# SHOP MANUAL

KOMATSU®

# HM300-1

| Machine model | Serial number |
|---|---|
| **HM300-1** | **1001 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.

- HM300-1 mount the SAA6D125E-3 engine.
  For details of the engine, see the 125-3 Series Engine Shop Manual.


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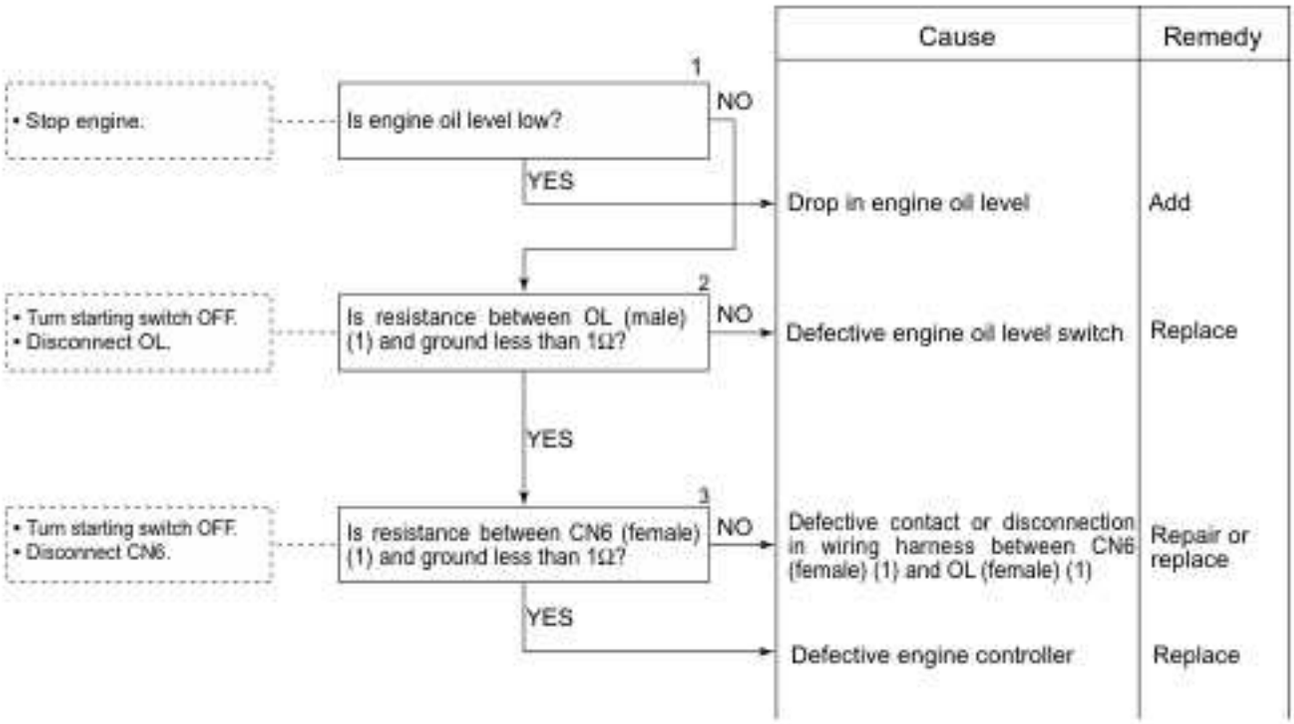




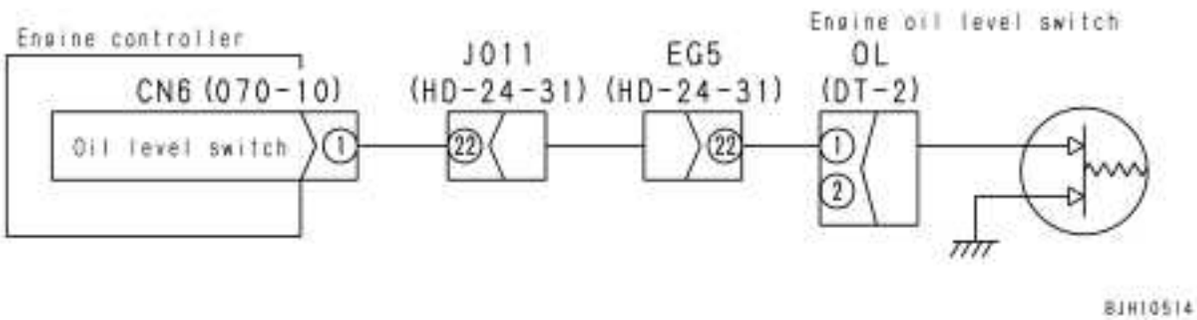
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## ENG-21 FAILURE CODE [B@BAZK] (ENGINE OIL: DROP IN LEVEL (ZK))

