PART NO. TONHD-E-00

HITACHI

# Technical Manual
## Operational Principle

ZW

## 550-G
## Wheel Loader

Service Manual consists of the following separate Part No.

| | |
|---|---|
| Technical Manual (Operational Principle) | : Vol. No.TONHD-E |
| Technical Manual (Troubleshooting) | : Vol. No.TTNHD-E |
| Workshop Manual | : Vol. No.WNHD-E |

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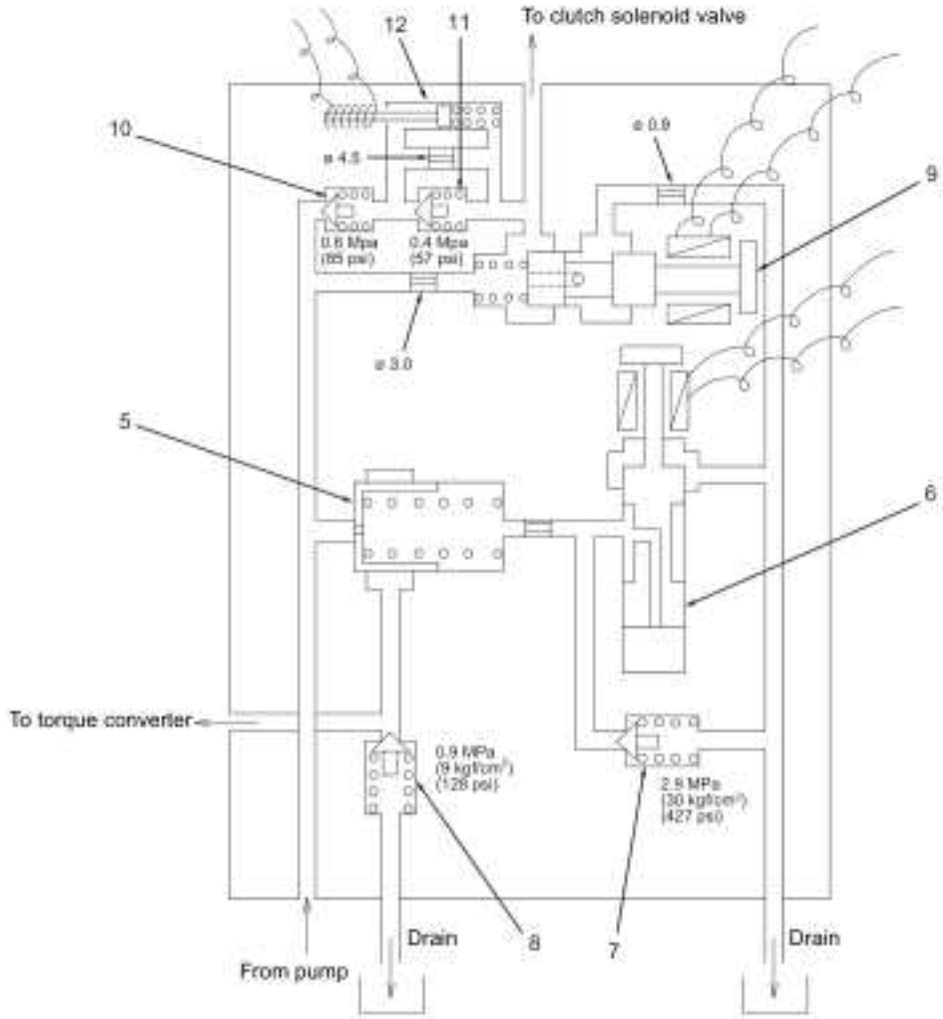
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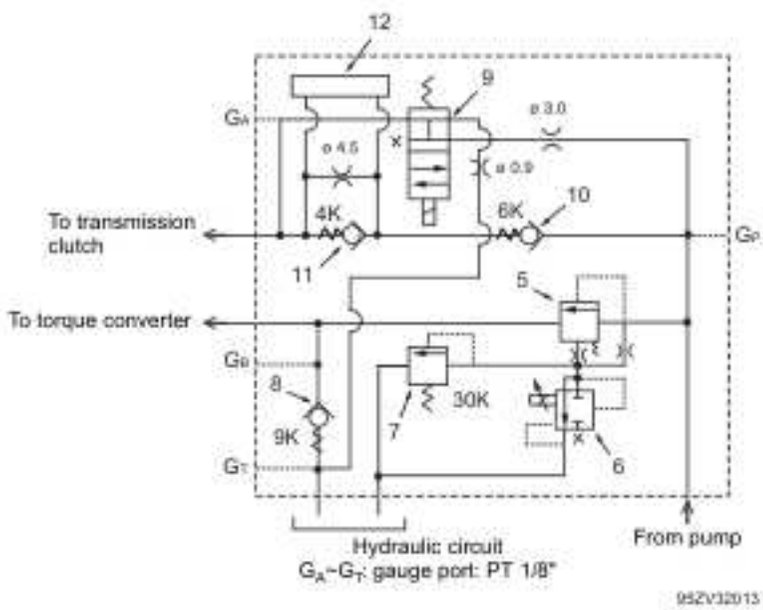
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# Interior schematic (not exact representation)



