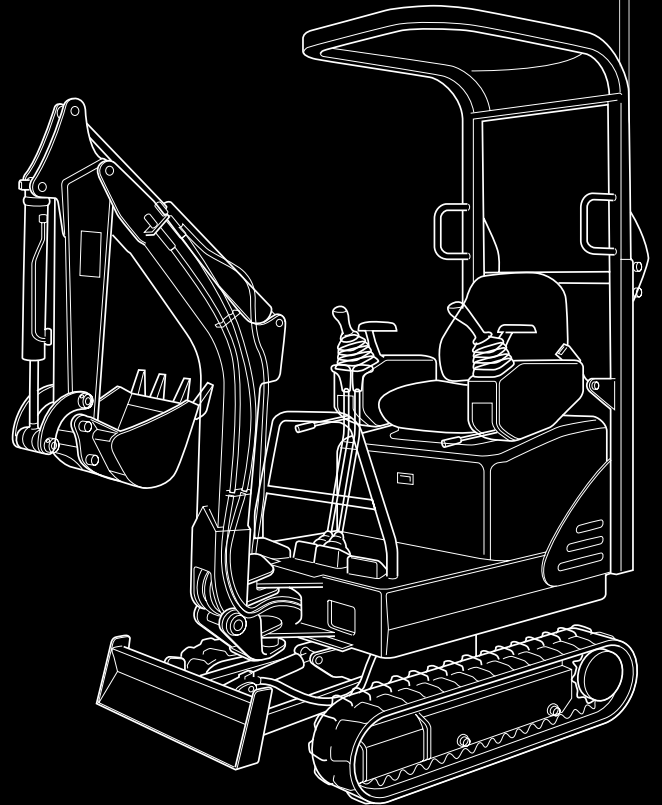


**H09D**

**HANIX**  
Japanese Craftsmanship



# Service Manual



## **INTRODUCTION**

To insure a long life for the machine and the engine and to prevent failure and problems, proper operation, maintenance and repairs are indispensable.

This service manual includes an “outline,” “structure and operation,” “inspection and adjustment,” “disassembly and assembly,” “standard maintenance,” and “repair and replacement of parts” of the machine which are necessary to carry out the inspections and repairs in the repair shop.

We hope that this manual helps you to efficiently and effectively carry out repairs by providing an accurate description of the product and the correct repair techniques.

## **CONTENTS**

1. Precautions on Maintenance
2. Outline
3. Attachment
4. Engine
5. Main Pump
6. Hydraulic Oil Filter
7. Control Valve
8. Joystick Valve (Pilot valve)
9. Solenoid Valve (Swing•PTO)
10. Slew Motor
11. Drive Motor
12. Hydraulic Cylinder
13. Swivel Joint
14. Selector Valve
15. Crawler
16. Idler
17. Sprocket
18. Track Roller
19. Electrical Equipment

# 1 PRECAUTIONS ON MAINTENANCE

## 1. Correct operation

Correct operation means to follow the correct “procedure” and “method.”

Procedure focuses on speed and accuracy of each job.

In the method, are addressed what type of facility, tools, instruments, materials, oil should be used, how and which part should be checked, adjusted or disassembled, and what matters to attend to.

## 2. Precautions on operation

### 1. Safety check

Check that stoppers and sleepers are correctly installed for the vehicle jack-up operation.

### 2. Preparation

Prepare all of the tools and inspect and adjust the instruments.

### 3. For efficiency

#### 1) Understand the state before disassembly.

What is the problem? Is disassembly absolutely necessary?

#### 2) Before disassembly

Determine whether match marks are necessary. For the electrical system, disconnect the cable from the battery terminal.

#### 3) Precautions for disassembly

In stead of checking all of the disassembled parts at once, check each part individually as it is disassembled. When removing the hydraulic unit or the hoses, mount a dust cap on the connection.

#### 4) Repair of disassembled parts

Keep the disassembled parts in order. Clearly distinguish the parts to be replaced with new parts from those to be reused. Packings, seals, rings, split pins must be replaced.

