SEAM010001

Operation & Maintenance Manual

D75S-5

CRAWLER LOADER

SERIAL NUMBERS D75S-5 - 16591 and up

JUNE 2001

6. GENERAL PRECAUTIONS

⚠ WARNING: For reasons of safety, always follow these safety precautions.

SAFETY RULES

- Only trained and authorized personnel can operate and maintain the machine.
- Follow all safety rules, precautions and instructions when operating or performing maintenance on the machine.
- Do not operate the machine if you are not feeling well, or if you are taking medicine which will make you sleepy, or if you have been drinking. Operating in such a condition will adversely affect your judgement and may lead to an accident.
- When working with another operator or with a person on worksite traffic duty, be sure that all personnel understand all hand signals that are to be used.
- Always follow all rules related to safety.

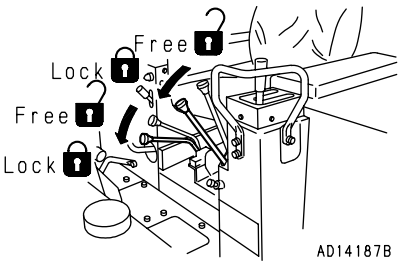
SAFETY FEATURES

- Be sure that all guards and covers are in their proper position. Have guards and covers repaired if damaged.

  Proper position of all guards and covers → See "12.1.1 WALK-AROUND CHECK".
- Use safety features such as safety lock levers and the seat belt properly.
- Never remove any safety features. Always keep them in good operating condition.

  Safety lock lever → See "12.12 PARKING MACHINE".

  Seat belt → See "12.1.4 USING SEAT BELT".
- Improper use of safety features could result in serious bodily injury or death.



CLOTHING AND PERSONAL PROTECTIVE ITEMS

- Avoid loose clothing, jewelry, and loose long hair. They can catch on controls or in moving parts and cause serious injury or death.
- Also, do not wear oily clothes, because they are flammable.
- Wear a hard hat, safety glasses, safety shoes, mask or gloves when operating or maintaining the machine. Always wear safety goggles, hard hat and heavy gloves if your job involves scattering metal chips or minute materials particularly when driving pins with a hammer and when cleaning the air cleaner element with compressed air. Check also that there is no one near the machine.
- Check that all protective equipment functions properly before using.

  Cleaning element → See "24.2 WHEN REQUIRED".

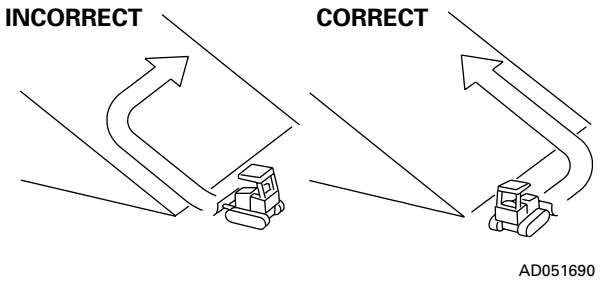
UNAUTHORIZED MODIFICATION

Any modification made without authorization from Komatsu can create hazards. Before making a modification, consult your Komatsu distributor. Komatsu will not be responsible for any injury or damage caused by any unauthorized modification.

TRAVELING ON SLOPES

- Traveling on slopes could result in the machine tipping over or slipping to the side.
- When traveling on slopes, keep the blade approximately 20 to 30 cm above the ground. In case of emergency, quickly lower the blade to the ground to help the machine to stop.
- Do not turn on slopes or travel across slopes. Always go down to a flat place to perform these operations.
- Do not travel on grass, fallen leaves, or wet steel plates. Even slight slopes may cause the machine to slip to the side, so travel at low speed and make sure that the machine is always traveling directly up or down the slope.
- When traveling downhill, use the braking force of the engine and travel slowly.
- Be careful when allowing the machine to travel downhill under its own weight. It may steer in the opposite direction.

Reverse steering when traveling downhill →
See "12.7.2 TURNING WHILE DESCENDING A SLOPE".



SECURING ENOUGH VISIBILITY

- When working in a dark place, turn on the head lamp and rear lamp of the machine, and use additional lighting equipment, if necessary.
- If visibility is lowered by fog, snow, rain, etc., stop working and wait until sufficient visibility for the work is restored.

