PART NO. TODEB-EN-00

HITACHI

Reliable solutions

# Technical Manual

## Operational Principle

# ZX
# 75US-5A
# 85US-5A

## Hydraulic Excavator

Service Manual consists of the following separate Part No.

| | |
|---|---|
| Technical Manual (Operational Principle) | : Vol. No.TODEB-EN |
| Technical Manual (Troubleshooting) | : Vol. No.TTDEB-EN |
| Workshop Manual | : Vol. No.WDEB-EN |
| Engine Manual | : Vol. No.ETADB-EN, EWADB-EN |

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# SECTION 1

# GENERAL

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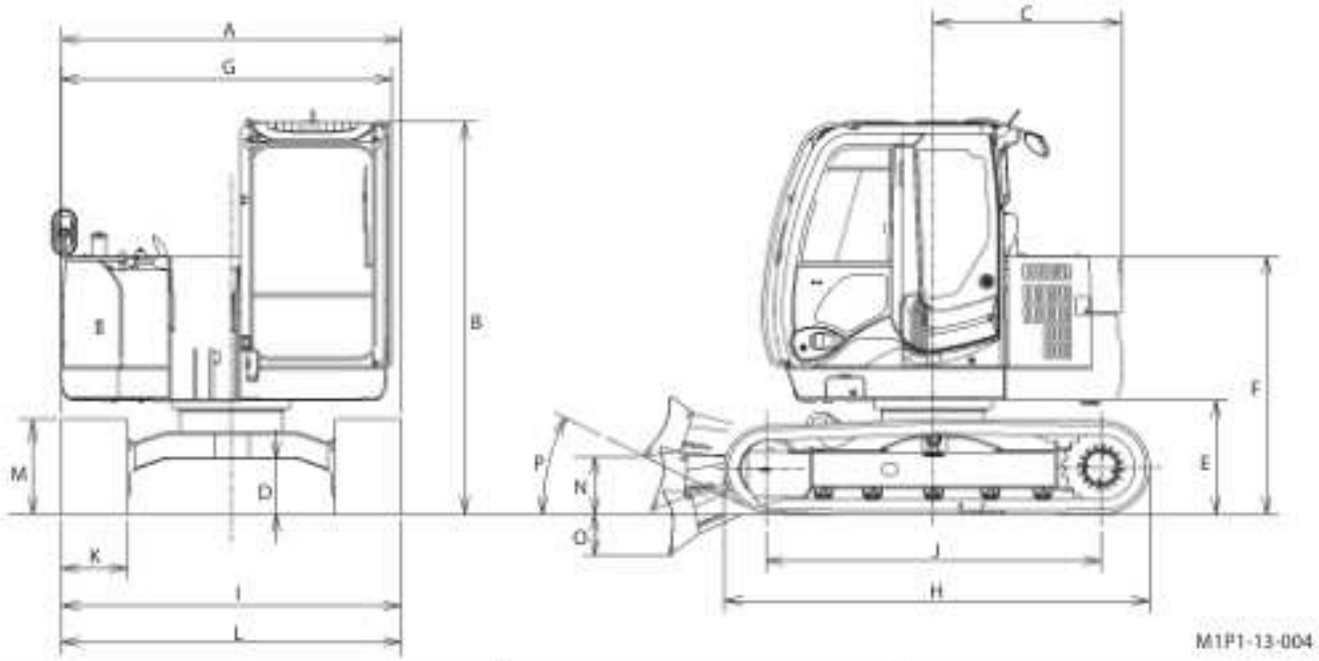
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## Specifications (with Offset Arm Front)




