

SHOP

MANUAL

KOMATSU

GD825A-2

MACHINE MODEL SERIAL No.

GD825A-2

11001 and up

- This shop manual may contain attachments and optional equipment that are not available in your area. Please consult your local Komatsu distributor for those items you may require. Materials and specifications are subject to change without notice.
- GD825A-2 mount the S6D140-1 and S6D140E-2 engine.
For details of the engine, see the 6D140-1 and 6D140-2 Series Engine Shop Manual.

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Safety notice

Important safety notice

Proper service and repair are extremely important for safe machine operation. The service and repair techniques recommended by Komatsu and described in this manual are both effective and safe. Some of these techniques require the use of tools specially designed by Komatsu for the specific purpose.

To prevent injury to workers, the symbol **▲** is used to mark safety precautions in this manual. The cautions accompanying these symbols should always be followed carefully. If any dangerous situation arises or may possibly arise, first consider safety, and take the necessary actions to deal with the situation.

1. General precautions

▲ Mistakes in operation are extremely dangerous. Read the Operation and Maintenance Manual carefully before operating the machine. In addition, read this manual and understand its contents before starting the work.

- 1) Before carrying out any greasing or repairs, read all the safety labels stuck to the machine. For the locations of the safety labels and detailed explanation of precautions, see the Operation and Maintenance Manual.
- 2) Decide a place in the repair workshop to keep tools and removed parts. Always keep the tools and parts in their correct places. Always keep the work area clean and make sure that there is no dirt, water, or oil on the floor. Smoke only in the areas provided for smoking. Never smoke while working.
- 3) When carrying out any operation, always wear safety shoes and helmet. Do not wear loose work clothes, or clothes with buttons missing.
 - Always wear safety glasses when hitting parts with a hammer.
 - Always wear safety glasses when grinding parts with a grinder, etc.
- 4) When carrying out any operation with 2 or more workers, always agree on the operating procedure before starting. Always inform your fellow workers before starting any step of the operation. Before starting work, hang UNDER REPAIR warning signs in the operator's compartment.
- 5) Only the approved personnel can do the work in a closed environment or in a prohibited area.
- 6) Only qualified workers must carry out work and operation which require license or qualification.
- 7) Keep all tools in good condition, learn the correct way to use them, and use the proper ones of them. Before starting work, thoroughly check the tools, machine, forklift, service car, etc.
- 8) If welding repairs are needed, always have a trained and experienced welder carry out the work. When carrying out welding work, always wear welding gloves, apron, shielding goggles, cap and other clothes suited for welding work.
- 9) Before starting work, warm up your body thoroughly to start work under good condition.
- 10) Avoid continuing work for long hours and take rests at proper intervals to keep your body in good condition. Take rests in specified safe places.
- 11) When you work in high places, use a platform.
- 12) Before you start the work, use the personal fall-arrest equipment to prevent falling. There is a danger of personal accident that you fall by slipping.
- 13) Always do the work correctly. If you find the unsafe behavior of co-worker, give him/her a notice and stop it.
- 14) Because there is a danger that you are caught, be very careful when the work is done in dangerous areas such as: when you go in the range where the lifted load possibly falls, or when you stand directly in front of tire, or when you are near the sliding parts.
- 15) When you handle chemical materials (such as nitrogen gas), see the MSDS (safety data sheet) and local guidelines, and get the important information (such as a safe handling method). Also, put on applicable protective equipment (such as protective goggles, gloves, and masks).

- 16) If necessary, cut out all the power sources (electricity, oil pressure, compressed air, etc.) before you start the work. If the machine has a lock mechanism, set it to the LOCK position and install the warning tag in a position where it is easy to see. Do not release the lock until the work is completed.

Safety points

1	Good arrangement
2	Correct work clothes
3	Following work standard
4	Making and checking signs
5	Prohibition of operation and handling by unlicensed workers
6	Safety check before starting work
7	Wearing protective goggles (for cleaning or grinding work)
8	Wearing shielding goggles and protectors (for welding work)
9	Good physical condition and preparation
10	Precautions against work which you are not used to or you are used to too much

2. Preparations for work

- 1) Before adding oil or making any repairs, park the machine on a hard and level ground, and apply the parking brake and block the wheels or tracks to prevent the machine from moving.
- 2) Before starting work, lower the work equipment (blade, ripper, bucket, etc.) to the ground. If this is not possible, insert the lock pin or use blocks to prevent the work equipment from falling. In addition, be sure to lock all the control levers and hang warning signs on them.
- 3) When disassembling or assembling, support the machine with blocks, jacks, or stands before starting work.
- 4) Remove all mud and oil from the steps or other places used to get on and off the machine. Always use the handrails, ladders or steps when getting on or off the machine. Never jump on or off the machine. If it is impossible to use the handrails, ladders or steps, use a stand to provide safe footing.

