

# Shop Manual

VEBM090100

# WF550-3 WF550T-3

## TRASH COMPAKTOR

### SERIAL NUMBER

WF550-3  
WF550T-3

W089-50001 AND UP  
W090-50001 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.
- WF550-3, WF550T-3 mount the S6D140-2 engine.  
For details of the engine, see the 6D140-2 Series Engine Shop Manual



# CONTENTS

No. of page

<b>00</b>	<b>SAFETY</b> .....	<b>00-1</b>
<b>01</b>	<b>GENERAL</b> .....	<b>01-1</b>
<b>10</b>	<b>STRUCTURE AND FUNCTION</b> .....	<b>10-1</b>
<b>20</b>	<b>TESTING AND ADJUSTING</b> .....	<b>20-1</b>
<b>30</b>	<b>DISASSEMBLY AND ASSEMBLY</b> .....	<b>30-1</b>
<b>40</b>	<b>MAINTENANCE STANDARD</b> .....	<b>40-1</b>
<b>90</b>	<b>OTHERS</b> .....	<b>90-1</b>





---

# 00 SAFETY

---


<b>Safety notice</b> .....	00-2
<b>Foreword</b> .....	00-6
<b>How to read the shop manual</b> .....	00-7
Volumes .....	00-7
Distribution and updating .....	00-7
Filing method .....	00-7
Symbols .....	00-8
<b>Hoisting instructions</b> .....	00-9

# Safety notice



## Important Safety Notice

Proper service and repair is extremely important for safe machine operation. Some of the described service and repair techniques require the use of tools specially designed by Komatsu for the specific purpose.

To prevent injury to workers, the symbol  is used to mark safety precautions in this manual. The cautions accompanying these symbols must always be followed carefully. If any dangerous situation arises or may possibly arise, first consider safety, and take the necessary actions to deal with the situation.



## General Precautions

Mistakes in operation are extremely dangerous. Read the **OPERATION AND MAINTENANCE MANUAL** carefully before operating the machine! Always follow the safety rules valid in your country carefully!

1. Before carrying out any greasing or repairs, read all the precautions given on the decals which are fixed to the machine.
2. When carrying out any operation, always wear safety shoes and helmet. Do not wear loose work clothes, or clothes with buttons missing.
  - Always wear safety glasses when hitting parts with a hammer.
  - Always wear safety glasses when grinding parts with a grinder, etc.
3. If welding repairs are needed, always have a trained, experienced welder carry out the work. When carrying out welding work, always wear welding gloves, apron, glasses, cap and other clothes suited for welding work.
4. When carrying out any operation with two or more workers, always agree on the operating procedure before starting. Always inform your fellow workers before starting any step of the operation. Before starting work, hang UNDER REPAIR signs on the controls in the operator's compartment.
5. Keep all tools in good condition and learn the correct way to use them.
6. Decide a place in the repair workshop to keep tools and removed parts. Always keep the tools and parts in their correct places. Always keep the work area clean and make sure that there is no dirt or oil on the floor. Never smoke while working. Smoke only in the areas provided for smoking.

## **Preparations for work**

1. Before adding oil or making any repairs, park the machine on hard, level ground, and block the wheels or tracks to prevent the machine from moving.
2. Before starting work, lower blade, ripper, bucket or any other work equipment to the ground and install the safety bar on the frame. If this is not possible, insert the safety pin or use blocks to prevent the work equipment from falling. In addition, be sure to lock all the control levers and hang warning signs on them.
3. When disassembling or assembling, support the machine with blocks, jacks or stands before starting work.
4. Remove all mud and oil from the steps or other places used to get on and off the machine. Always use the handrails, ladders or steps when getting on or off the machine. Never jump on or off the machine. If it is impossible to use the handrails, ladders or steps, use a stand to provide safe footing.