M1P1-13-004

| Model | Without Blade | With Blade |
|---|---|---|
| Front-End Attachment | Offset Boom 1.62 m (5 ft 4 in) Arm | |
| Bucket Capacity (Heaped) | PCSA 0.28 m³, CECE 0.24 m³ | |
| Operating Weight | 7980 kg (17600 lb) | 8550 kg (18900 lb) |
| Base Machine Weight | 6060 kg (13400 lb) | 6630 kg (14600 lb) |
| Engine | YANMAR 4TNV94L-ZWHBW 34.1 kW/2000 min⁻¹ (46.4 PS/2000 rpm) | |
| A: Overall Width (Excluding Rearview Mirrors) | 2320 mm (7 ft 7 in) | |
| B: Cab Height | 2690 mm (8 ft 10 in) | |
| C: Rear End Swing Radius | 1290 mm (4 ft 3 in) | |
| D: Minimum Ground Clearance | * 360 mm (1 ft 2 in) | |
| E: Counterweight Clearance | * 730 mm (2 ft 5 in) | |
| F: Engine Cover Height | * 1850 mm (6 ft 1 in) | |
| G: Overall Width of Upperstructure | 2260 mm (7 ft 5 in) | |
| H: Undercarriage Length | 2920 mm (9 ft 7 in) | |
| I: Undercarriage Width | 2320 mm (7 ft 7 in) | |
| J: Sprocket Center to Idle Center | 2290 mm (7 ft 6 in) | |
| K: Track Shoe Width | 450 mm (1 ft 6 in) | |
| L: Blade Width | - | 2320 mm (7 ft 7 in) |
| M: Blade Height | - | 460 mm (1 ft 6 in) |
| N: Blade Bottom Highest Position (above ground level) | - | * 360 mm (1 ft 2 in) |
| O: Blade Bottom Lowest Position (below ground level) | - | * 300 mm (1 ft 0 in) |
| P: Maximum Approach Angle | - | 26.8 degree |
| Ground Pressure | 33 kPa (0.33 kgf/cm², 4.8 psi) | 36 kPa (0.37 kgf/cm², 5.2 psi) |
| Offset Distance | 0 to 1150 mm (0 to 3 ft 9 in) | |
| Swing Speed | 10.5 min⁻¹ (rpm) | |
| Travel Speed | 5.0/3.1 km/h (3.1/1.9 mph) | |
| Gradeability | 35 degree (70 %) | |

*NOTE: * The dimensions do not include the height of the shoe lug.*



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### Pump Torque Decrease Control (Radiator Coolant Temperature)

Purpose:
When the coolant temperature increases, the pump torque decrease control (radiator coolant temperature) reduces the pump flow rate. Therefore, pump driving torque is decreased. Then, the engine overheating is prevented.

Operation:

1. When the coolant temperature is 100 °C or more, MC (2) activates the torque control solenoid valve (7).
2. The torque control solenoid valve (7) supplies the pilot pressure to regulator (6) according to the signal, and reduces the pump delivery flow rate.
3. Therefore, the engine overheating is prevented when the coolant temperature increases.

*NOTE: The pump torque decrease control (radiator coolant temperature) can be made operable or inoperable by MPDr. (11).*



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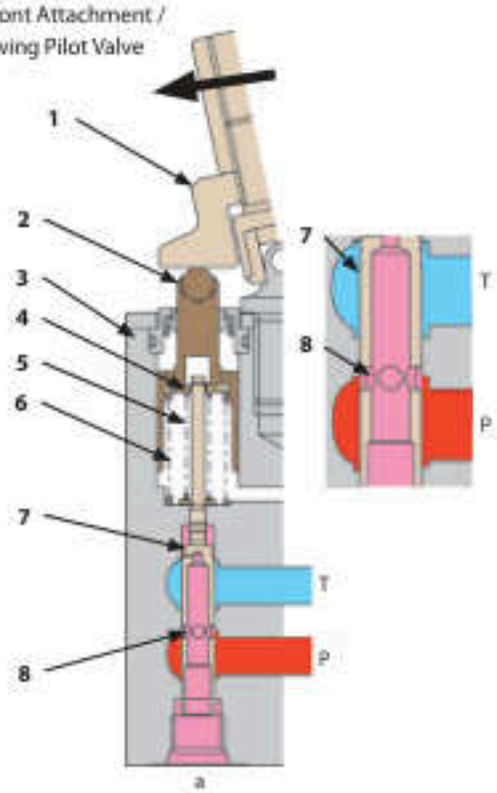
## CAN Circuit

CAN (Controller Area Network) is ISO Standards of the serial communication protocol.
Two networks (CAN bus (4)), CAN 0 (1) and CAN 1 (5) are equipped for this machine.
CAN 0 (1) is used for the engine control. CAN 1 (5) is used for the accessories.
CAN bus (4) consists of two harnesses, CAN-H (High) (2) and CAN-L (Low) (3).
Each controller judges the CAN bus (4) level due to potential difference between CAN-H (High) (2) and CAN-L (Low) (3).
Each controller arranges the CAN bus (4) level and sends the signal and data to other controllers.
In addition, termination resistors (120 Ω) (6) are installed to both ends of CAN bus (4).

