# SHOP MANUAL

KOMATSU®

# PC18MR-2

| Machine model | Serial number |
|---|---|
| **PC18MR-2** | **15001 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.

- PC18MR-2 mount the 3D67E-1A engine.
  For details of the engine, see the 67E-1 Series Engine Shop Manual.


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# Classification and procedures of troubleshooting

## Classification of troubleshooting

| Mode | Contents |
|---|---|
| E-mode | Troubleshooting of electric system |
| H-mode | Troubleshooting of hydraulic and mechanical system |
| S-mode | Troubleshooting of engine |

## Procedure for troubleshooting

If a phenomenon looking like a trouble occurs in the machine, select a corresponding phenomenon from "Phenomena looking like troubles and troubleshooting Nos.", and then go to explanation of the troubleshooting.

## Phenomena looking like troubles and troubleshooting Nos.

| No. | Phenomena looking like troubles | Troubleshooting | | |
|---|---|---|---|---|
| | | E-mode | H-mode | S-mode |
| **Phenomena related to engine** | | | | |
| 1 | Engine does not start | E-1 | | ● |
| 2 | Engine does not stop | E-2 | | ● |
| 3 | Engine hunts | | | ● |
| 4 | Exhaust gas color is white or blue | | | ● |
| 5 | Exhaust gas color is black or dark gray and output is insufficient | | | ● |
| 6 | Oil is consumed much | | | ● |
| 7 | Fuel is mixed in oil | | | ● |
| 8 | Oil pressure is low | | | ● |
| 9 | Oil pressure is high | | | ● |
| 10 | Engine overheats | | | ● |
| 11 | Battery is discharged quickly (Battery is dead) | | | ● |
| 12 | Glow lamp (Preheater monitor) does not light up | E-7 | | ● |
| 13 | Charge lamp (Charge level monitor) doe snot light up | E-4 | | ● |
| 14 | Charge lamp (Charge level monitor) doe snot go off | E-4 | | ● |
| **Phenomena related to work equipment, travel, swing, and blade** | | | | |
| 15 | Speed or power of whole work equipment, travel, swing, and blade is low | | H-1 | |
| 16 | Engine speed lowers extremely or engine stalls | | H-2 | |
| 17 | Work equipment, travel, swing, and blade systems do not work | E-10 | H-3 | |
| 18 | Abnormal sound comes out from around hydraulic pump | | H-4 | |
| 19 | Fine control performance or response is low | | H-5 | |
| **Phenomena related to work equipment** | | | | |
| 20 | Speed or power of boom is low | | H-6 | |
| 21 | Speed or power of arm is low | | H-7 | |
| 22 | Speed or power of bucket is low | | H-8 | |
| 23 | Speed or power of boom swing is low | | H-9 | |



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# Lubricants, fuel and coolant specifications

| Reservoir | Kind of fluid | Ambient temperature | Capacity (ℓ) | |
|---|---|---|---|---|
| | | -22 -4 14 32 50 68 86 104 122°F<br>-30 -20 -10 0 10 20 30 40 50°C | Specified | Refill |
| Engine oil pan | Engine oil | SAE 30<br>SAE 10W<br>SAE 10W-30<br>SAE 15W-40 | 3.6 | 3.3 |
| Final drive case (each) | | SAE 30 | 0.3 | 0.3 |
| Hydraulic system | | SAE 10W<br>SAE 10W-30<br>SAE 15W-40 | 23.8 | 15.2 |
| Idler (each) | Grease | G2-LI | 0.036 | 0.036 |
| Track roller (each) | | | 0.044 | 0.044 |
| Fuel tank | Diesel fuel | ASTM D975 No.2<br>*1 | 19 | — |
| Cooling system | Coolant | Add antifreeze | 3.1 | — |

*1 : ASTM D975 No.1



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<table>
<tr><td rowspan="20">Presumed cause and standard value in normalcy</td><td colspan="2">Cause</td><td colspan="4">Standard value in normalcy and references for troubleshooting</td></tr>
<tr><td rowspan="4">9</td><td rowspan="4">Defective starting motor (Internal defect)</td><td colspan="4">★Prepare with starting switch OFF, then hold starting switch in START and carry out troubleshooting.</td></tr>
<tr><td colspan="2">Starting motor</td><td colspan="2">Voltage</td></tr>
<tr><td>Between T-M2 (B) and (E)</td><td>Power input</td><td colspan="2">10 – 15 V</td></tr>
<tr><td>Between M3 (ST) and (E)</td><td>Start input</td><td colspan="2">10 – 15 V</td></tr>
<tr><td colspan="4">If the power input and start input are normal but the starting motor does not revolve, the starting motor is defective.</td></tr>
<tr><td rowspan="3">10</td><td rowspan="3">Defective alternator (Internal short circuit)</td><td colspan="4">★Prepare with starting switch OFF, then hold starting switch ON and carry out troubleshooting.</td></tr>
<tr><td colspan="2">M7</td><td colspan="2">Voltage</td></tr>
<tr><td colspan="2">Between (2) and chassis ground</td><td colspan="2">Max. 1 V</td></tr>
<tr><td rowspan="14">11</td><td rowspan="14">Disconnection in wiring harness (Disconnection or defective contact of connector)</td><td colspan="4">★Prepare with starting switch OFF, then carry out troubleshooting without turning starting switch.</td></tr>
<tr><td colspan="2">Wiring harness between battery (–) and chassis ground</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between T-M1 (+) and M2 (female) (2)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between M2 (female) (1) and T-F1 (B)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between T-F3 (ACC) and FB1 (3), (4)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between FB1 (10) and F2 (female) (2)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between F2 (female) (1) and F6 (female) (2)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between F6 (female) (1) and R1 (female) (1)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between R1 (female) (2) and chassis ground (T-M6)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between T-F4 (C) and R1 (female) (6)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between R1 (female) (3) and R4 (female) (4)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between R4 (female) (2) and M3 (female) (ST)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between T-M1 (+) and T-M2 (B)</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
<tr><td colspan="2">Wiring harness between starting motor (E) and chassis ground</td><td>Resistance</td><td>Max. 1 Ω</td></tr>
</table>



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# Information contained in troubleshooting table

★ Troubleshooting Table and relative circuit diagram collectively carry the following information. Carry out troubleshooting work after fully grasping their contents.