## Precautions during work

1. When measuring hydraulic pressure, check that the measuring tool is correctly assembled before taking any measurements.
2. When removing the oil filler cap, drain plug or hydraulic pressure measuring plugs, loosen them slowly to prevent the oil from spurting out.  
Before disconnecting or removing components of the oil, water or air circuits, first remove the pressure completely from the circuit.
3. The water and oil in the circuits are hot when the engine is stopped, so be careful not to get burned.  
Wait for the oil and water to cool before carrying out any work on the oil or water circuits.
4. Before starting work, remove the leads from the battery. Always remove the lead from the negative (-) terminal first.
5. When raising heavy components, use a hoist or crane.  
Check that the wire rope, chains and hooks are free from damage.  
Always use lifting equipment which has ample capacity.  
Install the lifting equipment at the correct places. Use a hoist or crane and operate slowly to prevent the component from hitting any other part.  
Do not work with any part still raised by the hoist or crane.
6. When removing covers which are under internal pressure or under pressure from a spring, always leave two bolts in position on opposite sides. Slowly release the pressure, then slowly loosen the bolts to remove.
7. When removing components, be careful not to break or damage the wiring. Damaged wiring may cause electrical fires.
8. When removing piping, stop the fuel or oil from spilling out. If any fuel or oil drips onto the floor, wipe it up immediately. Fuel or oil on the floor can cause you to slip, or can even start fires.
9. As a general rule, do not use gasoline to wash parts. In particular, use only the minimum of gasoline when washing electrical parts. Do not smoke!
10. Be sure to assemble all parts again in their original places.  
Replace any damaged parts with new parts.  
  
When installing hoses and wires, be sure that they will not be damaged by contact with other parts when the machine is being operated.
11. When installing high pressure hoses, make sure that they are not twisted.  
Damaged tubes are dangerous, so be extremely careful when installing tubes for high pressure circuits. Also, check that connecting parts are correctly installed.

12. When aligning two holes, never insert your fingers or hand. Be careful not to get your fingers caught in a hole.
13. When assembling or installing parts, always use the specified tightening torques. When installing protective parts such as guards, or parts which vibrate violently or rotate at high speed, be particularly careful to check that they are installed correctly.

# Foreword

## General

This shop manual has been prepared as an aid to improve the quality of repairs by giving the service personnel an accurate understanding of the product and by showing them the correct way to perform repairs and make judgements. Make sure you understand the contents of this manual and use it to full effect at every opportunity.

This shop manual mainly contains the necessary technical information for operations performed in a service workshop. For ease of understanding, the manual is divided into the following chapters; these chapters are further divided into the each main group of components:

## Structure and function

This section explains the structure and function of each component. It serves not only to give an understanding of the structure, but also serves as reference material for troubleshooting.

## Testing and adjusting

This section explains checks to be made before and after performing repairs, as well as adjustments to be made at completion of the checks and repairs. Troubleshooting charts correlating "Problems" to "Causes" are also included in this section.

## Disassembly and assembly

This section explains the order to be followed when removing, installing, disassembling or assembling each component, as well as precautions to be taken for these operations.

## Maintenance standard

This section gives the judgement standards when inspecting disassembled parts.

## NOTE

The specifications contained in this shop manual are subject to change at any time and without any advance notice. Use the specifications given in the book with the latest date.

# How to read the shop manual

## Volumes

Shop manuals are issued as a guide to carrying out repairs.

## Distribution and updating

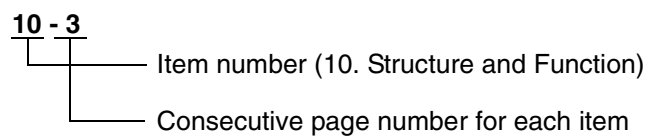
Any additions, amendments or other changes will be sent to Komatsu distributors.

Get the most up-to-date information before you start any work.

## Filing method

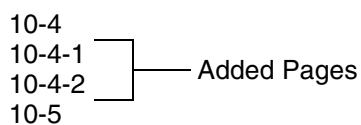
1. See the page number on the bottom of the page. File the pages in correct order.
2. Following examples show how to read the page number.

Example 1 (Chassis volume):










3. Additional pages: Additional pages are indicated by a hyphen (-) and number after the page number. File as in the example.

Example:



## Symbols

So that the shop manual can be of ample practical use, important safety and quality portions are marked with the following symbols:

Symbol	Item	Remarks
	Safety	Special safety precautions are necessary when performing the work.
	Caution	Special technical precautions or other precautions for preserving standards are necessary when performing the work.
	Weight	Weight of parts of systems. Caution necessary when selecting hoisting wire, or when working posture is important, etc.
	Tightening torque	Places that require special attention for the tightening torque during assembly.
	Coat	Places to be coated with adhesives and lubricants, etc.
	Oil, water	Places where oil, water or fuel must be added, and the capacity.
	Drain	Places where oil or water must be drained, and quantity to be drained.



