moteur est conçu, construit et équipé en toute conformité, au moment de la vente par Komatsu, avec toutes les Réglementations fédérales américaines sur les émissions applicables au moment de la fabrication et qu'il est exempt de défauts de construction ou de matériaux qui auraient pour effet de contrevenir à ces réglementations en dedans de 5 ans ou 3000 heures d'opération, mesuré à partir de la date de livraison du moteur au client ultime.

3. **Limitations:**

Les bris, autres que ceux résultant de défauts de matériaux ou de construction, ne sont pas couverts par cette Garantie. Komatsu n'est pas responsable pour bris ou dommages résultant de ce que Komatsu détermine comme étant de l'abus ou négligence, incluant mais ne se limitant pas à: l'opération sans lubrifiants ou agent refroidissants adéquats; la suralimentation d'essence; la survitesse; le manque d'entretien des systèmes de lubrification, de refroidissement ou d'entrée; de pratiques non-propices d'entreposage, de mise en marche, de réchauffement, de conditionnement ou d'arrêt; les modifications non-autorisées du moteur. De plus, Komatsu n'est pas responsable de bris causés par de l'essence inadéquate ou de l'eau, des saletés ou autres contaminants dans l'essence. Komatsu n'est pas responsable des réparations non-reliées au moteur, des dépenses encourues suite aux temps d'arrêts, des dommages relatifs, amendes, et de tout autre coût d'affaires ou autres pertes résultant d'un bris couvert par la garantie.

KOMATSU N'EST PAS RESPONSABLE DES INCIDENTS OU DOMMAGES CONSÉQUENTS.

Cette garantie, ainsi que les garanties expresses commerciales, sont les seules garanties de Komatsu. **IL N'Y A AUCUNE AUTRE GARANTIE, EXPRESSE OU SOUS-ENTENDUE, MARCHANDABLE OU PROPICE A UNE UTILISATION PARTICULIÈRE.**

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OPERATION

⚠ WARNING

Please read and make sure that you understand the SAFETY section before reading this section.

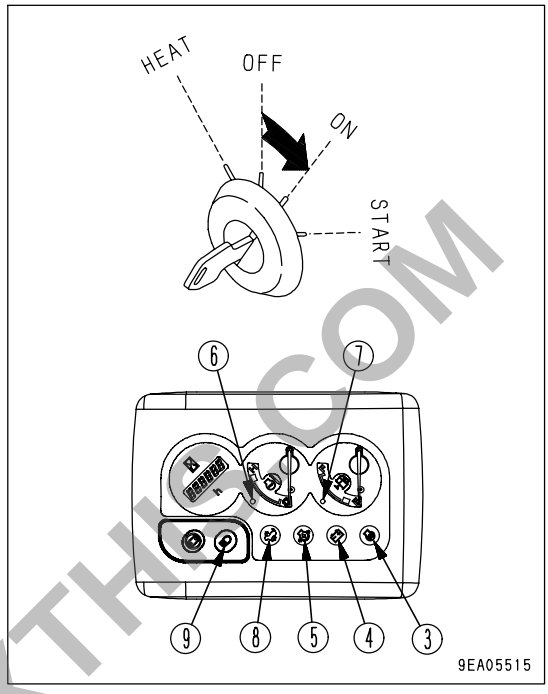
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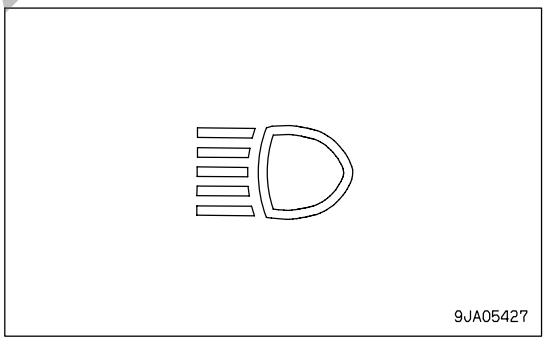
3. Insert the key in starting switch (2), turn the key to the ON position, then carry out the following checks.
   1) The buzzer sounds for approx. 1 second, then the monitors and gauges light up for approx. 3 seconds.
      - Engine pre-heating monitor (3)
      - Charge level monitor (4)
      - Engine oil pressure monitor (5)
      - Engine coolant temperature caution lamp (6)
      - Fuel level caution lamp (7)
      - Travel speed boost monitor (8)

      If a monitor or gauge does not light up or the buzzer does not sound, there is probably a blown fuse or disconnection in the monitor, so contact your Komatsu distributor for repairs.