OPERATE CAREFULLY ON SNOW

- When working on snow or icy 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. There is danger of slipping particularly on uphill or downhill slopes.
- With frozen road surfaces, the ground becomes soft when the temperature rises, so the travel conditions become unstable. In such cases be extremely careful when traveling.
- When there has been heavy snow, the road shoulder and objects placed beside the road are buried in the snow and cannot be seen, so always carry out operations carefully.
  When traveling on snow-covered slopes, never apply the brakes suddenly. Reduce the speed and use the engine as a brake while applying the foot brake intermittently (depress the brake intermittently several times). If necessary, lower the blade to the ground to stop the machine.
- The load varies greatly according to the characteristics of the snow, so adjust the load accordingly and be careful not to let the machine slip.

USE OF LIGHTING

- When checking fuel, oil, or battery electrolyte, always use lighting with anti-explosion specifications.
  If such lighting equipment is not used, there is danger of explosion.
- If work is carried out in dark places without installing lighting, there is danger of injury, so always install proper lighting.
- Even if it is dark, do not use a lighter or flame instead of lighting. There is danger of starting a fire, and if the battery gas ignites, it may cause an explosion.
- When using the machine as the power supply for the lighting, follow the instructions in this Operation and Maintenance Manual.

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PREVENTION OF FIRE

There is danger of the fuel and battery gas catching fire during maintenance, so always follow the precautions below when carrying out maintenance.

- Store fuel, oil, grease, and other flammable materials away from flame.
- Use non-flammable materials as the flushing oil for cleaning parts. Do not use diesel oil or gasoline. There is danger that they will catch fire.
- Never smoke when carrying out inspection or maintenance. Always smoke in the prescribed place.
- When checking fuel, oil, or battery electrolyte, always use lighting with anti-explosion specifications. Never use lighters or matches as lighting.
- When carrying out grinding or welding operations on the chassis, remove any flammable materials to a safe place.
- Be sure that a fire extinguisher is present at the inspection and maintenance point.

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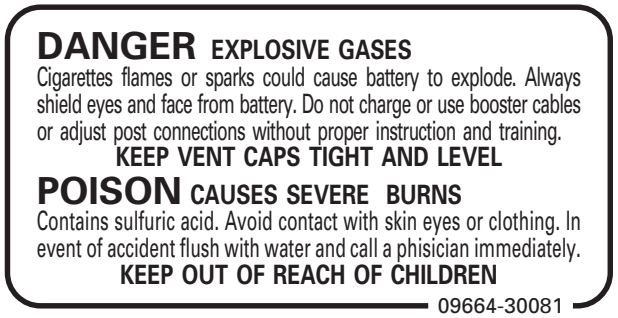
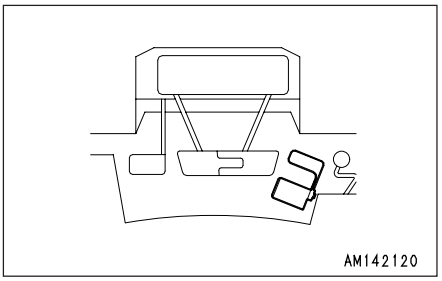
9. POSITION FOR ATTACHING SAFETY LABELS

13. Warning for battery (09664-30081)
Safety label is attached on the battery.



Safety label is attached on the battery.

6. DECELERATION PEDAL



⚠ WARNING

When the machine climbs to the top of a slope or it dumps soil from a cliff, the load reduces and the travel speed rises suddenly, and that is dangerous. To prevent this, press the decelerator pedal to lower the travel speed.

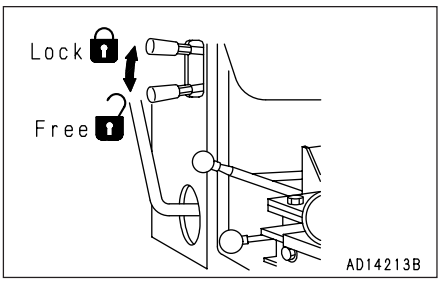
This pedal is used to lower the engine speed from the level set with the fuel control lever to the low idling level.

If this pedal is pressed, the engine speed lowers.

7. SAFETY LOCK LEVER (For bucket control lever)

⚠ WARNING

- **When leaving the operator's compartment, set the safety lock lever securely to the LOCK position. If the control lever is not locked, and it is touched by mistake, this may lead to a serious accident.**
- **If the safety lock lever is not placed securely in the LOCK position, the control lever may not be properly locked.**
- **When parking or servicing the machine, be sure to lower the bucket and set the safety lock in the LOCK position.**



This is the locking device of bucket control lever.