# Hoisting instructions



**Heavy parts (25kg or more) must be lifted with a hoist, etc. In the DISASSEMBLY AND ASSEMBLY section, every part weighing 25 kg or more is indicated clearly with the symbol:**



If a part cannot be smoothly removed from the machine by hoisting, the following checks should be made:

1. Check for removal of all bolts fastening the part to the relative parts.
2. Check for existence of another part causing interference with the part to be removed.

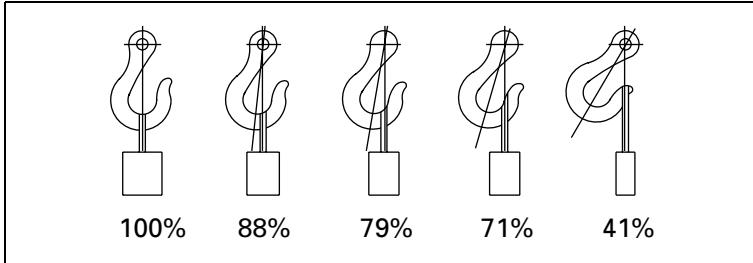
## Wire ropes

1. Use adequate ropes depending on the weight of parts to be hoisted, referring to the table below:
  - The allowable load in tons, is given by vertical tensible force.
  - The allowable load value is estimated to be one-sixth or one-seventh of the breaking strength of the rope used.

Wire ropes: (Standard "Z" or "S" twist ropes without galvanizing)	
Rope diameter (mm)	Allowable load (tons)
10	1.0
11.2	1.4
12.5	1.6
14	2.2
16	2.8
18	3.6
20	4.4
22.4	5.6
30	10.0
40	18.0
50	28.0
60	40.0

2. Sling wire ropes from the middle portion of the hook.

Slings near the edge of the hook may cause the rope to slip off the hook during hoisting, and a serious accident can result. Hooks have maximum strength at the middle portion.



3. Do not sling a heavy load with one rope alone, but sling with two or more ropes symmetrically wound onto the load.



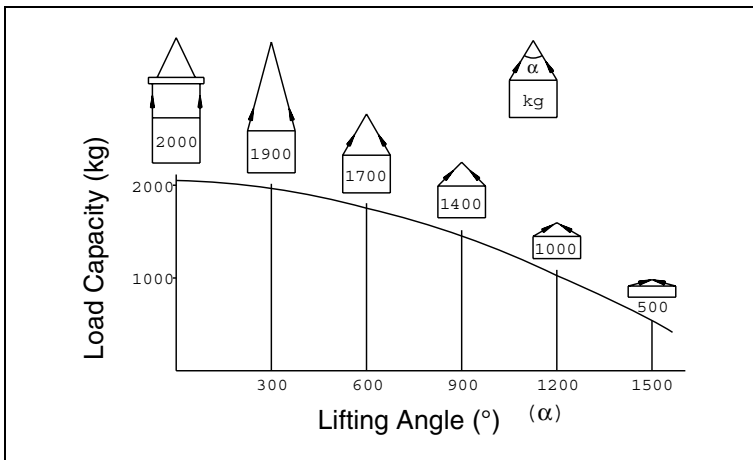
**Slings with one rope may cause turning of the load during hoisting, untwisting of the rope, or slipping of the rope from its original winding position on the load, which can result in a dangerous accident.**

4. Do not sling a heavy load with ropes forming a wide hanging angle from the hook.

When hoisting a load with two or more ropes, the force subjected to each rope will increase with the hanging angles.

The table below shows the variation of allowable load (kg) when hoisting is made with two ropes, each of which is allowed to sling up to 1000 kg vertically, at various hanging angles.

When two ropes sling a load vertically, up to 2000 kg of total weight can be suspended. This weight becomes 1000 kg when two ropes make a 120° hanging angle. On the other hand, two ropes are subjected to an excessive force as large as 4000 kg if they sling a 2000 kg load at a lifting angle of 150°.