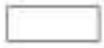
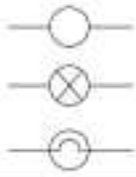
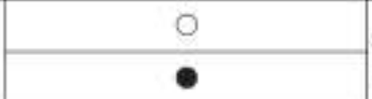
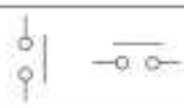
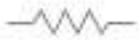
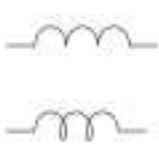

1. —
2. —
3. —
4. —
5. Clutch pressure regulator valve
6. Modulator valve (1) (Reducing valve)
7. Relief valve
   (2.9 MPa (30 kgf/cm$^2$) (427 psi))
8. T/C inlet relief valve
   (0.9 MPa (9 kgf/cm$^2$) (128 psi))
9. Modulator valve (2) (Solenoid valve)
10. Check valve 1
    (0.6 MPa (6 kgf/cm$^2$) (85 psi))
11. Check valve 2
    (0.4 MPa (4 kgf/cm$^2$) (57 psi))
12. Pressure difference sensor




**Note**
Numbers above also correspond to "Hydraulic Circuit Diagram" page 32-17.

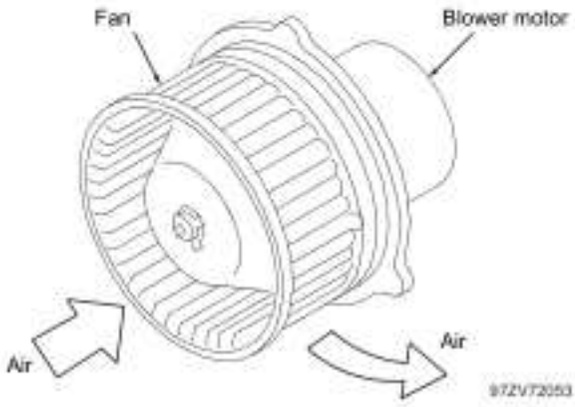
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# Electrical Circuit Symbols

| Name | Symbol | Name | Symbol |
|---|---|---|---|
| Direct current |  | Motor |  |
| Alternating current |  | Equipment |  |
| Conductor (General) |  | Fuses |  |
| Branching connection |  | Lamp |  |
| Conductors (Connected) |  | Rectifiers |  |
| Conductors (Not connected) |  | Mechanical coupling |  |
| Terminal |  | Relay contact ("a" contact) |  |
| Ground |  | Relay contact ("b" contact) |  |
| Resistance or Resistor |  | Switch |  |
| Variable resistance or Variable resistor |  | Pressure switch or Temperature switch |  |
| Inductance or Electromagnetic coil |  | Negative -positive- negative (NPN) transistor |  |
| Battery or Direct voltage source |  | Positive -negative- positive (PNP) transistor |  |

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## Blower motor assembly




The blower motor assembly consists of a DC motor and a fan, and blows air.