#### NOTE:

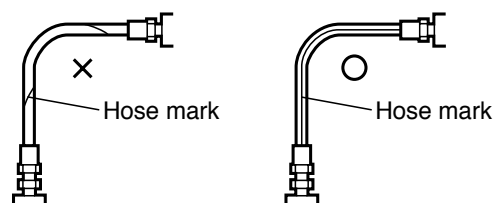
Electrical equipment, rubbers and V belts (which are easily affected by water and oil) must be handled carefully in order to prevent soiling them.

#### 5) Clean disassembled parts

Thoroughly clean the disassembled parts.

#### 6) Assembly

Perform the assembly correctly (tightening torque, application of Three Bond, screw lock, grease, use of seal tape, etc.). Also install the hose correctly.

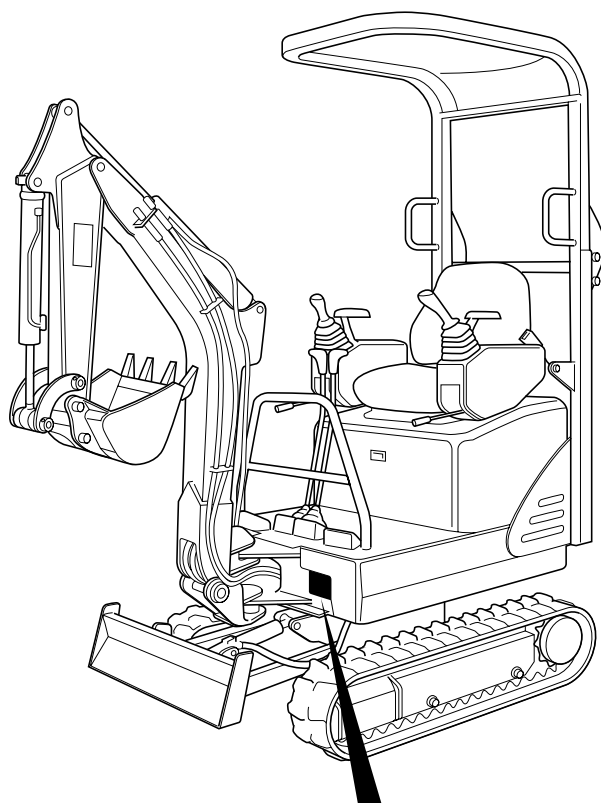


## **2** OUTLINE

### **CONTENTS**

- 2-1 Location of serial No.
- 2-2 Name of each part
- 2-3 Dimensions and specifications
- 2-4 Weight list
- 2-5 Oil and grease supply points
- 2-6 List of supply oil and grease
- 2-7 When to repair
- 2-8 Hydraulic circuit diagram