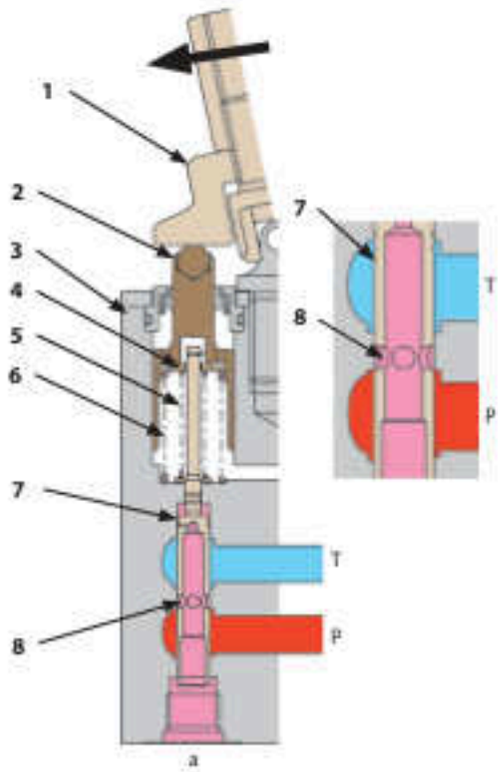


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Front Attachment / Swing Pilot Valve

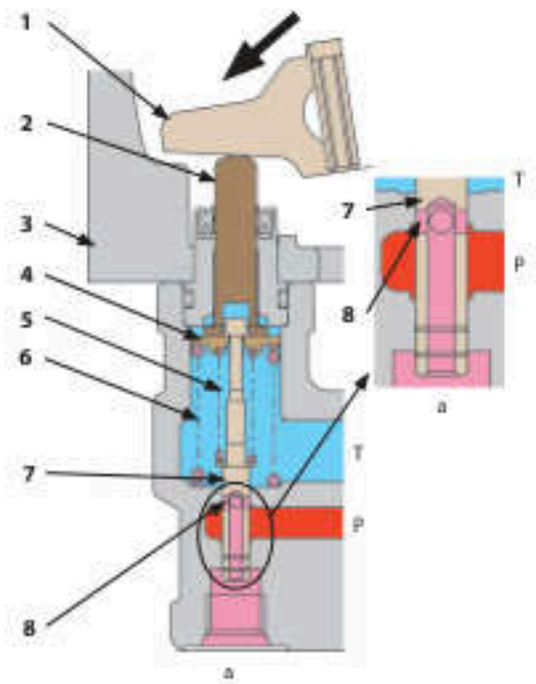



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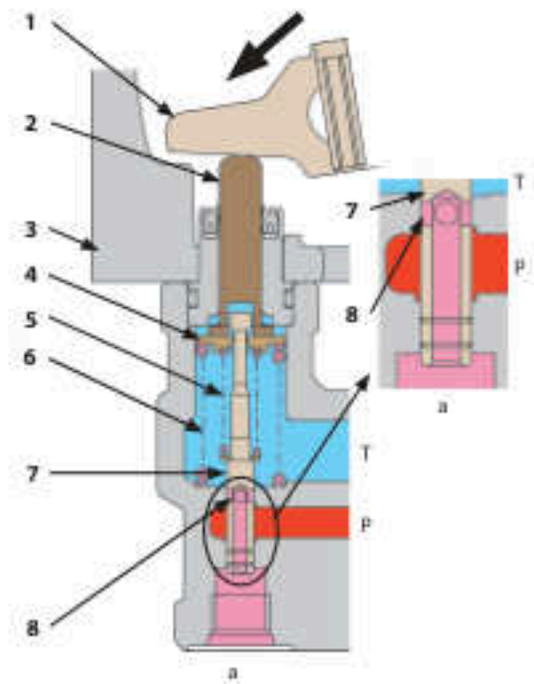