★ Nature of failure:The signal circuit of the engine oil pressure switch became open (shut off from GND)




**ENG-21 Related electrical circuit diagram**






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## TM-93 EMERGENCY STEERING DOES NOT OPERATE

| | |
|---|---|
| Failure content (1) | When steering pump stops, automatic emergency steering does not operate. |
| General information | Check that the parking brake is released. |

| | Causes | | Standard values when normal and remarks for troubleshooting | | |
|---|---|---|---|---|---|
| Possible causes and the standard values when normal | 1 | Defective fuse (16) | If fuse (16) is broken, circuit probably has ground fault. (Check it in item 8.) | | |
| | 2 | Defective parking brake switch (Internal contact) | ★ Prepare with starting switch OFF, then start engine and carry out troubleshooting.<br>• Connect T-adapter to B17 (male). | | |
| | | | B17 (male) | Operation of parking brake | Resistance |
| | | | Between (1) – (2) | Released (Closed) | Max. 1 Ω |
| | | | | Operated (Open) | Min. 1 MΩ |
| | 3 | Defective flow switch (Internal contact) | ★ Prepare with starting switch OFF, then start engine and carry out troubleshooting.<br>• Connect T-adapter to E02 (male). | | |
| | | | E02 (male) | Steering pump | Resistance |
| | | | Between (1) – (2) | Operated (Open) | Min. 1 MΩ |
| | | | | Stopped (Closed) | Max. 1 Ω |
| | 4 | Defective emergency steering timer | ★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting. | | |
| | | | 1) Between relay terminal (7) – ground | Voltage | 20 – 30V |
| | | | 2) Between relay terminal (8) – ground | Voltage | 20 – 30V |
| | | | 3) Between relay terminal (6) – ground | Voltage | 20 – 30V |
| | | | • If voltage is normal in 1) above and abnormal 2) and 3), timer is defective.<br>• If voltage is abnormal in 1), carry out troubleshooting in item 7. | | |
| | 5 | Defective emergency steering relay | ★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting. | | |
| | | | 1) Between relay terminal (74) – ground | Voltage | 20 – 30V |
| | | | 2) Between relay terminal (77) – ground | Voltage | 20 – 30V |
| | | | 3) Between relay terminal (61) – ground | Voltage | 20 – 30V |
| | | | ★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON. | | |
| | | | 4) Between relay terminal (58) – ground | Resistance | Max. 1 Ω |
| | | | • If voltage is normal in 1), 3) and 4) above and abnormal 2), relay is defective.<br>• If voltage is abnormal in 1), carry out troubleshooting in item 7 | | |
| | 6 | Defective emergency steering motor | ★ Prepare with starting switch OFF, then turn starting switch ON and carry out troubleshooting. | | |
| | | | Between motor terminal M-2 – ground | Voltage | 20 – 30V |
| | | | ★ Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch ON. | | |
| | | | Between motor terminal E-2 – ground | Voltage | 20 – 30V |
| | | | • If result of above troubleshooting is normal, starting motor is defective. | | |



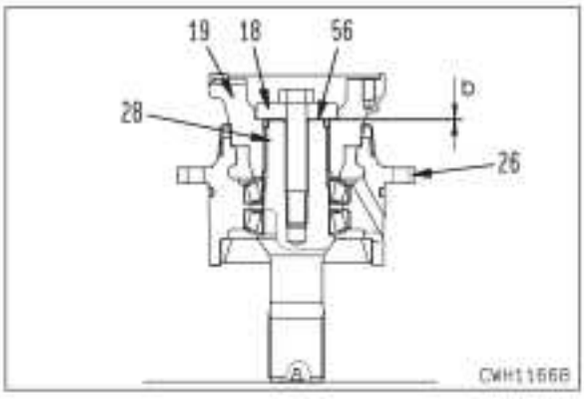
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### 3. Adjustment of pre-load on shaft bearing