---

# 01 GENERAL

---

<b>Specifications</b> .....	01-2
WF550-3 .....	01-2
WF550T-3 .....	01-4
<b>Weight table</b> .....	01-6
WF550-3 .....	01-6
WF550T-3 .....	01-7

# Specifications

## WF550-3

Machine model			WF550-3	
Serial No			50001 and up	
Weight	Operating weight		kg	
	Distribution (front)		kg	
	Distribution (rear)		kg	
Performance	Bucket capacity (piled)		m <sup>3</sup>	
	Rated load		kN {kg}	
	Travel speed	FORWARD 1st	km/h	6.7
		FORWARD 2nd	km/h	12.0
		FORWARD 3rd	km/h	20.2
		FORWARD 4th	km/h	33.0
		REVERSE 1st	km/h	7.5
		REVERSE 2nd	km/h	13.4
		REVERSE 3rd	km/h	22.5
		REVERSE 4th	km/h	36.1
	Max. rimpull	FORWARD	kN {kg}	274.6 {28,000}
REVERSE		kN {kg}	251.1 {25,600}	
Gradeability		deg	25	
Min. turning radius	Center of outside wheel	mm		
	Outside portion of chassis (with tooth)	mm		
Engine	Model		S6D140E-2D	
	Type		4-cycle, water-cooled, in-line, 6-cylinder, direct injection, with turbocharger	
	No. of cylinders-bore × stroke		mm 6-140 × 165	
	Piston displacement		l {cc} 15.2 {15,200}	
	Performance	Flywheel horsepower		kW/rpm {HP/rpm} 235/2,100 {315/2,100}
		Maximum torque		Nm/rpm {kgm/rpm} 1,373/1,400 {140/1,400}
		Fuel consumption ratio		g/kW·h {g/HP·h} 207 {154}
		High idling speed		rpm 2,300
		Low idling speed		rpm 725
	Starting motor		24V 11kW	
Alternator		24V 50A		
Battery		12V 170Ah × 2		
Power train	Torque converter		3-element, 1-stage, single-phase (TCA40-1C)	
	Transmission		Planetary gear, constant-mesh multiple-disc, hydraulically actuated, modulation type	
	Reduction gear		Spiral bevel gear, splash lubrication	
	Differential		Straight bevel gear	
	Final drive		Planetary gear single stage, splash lubrication	

Machine model			WF550-3		
Serial No			50001 and up		
Wheels, rims	Drive type			Front/rear-wheel drive	
	Front axle			Fixed-frame, full-floating	
	Rear axle			Center pin support type, full-floating	
	Shape of front and rear rims	mm			
	Number of feet (Per rim)	Piece			
	Balance capacity (Per rim)	l			
Brakes	Main brake			Front/rear wheel braking, separate front/rear wheel, wet disc, hydraulically actuated	
	Parking brake			Drive shaft, wet type disc brake Hydraulically released spring type	
Steering system	Type			Articulated type	
	Structure			Fully hydraulically power steering	
Hydraulic system	Hydraulic pump Delivery	Work equipment pump	l/min	348 (Gear type: SAR(4) - 160)	
		Switch pump	l/min	135 (Gear type: SAR(3) - 63)	
		Steering pump	l/min	172 (Gear type: SAR(3) - 80)	
		PPC, brake pump	l/min	60 (Gear type: SAR(1) - 28)	
	Control valve	Main control valve			2-spool type
		Set pressure	MPa {kg/cm <sup>2</sup> }		20.6 {210}
		Steering valve			Spool type
		Set pressure	MPa {kg/cm <sup>2</sup> }		20.6 {210}
	Cylinder	Steering cylinder			Reciprocating piston
		No. - bore × stroke	mm		2 - 110 - 486
		Boom cylinder			Reciprocating piston
		No. - bore × stroke	mm		2 - 200 × 839
Bucket cylinder				Reciprocating piston	
No. - bore × stroke	mm		1 - 225 × 613		
Work equipment	Link type			Single link	
	Bucket edge type				