## 2-1 Location of Serial Number



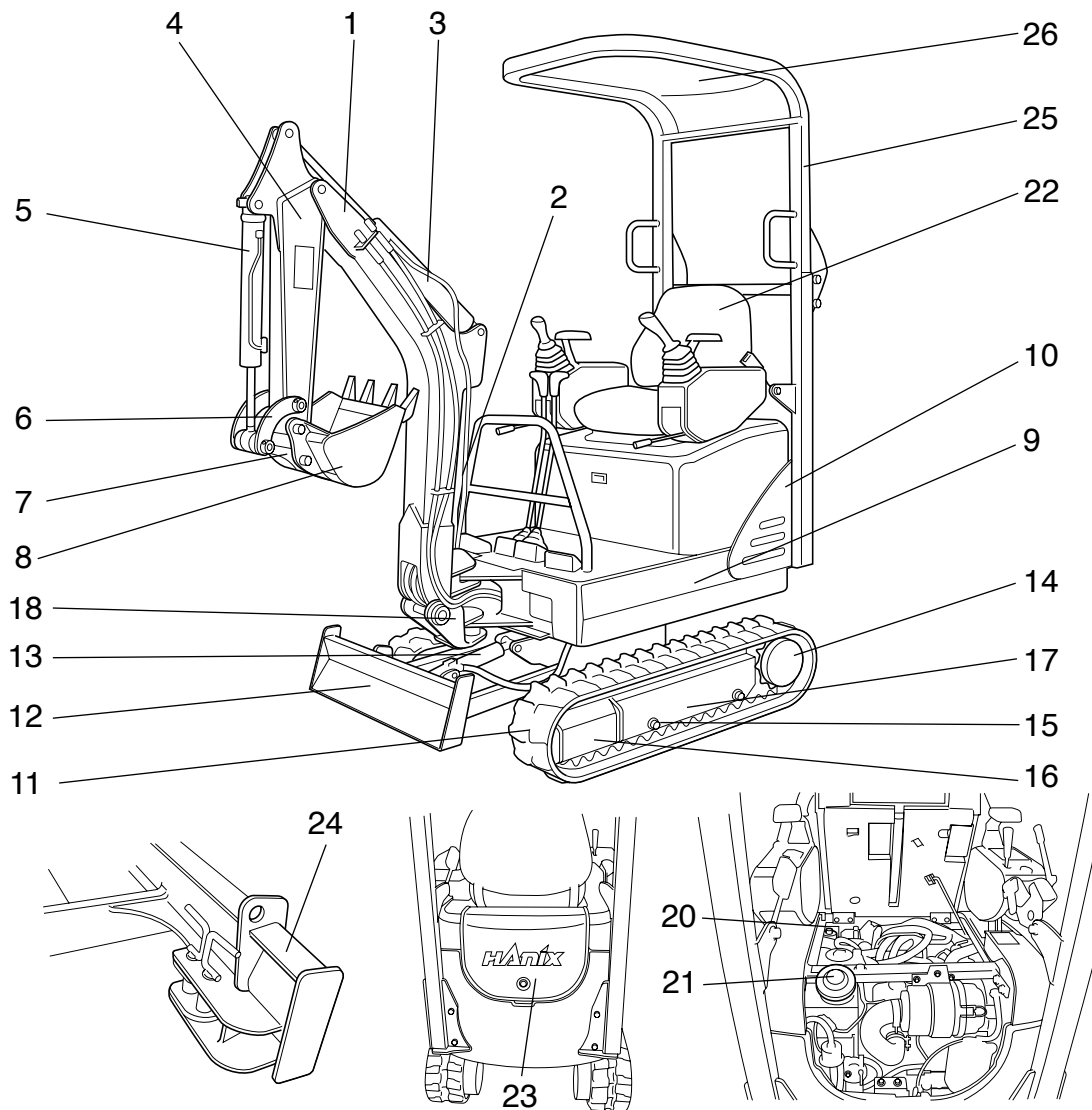
MACHINE MACHINE MACCHINA MAKUIME MASKIN	MODEL MODELLI/MODELLE MODELLO/MODELOS	←		CE
NO.				
WEIGHT/GEWICHT GEWICHT/POID PESOPESONWEKT			kg	
YEAR/JAAR BILUJAH/RÄNNEE ÄÄND/ÄNDJÄAR				
ENGINE MOTOR MOTEUR MOTORE MODOR	MODEL MODELLI/MODELLE MODELLO/MODELOS	←		MAX. DRAWBAR FULL
NO.				MAX. VERT. LOAD
POWER/VERMOGEN LEISTUNG/PUISSANCE POTENSIA/POTENSSA YTELSE			kW/	min <sup>-1</sup>