1) Drip axle oil (SHELL DONAX TD) on the bearing and rotate it.
2) Measure dimension "**b**" between the end surface of shaft (28) and the end surface of output shaft coupling.
3) Select shims which attain the dimension of **b** + (0 to 0.05 mm).
4) Assemble the selected shims (56) in and then install output shaft coupling (19) and holder (18).

   Mounting bolt
   **: 490 - 608 Nm {50 - 62 kgm}**
5) Hook a push-pull scale on to the bolthole (208 mm in dia.) on side carrier assembly (28), and measure start torque.
   - Standard value for start torque
     **: Min. 14.7 N {1.5 kg}**

   ★ If the start torque exceeds the above standard value, increase or decrease the number of shims for adjustment and measure again.
6) Remove holder (18) and output shaft coupling (19).

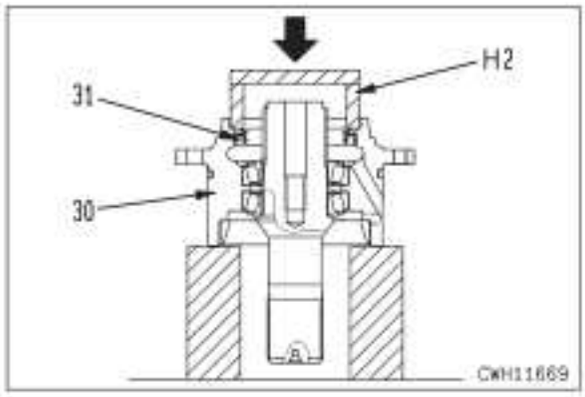


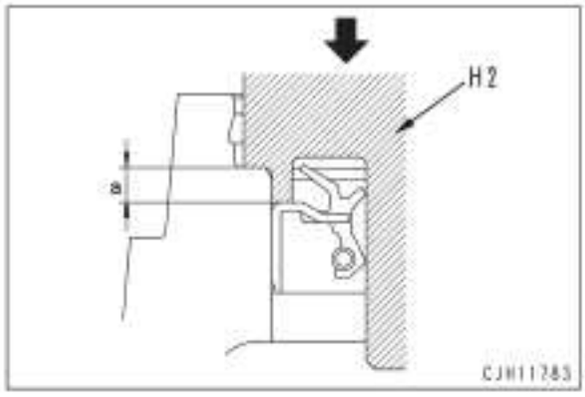

7) Press-fit oil seal (31) into carrier (30), using tool **H2**.

   ★ Keep press-fitting until distance "**a**" between the oil seal periphery surface and carrier end surface becomes 4.6 ± 0.2 mm.

   Oil seal periphery surface
   **: Seal End 242 or equivalent**

   Oil seal lip face and oil seal inside (to be filled completely)
   **: Grease (G2-LI)**

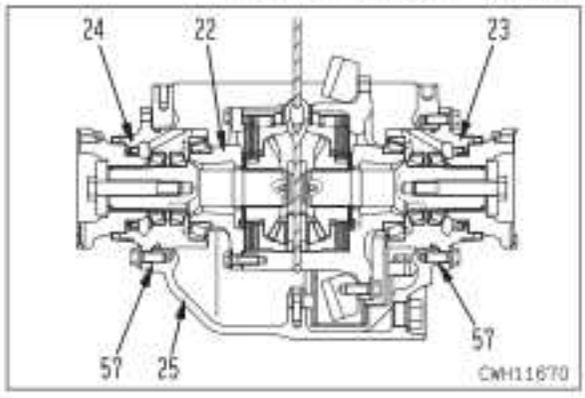



### 4. Differential gear assembly and side carrier and shaft assembly

1) Sling differential gear assembly (22) and keep the gear on the mounting position of differential case (25).
2) Assemble shims (57) whose thickness, number in use and location were confirmed at the time of disassembling, and then install side carrier and shaft assemblies (23) and (24).
   - Kind of shim thickness
     **: 0.05 mm, 0.2 mm, 0.3 mm and 0.8 mm**