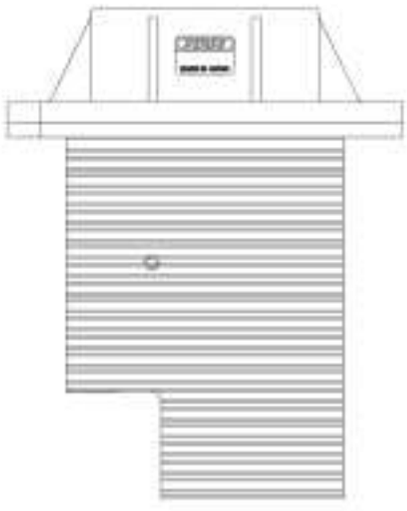
## Blower motor assembly specifications

| | |
|---|---|
| Voltage | DC 24 V |
| Number of rotations of motor | 3,100 $min^{-1}$ |
| Power consumption | 225 W±10 % |
| Fan outer diameter | ø150 |

### Troubleshooting the blower motor

| Item | Symptom | Cause | Action |
|---|---|---|---|
| Blower motor operation is defective. | Air is not blown at all. | - Blower motor<br>- Control unit | - Repair/replacement |

## BLC (blower linear control)




This resistor changes over the air quantity of the blower motor.

### Troubleshooting the blower linear control

| Item | Symptom | Cause | Action |
|---|---|---|---|
| Wire in BLC is broken. | Air quantity does not change. | - BLC<br>- Control unit | - Replacement |
| Blower motor operation is defective. | Air is not blown at all. | - Blower motor<br>- Control unit | - Repair/replacement |

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# Electrical Wiring Diagram Abbreviation Chart (S/N 0154~)

| INSTRUMENT PANEL | |
|---|---|
| WL | Radiator water level warning lamp |
| C | Charge lamp |
| AC | Air cleaner clogging alarm |
| TT | T/M oil temperature alarm |
| WT | Engine water temperature alarm |
| EP | Engine oil pressure alarm |
| BP | Brake oil pressure alarm |
| CE | MCU error (failure alarm) |
| + | +24 V power supply |
| ES | Emergency steering |
| DD | Vibration damper (option) |
| EG2 | Engine warning lamp |
| EG1 | Engine protection lamp |
| EG3 | Engine stop lamp |
| SS | — |
| WTM | Engine water temperature gauge (sensor) |
| TTM | T/M oil temperature gauge (sensor) |
| | — |
| (+) | Instrument panel illumination |
| TF | T/M oil filter clogging alarm |
| | — |
| | — |
| F | Fuel level lamp (F) |
| 3/4 | Fuel level lamp (3/4) |
| 1/2 | Fuel level lamp (1/2) |
| 1/4 | Fuel level lamp (1/4) |
| EMP | Fuel level lamp (E) |
| GND | GND (–) |
| + | + 24 V power supply |
| | — |
| | — |
| | — |
| | — |
| N | Neutral |
| + | GND (–) |
| 1 | 1st speed indication |
| 2 | 2nd speed indication |
| 3 | 3rd speed indication |
| 4 | 4th speed indication |
| P | Parking brake lamp |

| INSTRUMENT PANEL | |
|---|---|
| A | AUTO lamp |
| AB | Auto brake lamp |
| TM | Converter (+) |
| TM | Converter (–) |
| | — |
| TC | Declutch lamp |
| | — |
| WL | Work lamp |
| W | Central alarm lamp |
| GND | GND (–) |
| | — |
| | — |
| H | High-beam lamp |
| L | Turn signal (left) lamp |
| R | Turn signal (right) lamp |
| | — |
| GND | Hour meter (–) |
| HM | Hour meter (+) |

| MCU | |
|---|---|
| A1 | — |
| A2 | 2nd speed solenoid valve |
| A3 | — |
| A4 | Ride control solenoid valve |
| A5 | 3rd speed solenoid valve |
| A6 | — |
| A7 | — |
| A8 | — |
| A9 | — |
| A10 | — |
| A11 | Fuel level lamp (F) |
| A12 | Steering oil pressure warning lamp |
| A13 | Radiator water level warning lamp |
| A14 | Central warning lamp |
| A15 | E/G coolant temperature warning lamp |
| A16 | T/M oil temperature warning lamp |
| A17 | D solenoid valve |
| A18 | 1st speed solenoid valve |
| A19 | E/G oil pressure warning lamp |
| A20 | Auto brake lamp |