**HANIX EUROPE LTD.**  
Unit B Windmill Lane, Denton, Manchester M34 3SP, United Kingdom  
MADE IN JAPAN

Model name

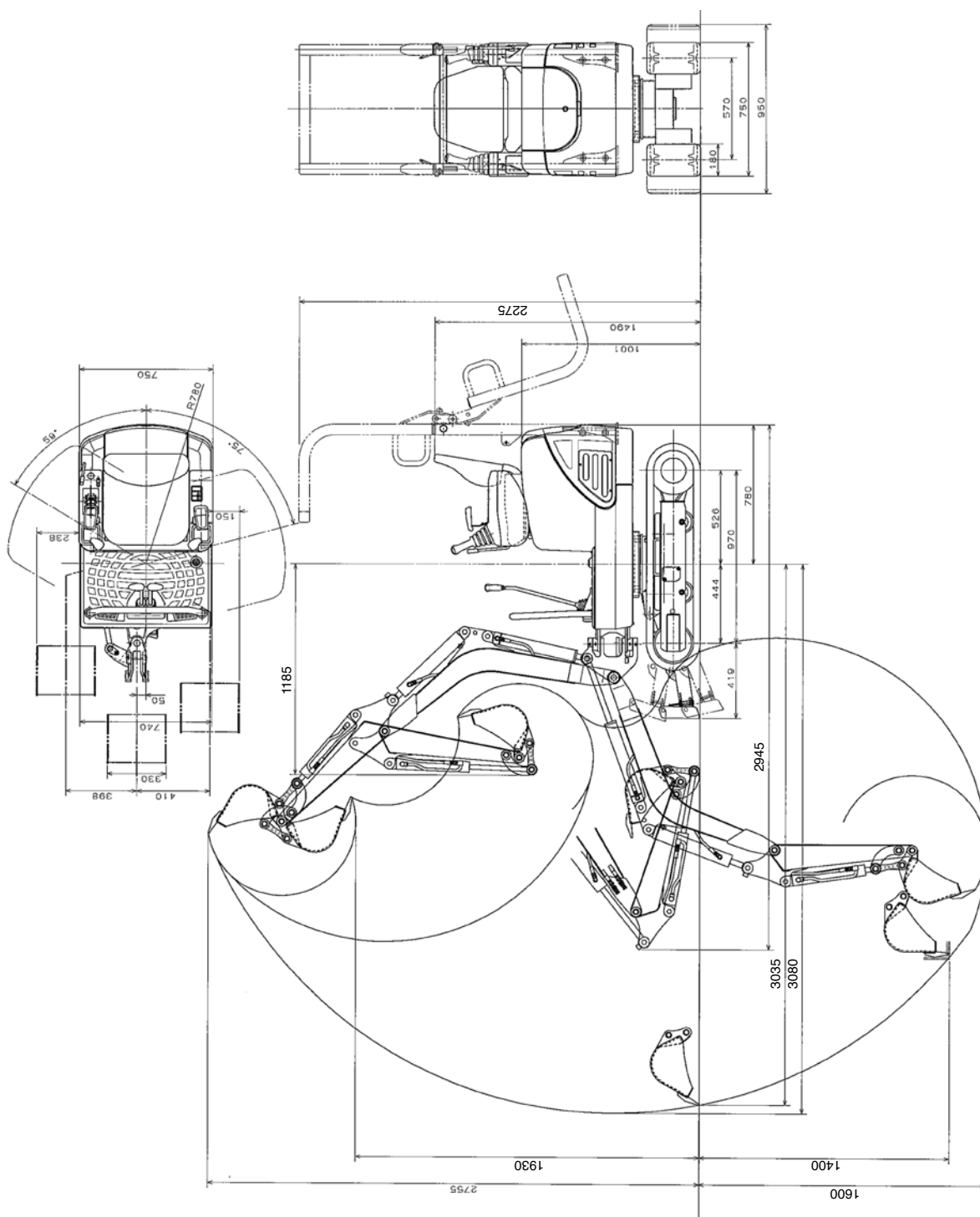
Serial No.