LOCK position: Raising, lowering, dumping, and tilting operations are locked.

FREE position: Raising, lowering, dumping, and tilting operations can be performed.

CHECK OIL LEVEL IN TRANSMISSION CASE (INCLUDING TORQUE CONVERTER CASE), ADD OIL

1. Open the cover, remove dipstick Ⓖ, and wipe the oil off with a cloth.

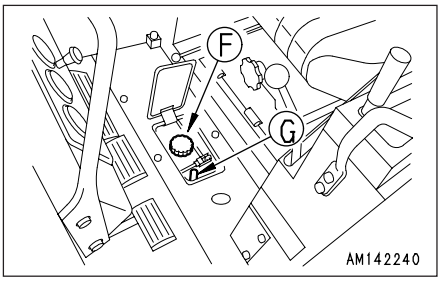
2. Insert dipstick Ⓖ fully in the oil filler pipe, then take it out again.

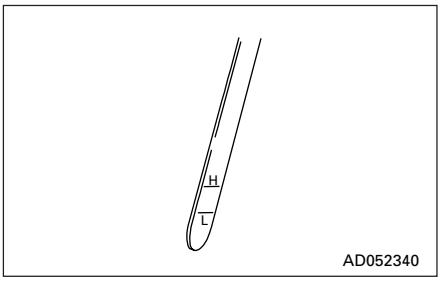
3. The oil level should be between the H and L marks on dipstick Ⓖ.
   If the oil level is below the L mark, add engine oil through oil filler Ⓕ.

   For details of the oil to use, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE".

4. If the oil is above the H mark, drain the excess engine oil from drain plug Ⓟ, and check the oil level again.

5. If the oil level is correct, tighten the oil filler cap securely and close the cover.

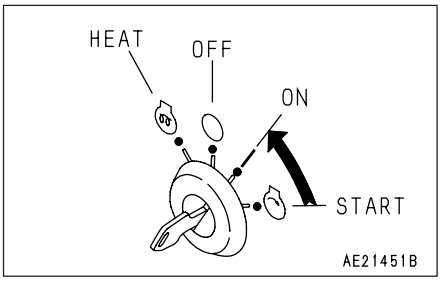




REMARK

- When stopping the engine, check the oil level.
- When checking the oil level after the engine has been operated, wait for at least 15 minutes after stopping the engine before checking.
  If the machine is at an angle, make it horizontal before checking.

1. When the engine starts, release the key in starting switch ②. The key will return automatically to the ON position.

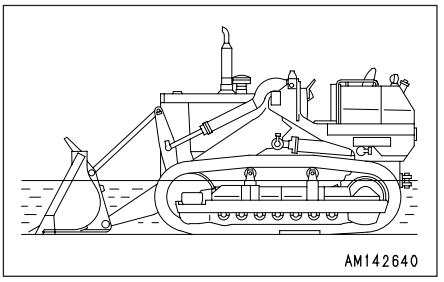


12.9 PRECAUTIONS FOR OPERATION

12.9.1 METHOD OF USING STEERING CLUTCH

If the steering clutch one side is used frequently or if many gradual turns are made with steering clutch half-engaged, the steering clutch will wear out in a short time. Design the travel road well and steer the machine properly.

12.9.2 PERMISSIBLE WATER DEPTH



When operating in water, always keep the bottom of the carrier roller above the surface of the water.

Also, be careful that the engine cooling fan will not come in contact with water. The fan can be damaged.

12.9.3 PRECAUTIONS WHEN TRAVELING UP OR DOWN HILLS

Use engine as a brake

When going downhill, shift gear shift lever into low speed to run engine at slow speed and travel down slope using the engine as a brake.

Never coast down slope with the gear shift lever in the N (neutral) position or with the inching pedal depressed.

Braking when traveling downhill

While descending a slope using the engine as a brake, also apply the brakes.

Failure to brake may result in overrunning, causing engine trouble.

12.9.4 PRECAUTIONS ON SLOPES

Be careful of fuel level

If the fuel level in the fuel tank becomes low when working on slopes, the engine may suck in air because of the angle of the machine or the swaying of the machine. If this makes the engine stop, so be careful not to let the fuel level in the fuel tank become too low.