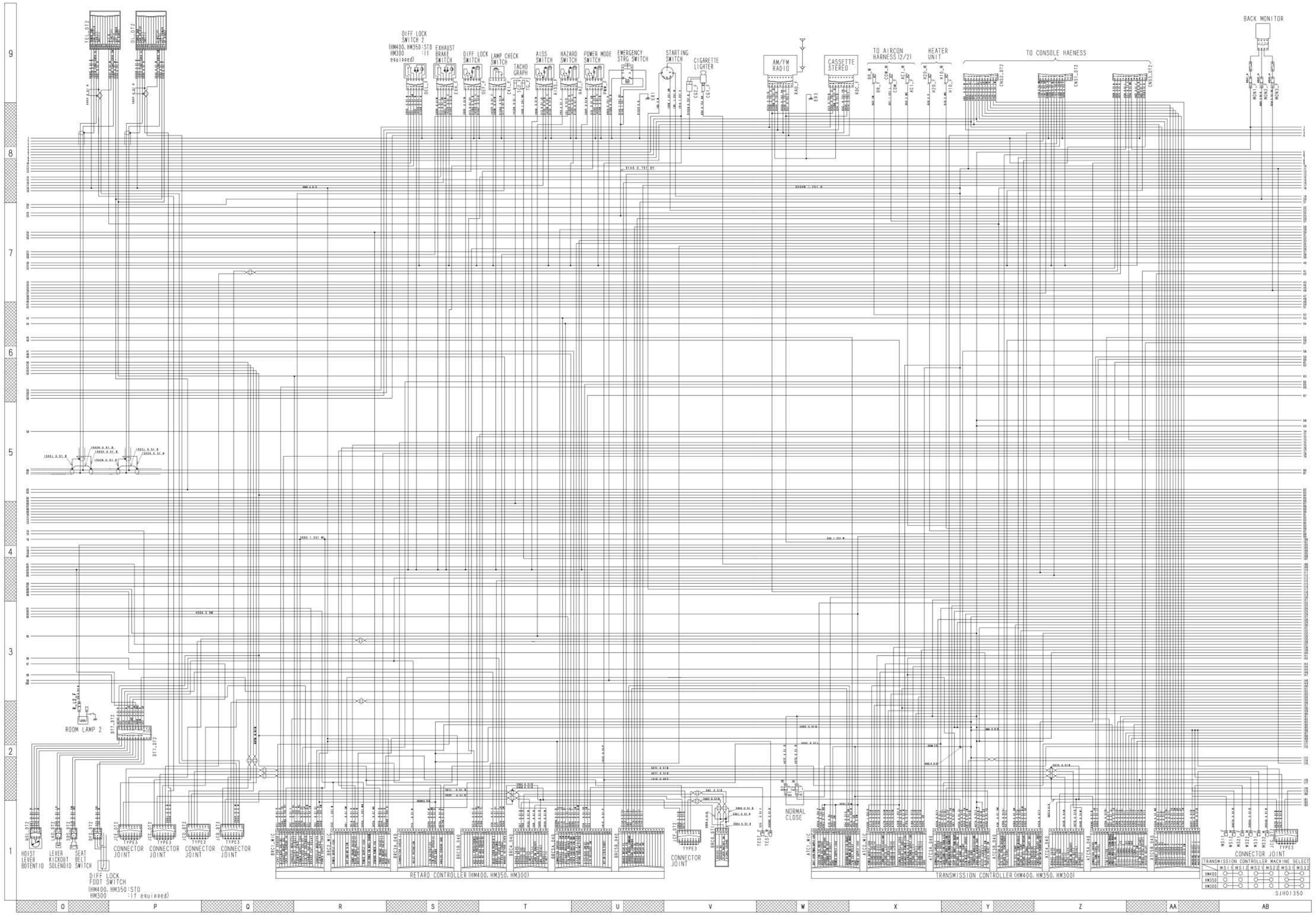
   Mounting bolt
   **: 157 - 196 Nm {16 - 20 kgm}**






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**DIAGRAM FOR ELECTRICAL CIRCUIT INSIDE CAB (2/4)**







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