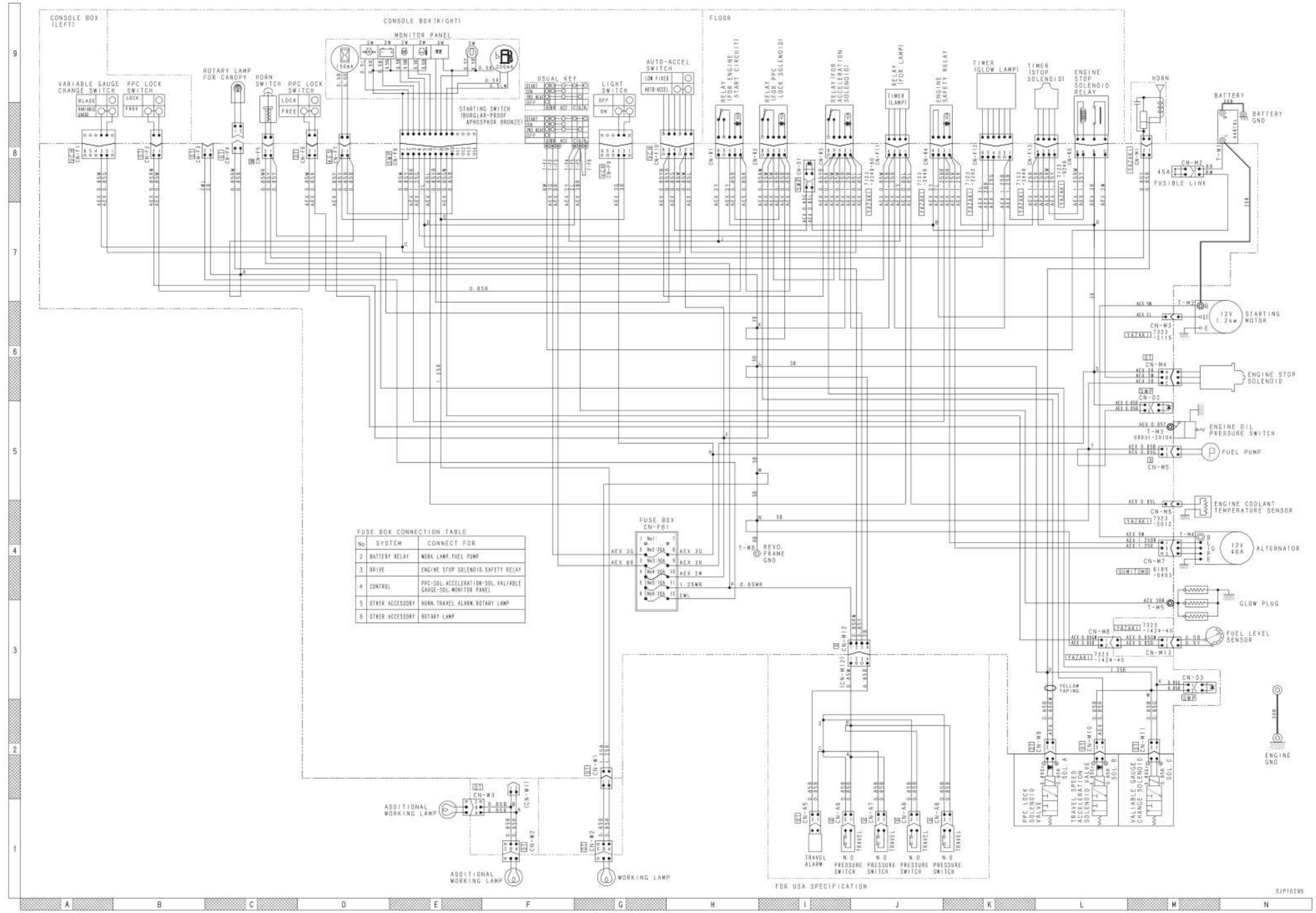
| | |
|---|---|
| Failure information | Phenomena occurring on machine |
| Relative information | Information on occurred failures and troubleshooting |

| | Cause | | Standard value in normalcy and references for troubleshooting |
|---|---|---|---|
| Presumed cause and standard value in normalcy | 1 | Cause for presumed failure (The attached No. for filing and reference purpose only. It does not stand for any priority) | <Contents><br>• The standard values in normalcy by which to judge "good" or "no good" about presumed causes.<br>• References for making judgement of "good" or "no good" |
| | 2 | | |
| | 3 | | |
| | 4 | | |
| | 5 | | |



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## Electrical circuit diagram




FUSE BOX CONNECTION TABLE

| No | SYSTEM | CONNECT FOR |
|---|---|---|
| 2 | BATTERY RELAY | WORK LAMP, FUEL PUMP |
| 3 | DRIVE | ENGINE STOP SOLENOID, SAFETY RELAY |
| 4 | CONTROL | PPC-SOL, ACCELERATION-SOL, VALIABLE GAUGE-SOL, MONITOR PANEL |
| 5 | OTHER ACCESSORY | HORN, TRAVEL ALARM, ROTARY LAMP |
| 6 | OTHER ACCESSORY | ROTARY LAMP |



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