3. Precautions during work

- 1) Before disconnecting or removing components of the oil, water, or air circuits, first release the pressure completely from the circuit. When removing the oil filler cap, a drain plug, or an oil pressure pickup plug, loosen it slowly to prevent the oil from spurting out.
- 2) The coolant and oil in the circuits are hot when the engine is stopped, so be careful not to get scalded. Wait for the oil and coolant to cool before carrying out any work on the oil or water circuits.
- 3) Before starting work, stop the engine. When working on or around a rotating part, in particular, stop the engine. When checking the machine without stopping the engine (measuring oil pressure, revolving speed, temperature, etc.), take extreme care not to get rolled or caught in rotating parts or moving parts.
- 4) Remove the cable from the battery, before starting the work. Always remove the cable from the negative (-) terminal first.
- 5) When raising a heavy component (heavier than 20 kg), use a hoist or crane. Before starting work, check that the slings (wire ropes, chains, and hooks) are free from damage. Always use slings which have ample capacity and install them to proper places. Operate the hoist or crane slowly to prevent the component from hitting any other part. Do not work with any part still raised by the hoist or crane.
- 6) When removing a cover which is under internal pressure or under pressure from a spring, always leave 2 bolts in diagonal positions. Loosen those bolts gradually and alternately to release the pressure, and then remove the cover.
- 7) When removing components, be careful not to break or damage the electrical wiring. Damaged wiring may cause electrical fires.

- 8) When removing piping, stop the fuel or oil from spilling out. If any fuel or oil drips onto the floor, wipe it up immediately. Fuel or oil on the floor can cause you to slip and can even start fires.
 - 9) As a general rule, do not use gasoline to wash parts. Do not use it to clean electrical parts, in particular.
 - 10) Be sure to assemble all parts again in their original places. Replace any damaged parts and parts which must not be reused with new parts. When installing hoses and wires, be sure that they will not be damaged by contact with other parts when the machine is operated.
 - 11) When installing high pressure hoses, make sure that they are not twisted. Damaged tubes are dangerous, so be extremely careful when installing tubes for high pressure circuits. In addition, check that connecting parts are correctly installed.
 - 12) When assembling or installing parts, always tighten them to the specified torques. When installing protective parts such as guards, or parts which vibrate violently or rotate at high speed, be particularly careful to check that they are installed correctly.
 - 13) When aligning 2 holes, never insert your fingers or hand. Be careful not to get your fingers caught in a hole.
 - 14) When measuring hydraulic pressure, check that the measuring tools are correctly assembled.
 - 15) Take care when removing or installing the tracks of track-type machines. When removing the track, the track separates suddenly, so never let anyone stand at either end of the track.
 - 16) If the engine is operated for a long time in a place which is not ventilated well, you may suffer from gas poisoning. Accordingly, open the windows and doors to ventilate well.
- 4. Precautions for sling work and making signs**
- 1) Only one appointed worker must make signs and co-workers must communicate with each other frequently. The appointed sign maker must make specified signs clearly at a place where he is well seen from the operator's seat and where he can see the working condition easily. The sign maker must always stand in front of the load and guide the operator safely.
 - ⚠ **Do not do the work while the lifted load is in the range where it possibly falls. It is not allowed to go in the range where the lifted load possibly falls.**
 - ⚠ **Do not move a load over a person.**
 - ⚠ **Never step on the load.**
 - ⚠ **Do not prevent the load from swinging or falling down by holding it simply with the hands.**
 - ⚠ **The sling workers and assistant workers other than the guide must move to a place where they are not caught between the load and materials or equipment on the ground or hit by the load even if the crane starts abruptly.**
 - When you lift or fix the machine, see "Operation and Maintenance Manual" or "Field Assembly Instruction".
 - ⚠ **Do not lift or fix the machine by the positions where the name plate is not attached.**
 - When you lift the machine for the disassembly and assembly, follow the instructions on the Disassembly and Assembly.
 - 2) Check the slings before starting sling work.
 - 3) Keep putting on gloves during sling work. (Put on leather gloves, if available.)
 - 4) Measure the weight of the load by the eye and check its center of gravity.
 - 5) Use proper sling according to the weight of the load and method of slinging. If too thick wire ropes are used to sling a light load, the load may slip and fall.
 - 6) Do not sling a load with 1 wire rope alone. If it is slung so, it may rotate and may slip out of the rope. Install 2 or more wire ropes symmetrically.
 - ⚠ **Slinging with 1 rope may cause turning of the load during hoisting, untwisting of the rope, or slipping of the rope from its original winding position on the load, which can result in a dangerous accident.**

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