Precautions when engine stops on slopes

If the engine stops while working or traveling on a hill, immediately depress the brake pedal, lower the bucket to the ground to stop the machine, then lock the brake pedal with the brake lock lever.

Thereafter, move the gear shift lever to the N (neutral) position, lock the lever, then restart the engine.

12.15 CHECK AFTER STOPPING ENGINE

1. Walk around the machine and check the work equipment, paintwork, and undercarriage, and check also for leakage of oil or water. If any abnormalities are found, repair them.

2. Fill the fuel tank.

3. Check the engine compartment for paper and debris. Clean out any paper and debris to avoid a fire hazard.

4. Remove any mud stuck to the undercarriage.

14. COLD WEATHER OPERATION

14.1 PRECAUTIONS FOR LOW TEMPERATURE

If the temperature becomes low, it becomes difficult to start the engine, and the coolant may freeze, so do as follows.

14.1.1 FUEL AND LUBRICANTS

Change to fuel and oil with low viscosity for all components.

For details of the specified viscosity, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE".

14.1.2 COOLANT

⚠ WARNING

Keep antifreeze fluid away from an open flame. Never smoke when using antifreeze.

NOTICE

Never use methanol, ethanol or propanol based antifreeze.

Where no permanent antifreeze is available, an ethylene glycol antifreeze without corrosion inhibitor may be used only for the cold season. In this case, clean the cooling system twice a year (in spring and autumn). When refilling the cooling system, add antifreeze in autumn, but do not add any in spring.

Absolutely avoid using any water leak preventing agent irrespective of whether it is used independently or mixed with an antifreeze.

Do not mix one antifreeze with a different brand.

For details of the antifreeze mixture when changing the coolant, see "24.1 WHEN REQUIRED".

Use a Permanent Antifreeze (ethylene glycol mixed with corrosion inhibitor, antifoam agent, etc.) meeting the standard requirements as shown below. With permanent antifreeze, no change of coolant is required for a year. If it is doubtful that an available antifreeze meets the standard requirements, ask the supplier of that antifreeze for information.

Standard requirements for permanent antifreeze.

- SAE J1034
- FEDERAL STANDARD O-A-548D

MEMO

No.	Supplier	**Engine Oil [CD or CE]** SAE10W, 30, 40 10W30, 15W40 (The 15W40 oil marked * is CE.)	**Gear Oil [GL-4 or GL-5]** SAE80, 90, 140	**Grease [Lithium-Base]** NLGI No. 2	**Anti-freeze Coolant [Ethylene Glycol Base] Permanent Type**
1	KOMATSU	EO10-CD EO30-CD EO10-30CD EO15-40CD	GO90 GO140	G2-LI G2-LI-S	AF-ACL AF-PTL AF-PT (Winter, one season type)
2	AGIP	Diesel sigma S Super dieselmulti-grade *Sigma turbo	Rotra MP	GR MU/EP	–
3	AMOCO	*Amoco 300	Multi-purpose gear oil	RYKON prenium grease	–
4	ARCO	*Arcofleet S3 plus	Arco HD gear oil	Litholine HEP 2 Arco EP moly D	–
5	BP	Vanellus C3	Gear oil EP Hypogear EP	Energrease LS-EP2	Antifreeze
6	CALTEX	*RPM delo 400 RPM delo 450	Universal thuban Universal thuban EP	Marfak all purpose 2 Ultra-duty grease 2	AF engine coolant
7	CASTROL	*Turbomax *RX super CRD	EP EPX Hypoy Hypoy B Hypoy C	MS3 Spheerol EPL2	Anti-freeze
8	CHEVRON	*Delo 400	Universal gear	Ultra-duty grease 2	–
9	CONOCO	*Fleet motor oil	Universal gear lubricant	Super-sta grease	–
10	ELF	Multiperformance 3C Performance 3C	–	Tranself EP Tranself EP type 2	Glacelf
11	EXXON (ESSO)	Essolube D3 *Essolube XD-3 *Essolube XD-3 Extra *Esso heavy duty Exxon heavy duty	Gear oil GP Gear oil GX	Beacon EP2	All season coolant
12	GULF	Super duty motor oil *Super duty plus	Multi-purpose gear lubricant	Gulfcrown EP2 Gulfcrown EP special	Antifreeze and coolant
13	MOBIL	Delvac 1300 *Delvac super 10W-30, 15W-40	Mobilube GX Mobilube HD	Mobilux EP2 Mobilgrease 77 Mobilgrease special	–

- Use a permanent type of antifreeze.
  If, for some reason, it is impossible to use permanent type antifreeze, use an antifreeze containing ethylene glycol.