**WF550T-3**

Machine model			WF550-T3		
Serial No			50001 and up		
Weight	Operating weight		kg		
	Distribution (front)		kg		
	Distribution (rear)		kg		
Performance	Travel speed	FORWARD 1st	km/h	6.7	
		FORWARD 2nd	km/h	12.0	
		FORWARD 3rd	km/h	20.2	
		FORWARD 4th	km/h	33.0	
		REVERSE 1st	km/h	7.5	
		REVERSE 2nd	km/h	13.4	
		REVERSE 3rd	km/h	22.5	
		REVERSE 4th	km/h	36.1	
	Max. rimpull	FORWARD	kN {kg}	274.6 {28,000}	
		REVERSE	kN {kg}	251.1 {25,600}	
Gradeability		deg	25		
Min. turning radius	Center of outside wheel	mm	6,160		
	Outside portion of chassis	mm	7,390		
Engine	Model		S6D140E-2D		
	Type		4-cycle, water-cooled, in-line, 6-cylinder, direct injection, with turbocharger		
	No. of cylinders-bore × stroke		mm	6-140 × 165	
	Piston displacement		l {cc}	15.2 {15,200}	
	Performance	Flywheel horsepower		kW/rpm {HP/rpm}	235/2,100 {315/2,100}
		Maximum torque		Nm/rpm {kgm/rpm}	1,373/1,400 {140/1,400}
		Fuel consumption ratio		g/kW·h {g/HP·h}	207 {154}
		High idling speed		rpm	2,300
		Low idling speed		rpm	725
	Starting motor		24V 11kW		
Alternator		24V 50A			
Battery		12V 170Ah × 2			
Power train	Torque converter		3-element, 1-stage, single-phase (TCA40-1C)		
	Transmission		Planetary gear, constant-mesh multiple-disc, hydraulically actuated, modulation type		
	Reduction gear		Spiral bevel gear, splash lubrication		
	Differential		Straight bevel gear		
	Final drive		Planetary gear single stage, splash lubrication		

Machine model			WF550-T3		
Serial No			50001 and up		
Wheels, rims	Drive type		Front/rear-wheel drive		
	Front axle		Fixed-frame, full-floating		
	Rear axle		Center pin support type, full-floating		
	Shape of front and rear rims		mm		
	Number of feet (Per rim)		Piece		
	Balance capacity (Per rim)		l		
Brakes	Main brake		Front/rear wheel braking, separate front/rear wheel, wet disc, hydraulically actuated		
	Parking brake		Drive shaft, wet type disc brake Hydraulically released spring type		
Steering	Type		Articulated type		
	Structure		Fully hydraulically power steering		
Hydraulic system	Hydraulic pump Delivery	Work equipment pump	l/min	172 (Gear type: SAR(3) - 80)	
		Switch pump	l/min	135 (Gear type: SAR(3) - 63)	
		Steering pump	l/min	172 (Gear type: SAR(3) - 80)	
		PPC, brake pump	l/min	60 (Gear type: SAR(1) - 28)	
	Control valve	Main control valve		2-spool type	
		Set pressure		MPa {kg/cm <sup>2</sup> }	20.6 {210}
		Steering valve		Spool type	
		Set pressure		MPa {kg/cm <sup>2</sup> }	20.6 {210}
	Cylinder	Steering cylinder		Reciprocating piston	
		No. - bore x stroke		mm	2 - 110 - 486
Lift cylinder		Reciprocating piston			
No. - bore x stroke		mm	1 - 140 x 1020		
Dozing equipment	Blade width		mm		
	Blade height		mm		
	Max. lift above ground		mm		
	Max. drop below ground		mm		

## Weight table



This weight table is a guide for use when transporting or handling components.

### WF550-3

Unit: kg

Machine model	WF550-3
Serial Number	50001 and up
Engine assembly	1,520
Radiator assembly	300
Torque converter assembly	215
Transmission assembly	930
Damper	91
Upper drive shaft	18
Center drive shaft	33
Front drive shaft	45
Rear drive shaft	41
Center support	42
Front axle assembly	2,480
Rear axle assembly	2,241
Front differential assembly	268
Rear differential assembly	272
Planetary carrier assembly (1 piece)	62
Wheel hub assembly (1 piece)	147
Axle pivot (Rear axle)	94/114
Steel wheel (1 piece)	
Steering valve	23.5
Orbit-roll valve	5.2
Steering cylinder (1 piece)	47
Brake valve (Tandem)	8.5
Brake valve (Single)	5.3
Hydraulic tank	290

Machine model	WF550-3
Serial Number	50001 and up
Hydraulic pump	20.3
Switch and PPC pumps	19
Steering pump	12.2
PPC valve	3.5
Main control valve	90
Lift cylinder	272
Bucket cylinder	286
Engine hood	225
Front frame	2,274
Rear frame	2,530
Bucket link (with bushing)	106
Bellcrank (with bushing)	522
Boom (with bushing)	
Bucket (with teeth)	
Rear bumper	440
Fuel tank	313
Battery (1 piece)	53
Cab assembly	355
Air conditioner unit	28
Operator's seat	39
Floor, dash, console	214