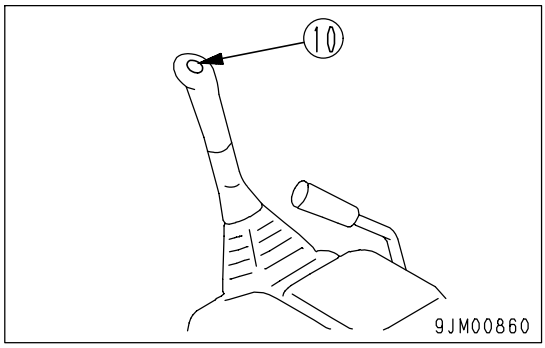
      After approx. 3 seconds, only the following monitors stay lighted up. The other monitors go out.
      - Charge level monitor (4)
      - Engine oil pressure monitor (5)



   2) Press lamp switch (9) and check that the working lamp lights up. If it does not light up, there is probably a blown bulb or disconnection, so contact your Komatsu distributor for repairs.



   3) Press horn switch (10) to confirm that the horn will sound.



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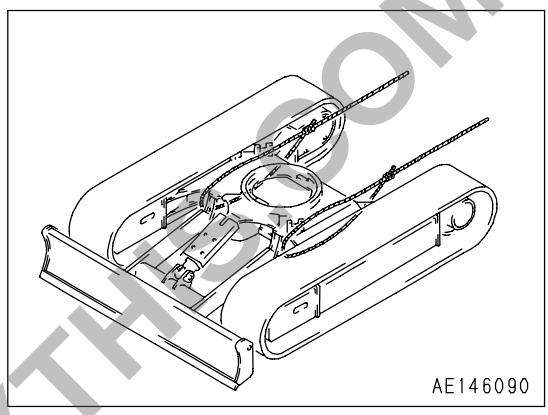
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TOWING THE MACHINE

WARNING

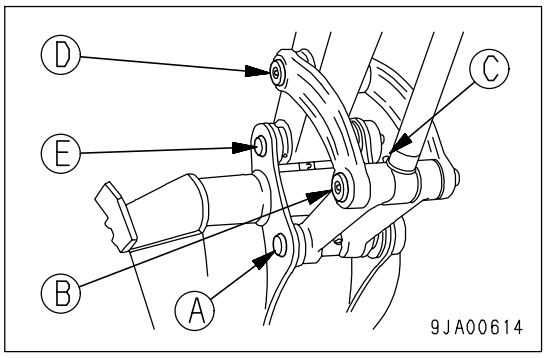
- **When towing the machine, use a wire rope that has ample strength for the weight of the machine that is being towed.**
- **Do not apply a sudden load to the wire rope.**

When the machine is stuck in soft ground and cannot escape under its own power, or when towing a heavy machine, pass the wire rope through the front of the track frame as shown in the diagram on the right before carrying out towing.
Places pieces of wood between the wire ropes and the body to prevent the wire ropes from damaging the body.



SEVERE JOB CONDITION

- When digging in water, if the water gets on to the work equipment mounting pins, add grease to bucket links (A), (B), (C), (D) and (E) for each operation.
- When carrying out heavy duty digging and deep digging operations, add grease to bucket links (A), (B), (C), (D) and (E) (total: 5 places) before each operation.
  After greasing, operate the bucket several times, then add grease again.



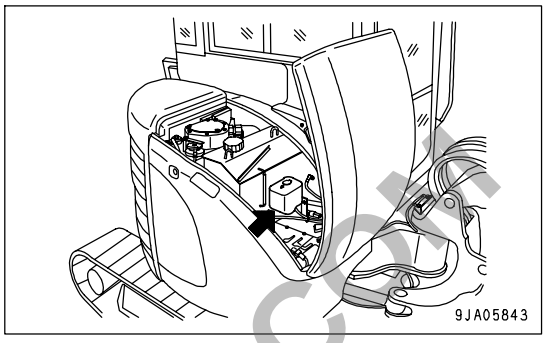
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CHECK WINDOW WASHER FLUID LEVEL, ADD FLUID

(Machine equipped with cab)

If there is air in the window washer fluid, check the level of the fluid in window washer tank. Add automobile window washer fluid if necessary.



REMARK

Open the engine rear cover and cooling cover. For details, see "COOLING COVER (PAGE 3-29)".

When adding fluid, be careful not to let any dust get in.

Mixture Ratio of Pure Washer Fluid and Water

The proportion differs according to the ambient temperature, so dilute the washer fluid with water to the following proportions before adding.

Area, season	Proportions	Freezing temperature
Normal	Washer fluid 1/3: water 2/3	-10°C (14°F)
Winter in cold area	Washer fluid 1/2 : water 1/2	-20°C (-4°F)
Winter in extremely cold area	Pure washer fluid	-30°C (-22°F)

There are two types depending on the freezing temperature:
-10°C (14°F) (general use) and -30°C (-22°F) (cold area use), so select according to the area and season.

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