- Stop the machine on level ground when cleaning or changing the coolant.

- When deciding the ratio of antifreeze to water, check the lowest temperature in the past, and decide from the mixing rate table given below.
  It is actually better to estimate a temperature about 10°C (50°F) lower when deciding the mixing rate.

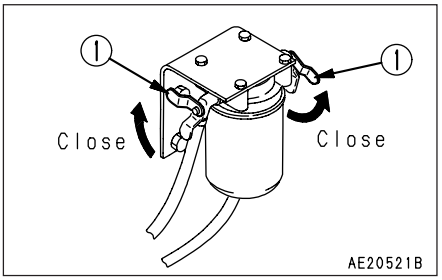
Mixing rate of water and antifreeze

Min. atmospheric temperature	°C	-5	–10	–15	–20	–25	–30
	°F	23	14	5	–4	–13	–22
Amount of antifreeze	ℓ	15.0	19.5	23.5	26.5	30.0	32.5
	US gal	3.9	5.07	6.21	6.89	7.8	8.45
	UK gal	3.3	4.29	5.17	5.83	6.6	7.15
Amount of water	ℓ	50.0	45.5	41.5	38.5	35.0	32.5
	US gal	13	11.83	10.79	10.01	9.1	8.45
	UK gal	11	10.01	9.13	8.47	7.7	7.15

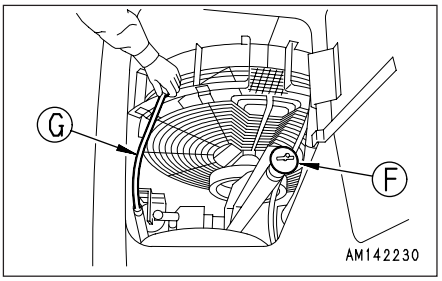
- We recommend use of an antifreeze density gauge to control the mixing proportions.

- Use city water for the cooling water.
  If river water, well water or other such water supply must be used, contact your Komatsu distributor.

1. Stop the engine and close corrosion resistor levers ① (2 places).



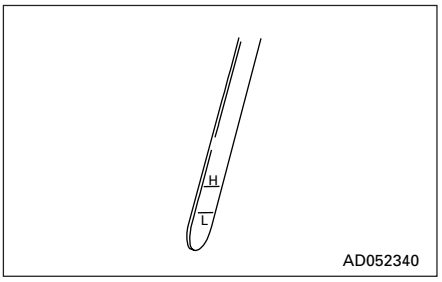
24.3.3 CHECK OIL LEVEL IN ENGINE OIL PAN, ADD OIL



1. Open the upper cover at the front of the machine.

2. Remove dipstick Ⓖ and wipe the oil off with a cloth.

3. Insert dipstick Ⓖ fully in the oil filler pipe, then take it out again.
4. The oil level should be between the H and L marks on dipstick Ⓖ.
   If the oil level is below the L mark, take out the dispstick and add engine oil through oil filler Ⓕ.



For details of the oil to use, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE".

5. If the oil is above the H mark, drain the excess engine oil from drain plug, and check the oil level again.

6. If the oil level is correct, tighten the oil filler cap securely, insert oil level gauge Ⓖ fully into the dipstick guide, then close the upper cover.

REMARK
- When checking the oil level after the engine has been operated, wait for at least 15 minutes after stopping the engine before checking.
- If the machine is at an angle, make it horizontal before checking.
- When adding oil, remove the oil level gauge from the gauge guide so that the air in the crank case will be released.

