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| **Storage information** |
| **KSD 1403 Workshop Manual (Rev. 00\_DRAFT\_01)** |



**Registration of modifications to the document**

Any modifications to this document must be registered by the drafting body, by completing the following table.

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| **Released by** | **Code** | **Revision** | **Release Date** | **Revision date** | **Edited by** | **Endorsed** |
|  | KSD1403-WS |  |  |  |  |  |

**Translated from the original manual in Italian language**

Data reported in this issue can be modified at any time by KOHLER.

Sommario

[1. TITOLO 1 2](#_Toc495648770)

[1.1. Asdfsdfsdf 2](#_Toc495648771)

[1.2. Asdfsdfsdfggg 2](#_Toc495648772)

# Storage information

## Product preservation

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| Importante.png**Important:*** If the engines are not to be used for 6 months, they must be protected by carrying out the operations described in Engine storage (up to 6 months) ( **Par.** **4.14** ).
* If the engine is still not in use after the first 6 months, it is necessary to carry out a further operation to extend the protection period (more than 6 months) ( **Par.** **4.15** ).
* If the engine is not to be used for an extended period, the protective treatment procedure must be repeated within 24 months of the previous one.
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## Engine storage (up to 6 months)

**Before storing the engine check that:**

* The environments are not humid or exposed to bad weather. Cover the engine with a proper protective sheet against dampness and atmospheric contaminants.
* The place is not near electric panel.
* Avoid storing the engine in direct contact with the ground.

## Engine storage over 6 months

**Follow the steps described in** **Par.** **4.14** **.**

1. Engine oil replacement ( **Par. 4.6** ).
2. Refuel with fuel additives for long storage.
3. With expansion tank:
make sure that the coolant is up to the maximum level.
4. Without expansion tank: Top liquid up until the pipes inside the radiator are covered by about 5 mm.

Do not overfill the radiator, but leave room for the fuel to expand.

1. Start the engine and keep it idle at minimum speed for 2 minutes.
2. Bring the engine to 3/4 of the maximum speed for 5÷10 minutes.
3. Turn off the engine.
4. Completely empty the fuel tank.
5. Spray SAE 10W-40 on the exhaust and intake manifolds.
6. Seal the exhaust and intake ducts to prevent foreign bodies from entering.
7. When cleaning the engine, if using a pressure washer or steam cleaning device, avoid directing the nozzle on electrical components, cable connections and sealed rings (oil seals etc).
If cleaning engine with a pressure washer or steam cleaner, it is important to maintain a minimum distance of at least 200mm between the surface to be washed and the nozzle - avoiding absolutely electrical components such as alternators, starter motors and engine control units (ECU).
8. Treat non-painted parts with protective products.

If the engine protection is performed according to the suggestions indicated no corrosion damage should occur.

## Engine starting after storage

1. Remove the protective sheet.
2. Use a cloth soaked in degreasing product to remove the protective treatment from the external parts.
3. Inject lubricating oil (no more than 2 cm 3 ) into the intake ducts.
4. Refill the tank with fresh fuel.
5. Make sure that the oil and the coolant are up to the **MAX** level.
6. Start the engine and keep it idle at **MIN** speed for a two about minutes.
7. Bring the engine to 75% of **MAX** rated speed for 5 to 10 minutes.
8. Stop the engine while the oil is still hot, discharge the protective oil in a suitable container.

 **Warning**

* + Over time, lubricants and filters lose their properties, so it is important consider whether they need replacing, also based on the criteria described in **Par. 4.4** .

1. Replace the filters (air, oil, fuel) with original spare parts.
2. Pour new oil **(Par. 4.6)** up to the **MAX** level *.*
3. Empty the cooling circuit completely and pour in the new coolant up to the **MAX** level ( **Par. 4.7** ).

## Unused machine

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| If the machine is not used for a certain amount of time, follow the operations below:**4.17.1** **Operations for the engine** |
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| **POINT** | **OPERATION** |
| **1** | Unused machine up to 2 months | * The place must be dry and fresh throughout the period in which the machine is not used.
* Consult the machine’s manual to disconnect the battery (before disconnecting the battery, wait for minimum 5 mins after turning off the engine).
* Make sure the engine is not exposed to direct sunlight.
* Make sure the engine is not near any heat sources.
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| Starting | * Before starting the engine, check Par. 4.4 for maintenance operations.
* Consult the machine’s manual to connect the battery and start the engine.
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| **2** | Unused machine from 2 to 9 months | * Perform the operations related to unused machine described in point 1.
* Perform the operations described in Par. 4.11.
* Start the engine at least every 4 months as per operations described in point 1:
* Avoid sudden accelerations for the first few minutes.
* Bring the engine to the working temperature by pressing the accelerator 3/4 from MAX.
* Leave the engine running at minimum speed for a few minutes and turning off the engine.
 |
| * Starting
 | * Before starting the engine, check Par. 4.4 for maintenance operations.
* Consult the machine’s manual to connect the battery and start the engine.
* Avoid sudden accelerations for the first few minutes.
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| **3** | Unused machine over 9 months | * Perform the operations related to unused machine described in point 1 and 2.
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| Starting | * Before starting the engine, check Par. 4.4 for maintenance operations.
* Check the quality of coolant from the relative testing strips.
* Consult the machine’s manual to connect the battery and start the engine.
* Avoid sudden accelerations for the first few minutes.
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