## 2-2 Name of each part



- |                     |                     |
|---------------------|---------------------|
| 1. Boom             | 2. Boom cylinder    |
| 3. Arm cylinder     | 4. Arm              |
| 5. Bucket cylinder  | 6. Bucket links     |
| 7. Dump link        | 8. Bucket           |
| 9. Swing frame      | 10. Counter weight  |
| 11. Crawler         | 12. Dozer blade     |
| 13. Dozer cylinder  | 14. Travel motor    |
| 15. Track roller    | 16. Front idler     |
| 17. Grease cylinder | 18. Swing post      |
| 19. Swing cylinder  | 20. Hydraulic tank  |
| 21. Fuel tank       | 22. Operator's seat |
| 23. Engine cover    | 24. Side blade      |
| 25. Roll bar        | 26. Canopy          |

## 2-3 Dimensions and Specifications





Model		H09D		
Machine weight	Roll bar rubber	kg	980	
	Canopy rubber	kg	990	
Standard bucket capacity/width		m <sup>3</sup> /mm	0.022/330	
Engine	Type		KUBOTA Z602	
	Displacement	cc	599	
	Rated output	Kw(PS)/min <sup>-1</sup>	7.8(10.6)/2400	
Dimensions	Overall length	mm	2,945	
	Overall width	mm	750<950	
	Overall height	mm	2,275	
Working range	Max. digging depth	mm	1,600	
	Max. vertical digging depth	mm	1,400	
	Max. digging height	mm	2,755	
	Max. dumping height	mm	1,930	
	Max. digging radius	mm	3,080	
	Reach at ground	mm	3,035	
	Min. turning radius	front	mm	1,185
		swing	mm	680
	Rear turning radius	mm	780	
Boom swing angle L/R	deg	L75/R59		
Performance	Max. digging force(Bucket)	kN	8.3	
	Max. digging force(Arm)	kN	5.8	
	Traction force	kN	7.8	
	Travelling speed (low)/(high)	km/h	1.8/3.5	
	Slew speed	rpm	8.1	
	Gradeability	Angle	30°	
Hydraulic system	Pump	Type	Piston2+Gear1	
		Oil flow	lit/min	10.8/10.8/7.2
	PTO	Oil flow	lit/min	21.6
	Main relief pressure	Mpa	16.2/16.2/3	
Underbody	Dozer blade width×heigh		mm	750-950×200
	Shoe width×tumbler center		mm	180×970
	Ground pressure	Roll bar rubber	kPa	29.3
		Canopy rubber		29.3
	Type of travelling motor			Piston shoe-in type
	Crawler tension system			Grease cylinder
Capacity	Hyd. Tank capacity		lit	10.5
	Fuel tank capacity		lit	12.2
	Engine oil capacity		lit	2.5
	Cooling water capacity		lit	5.0
Noise level Lwa/Lpa		d	93/83	

## 2-4 Weight list

Unit: kg

Part name		Part name	
Boom	33	Extension cylinder	4.2
Arm	17.2	Slew bearing	13.8
Bucket	15.3	Track frame R	31.5
Dump link	2.9	Track frame L	29.8
Bucket link(R)	1.0	Center frame	27.5
Bucket link(L)	0.9	Selector valve	1.7
Boom joint pin	1.2	Dozer	25
Arm joint pin	0.6	Crawler (rubber)	28 × 2
Bucket pin	0.7	Idler	4.5 × 8
Swing post	17	Adjust cylinder	1.6
Swing post pin	0.7 × 2	Track roller	2.6 × 4
Swing frame	87	Sprocket	2.5 × 2
Counter weight	87	Drive motor	16 × 2
Hydraulic oil tank	11.8	Slew motor	9.2
Fuel tank	7.6	Engine	60
Engine cover	8.8	Radiator	3
Floor cover R	4.2	Battery	11.0
Floor cover L	4.2	Seat	8.4
Side cover R	3.9	Swivel joint	9.2
Side cover L	4.7	Pump	10
Boom cylinder	10	Control valve	11
Arm cylinder	10.8	Roll bar	52
Bucket cylinder	8	Canopy	66
Swing cylinder	6.3	J/S valve	2.5 × 2
Dozer cylinder	5.5	Solenoid valve	4