| MCU | |
|---|---|
| A21 | Auto shift indicator lamp |
| A22 | Fuel level lamp (1/2) |
| A23 | Fuel level lamp (E) |
| A24 | 1st speed indication lamp |
| A25 | 2nd speed indication lamp |
| A26 | T/M oil filter warning lamp |
| A27 | Air cleaner warning lamp |
| A28 | Brake pressure warning lamp |
| A29 | Neutral indicator lamp |
| A30 | 3rd speed indication lamp |
| A31 | Fuel level lamp (1/4) |
| A32 | — |
| A33 | Fuel level lamp (3/4) |
| A34 | 4th speed indication lamp |
| B1 | H solenoid valve |
| B2 | — |
| B3 | — |
| B4 | R solenoid valve |
| B5 | Modulation valve |
| B6 | — |
| B7 | — |
| B8 | — |
| B9 | Buzzer |
| B10 | — |
| B11 | Back lamp relay |
| B12 | MCU fault relay |
| B13 | L solenoid valve |
| B14 | Auto brake solenoid valve |
| B15 | — |
| B16 | Communication RXD |
| B17 | — |
| B18 | Neutral relay |
| B19 | — |
| B20 | — |
| B21 | — |
| B22 | Communication TXD |
| B23 | — |
| B24 | Tachometer |
| B25 | — |
| B26 | — |

| MCU | |
|---|---|
| E1 | — |
| E2 | — |
| E3 | Power supply + 24 V |
| E4 | Power supply + 24 V |
| E5 | Power supply GND |
| E6 | Power supply GND |
| E7 | Power supply GND |
| E8 | Power supply GND |
| E9 | + 5 V output |
| E10 | — |
| E11 | — |
| E12 | — |
| E13 | — |
| E14 | — |
| E15 | ECM |
| E16 | Machine speed sensor |
| E17 | Power supply |
| E18 | — |
| E19 | — |
| E20 | MODM |
| E21 | — |
| E22 | — |
| E23 | — |
| E24 | Alternator |
| E25 | — |
| E26 | — |
| E27 | — |
| E28 | — |
| E29 | MODM |
| E30 | — |
| E31 | — |
| E32 | — |
| E33 | — |
| E34 | — |
| C1 | — |
| C2 | Brake oil pressure switch |
| C3 | E/G oil level switch |
| C4 | T/M mode selection |
| C5 | T/M oil temperature switch |
| C6 | Air cleaner clogging switch |

| MCU | |
|---|---|
| C7 | E/G coolant temperature switch |
| C8 | Emergency steering oil press. switch |
| C9 | Brake oil pressure diff. switch |
| C10 | — |
| C11 | — |
| C12 | — |
| C13 | — |
| C14 | T/M oil filter switch |
| C15 | Radiator water level switch |
| C16 | E/G oil pressure switch |
| C17 | Fuel level F switch |
| C18 | — |
| C19 | T/M pressure diff. sensor |
| C20 | Fuel level 1/2 switch |
| C21 | Fuel level E switch |
| C22 | FR 23 change point selection |
| C23 | F 34 change point selection |
| C24 | — |
| C25 | — |
| C26 | — |
| C27 | — |
| C28 | Fuel level 3/4 switch |
| C29 | Fuel level 1/4 switch |
| C30 | — |
| C31 | — |
| C32 | — |
| C33 | Ride control switch |
| C34 | — |
| D1 | Parking switch |
| D2 | Auto/Manual selection |
| D3 | Shift lever 2 |
| D4 | Shift lever R |
| D5 | Shift lever 3 |
| D6 | — |
| D7 | — |
| D8 | — |
| D9 | — |
| D10 | Shift lever 1 |
| D11 | Shift lever F |
| D12 | Shift lever A |

| MCU | |
|---|---|
| D13 | — |
| D14 | Downshift button |
| D15 | — |
| D16 | — |
| D17 | — |
| D18 | — |
| D19 | — |
| D20 | — |
| D21 | Declutch switch |
| D22 | — |
| D23 | — |
| D24 | — |
| D25 | — |
| D26 | — |


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