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Travel Pilot Valve




TPPP-03-04-012



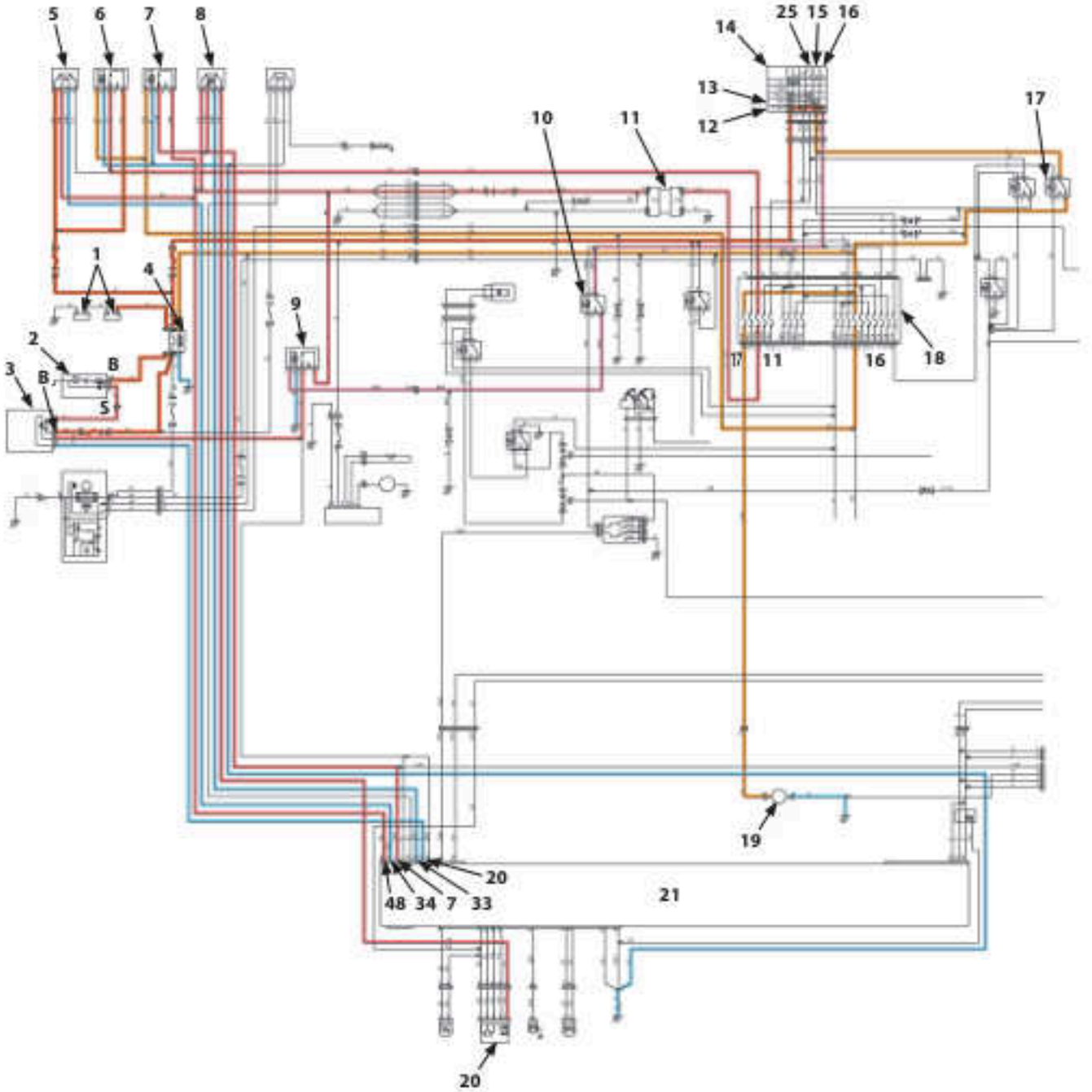

TPPP-03-04-013

P- Port P
T- Port T
a- Output Port

1- Cam
2- Pusher
3- Casing
4- Spring Guide
5- Balance Spring
6- Return Spring
7- Spool
8- Hole



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TDEB-02-05-013

1- Battery
2- Starter
3- Starter Relay 1
4- Battery Relay
5- Main Relay 1
6- Main Relay 2
7- IGN Relay
8- Actuator Relay
9- Starter Relay 2
10- Starter Cut Relay
11- DC/DC Converter
12- START Position
13- ON Position
14- Key Switch
15- Terminal M
16- Terminal ST
17- Key Switch ON Cut Relay
18- Fuse Box
19- Fuel Pump
20- Rack Actuator
21- ECU



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