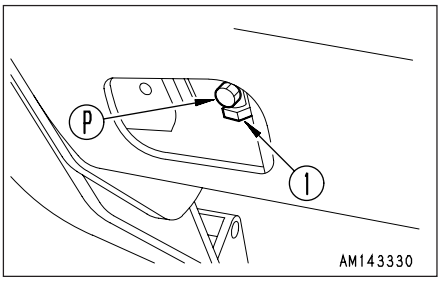
24.5.4 REPLACE OIL IN ENGINE OIL PAN AND ENGINE OIL FILTER CARTRIDGE

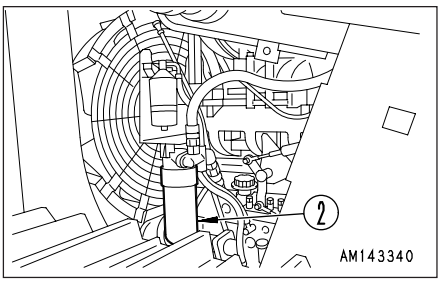
⚠ WARNING

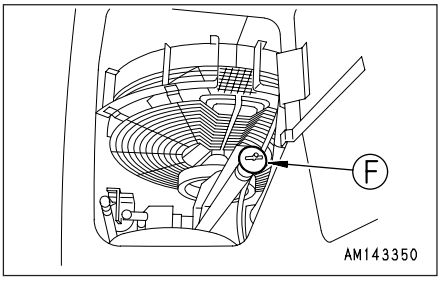
Do not replace the oil just after stopping the engine, since each part is still hot. Wait until the oil is cooled.

- Container to receive used oil: 26 ℓ (6.7 US gal, 5.7 UK gal) minimum
- Replacement oil: 26 ℓ (6.7 US gal, 5.7 UK gal)
- Prepare socket wrench and filter wrench.

1. Remove the undercover of the machine body and place a container to receive used oil just under the drain plug.
2. Remove drain plug Ⓟ slowly, taking care not to get soaked with oil, and loosen valve ① to drain oil.
3. Check the drained oil. If it contains metal chips and foreign matter, please contact your Komatsu distributor.
4. Install drain plug Ⓟ.
5. Turn filter cartridge ② to the left with the filter wrench to remove it. If the engine has been operated, wait about 10 minutes, since much oil flows out.
6. Clean the filter stand and fill the new cartridge with engine oil. Apply engine oil (or grease) to the packing of the new filter cartridge and install it.
7. After the packing surface touches the filter stand, turn the cartridge further by 3/4 – 1 turn.
8. After replacing the filter cartridge, supply engine oil through oil filler Ⓕ up to between H and L marks of the oil level gauge. For details of the oil to use, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE". When supplying oil, take care not to splash it over the alternator.
9. Run the engine idle at a low speed for a while, then stop it. Referring to "24.3 CHECK BEFORE STARTING", confirm that the oil level is between the H and L marks of the oil level gauge.

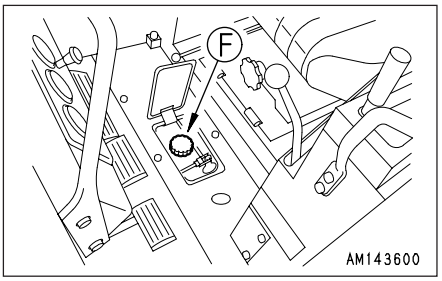






Even if the machine has not been operated for 500 hours, the oil and filter cartridge must be replaced when the machine has been operated for 6 months.
In the same way, even if the machine has not been operated for 6 months, the oil and filter cartridge must be replaced when the machine has been operated for 500 hours.

7. After installing the strainer, supply engine oil through oil filler Ⓕ up to the specified level.



For details of the oil to use, see "20. USE OF FUEL, COOLANT AND LUBRICANTS ACCORDING TO AMBIENT TEMPERATURE".

8. After supplying the oil, confirm its level according to "24.3 CHECK BEFORE STARTING".

25. SPECIFICATIONS

D75S-5

WEIGHT			
● Operating weight (Excluding operator)		(kg)	21130 (46592 lb)
PERFORMANCE			
● Bucket capacity		(m^3)	2.2
● Maximum load capacity		(kg)	4,400 (9702 lb)
● Travel speed	Forward 1st gear		0 – 3.3
	Forward 2nd gear	(km/h)	0 – 5.8
	Forward 3rd gear	(km/h)	0 – 9.6
	Reverse 1st gear	(km/h)	0 – 4.3
	Reverse 2nd gear	(km/h)	0 – 7.5
	Reverse 3rd gear	(km/h)	0 – 12.1
● Maximum traction force		(N {kgf})	250360 {25530}
● Ground pressure		(kPa {kgf/cm^2})	82.37 {0.84}
ENGINE			
● Model			Komatsu S6D125E-2 diesel engine
● Rated output			151.51 kW {206 PS}/2000 rpm
● Maximum torque			922 N·m {94 kgf·m}/1500 rpm
● Starting motor			24 V 7.5 kW
● Alternator			24 V 35 A
● Battery			12 V 170 Ah x 2 pieces