

KOBELCO

SERVICE MANUAL

HYDRAULIC EXCAVATOR

SK100

SK120

SK120LC

Applicable: SK100 YWU1001~
SK120 LPU1001~
SK120LC YPU1001~

SHOP MANUAL

model

YWU LPU · YPU

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YPU01

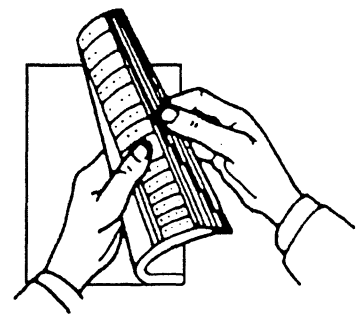
YPU03

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○How to Index each Shop Manual Section
The GENERAL of this shop manual consists of 8 headings as shown above. Each section can be easily referred to by indexes appended to the margin of the page as indicated on the right. Please use the indexes for speedy reference.



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GENERAL

YWU
LPU
YPU

List of Shop Manual GENERAL Section

Index No.	Title	Book Code No.		
		Distribution Year - Month		
YPU01	SPECIFICATION	S5YPU0105E 1995-01		
—	OPERATION	YPUK95S001OM Refer to Operators manual		
YPU03	LOCATION AND WEIGHT OF COMPONENTS	S5YPU0305E 1995-01		
YPU04	MAINTENANCE STANDARDS AND TEST PROCEDURES	S5YPU0405E 1995-01		
—	PREVENTIVE MAINTENANCE	YPUK95S001OM Refer to Operators manual		
YPU07	WORKING STANDARDS	S5YPU0705E 1995-01		
	Applicable Machines	YWU1001~ LPU1001~ YPU1001~		

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SHOP MANUAL

Book code No. S5 YPU01 05E

YWU LPU · YPU

YPU01

SPECIFICATION

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Applicable Machines

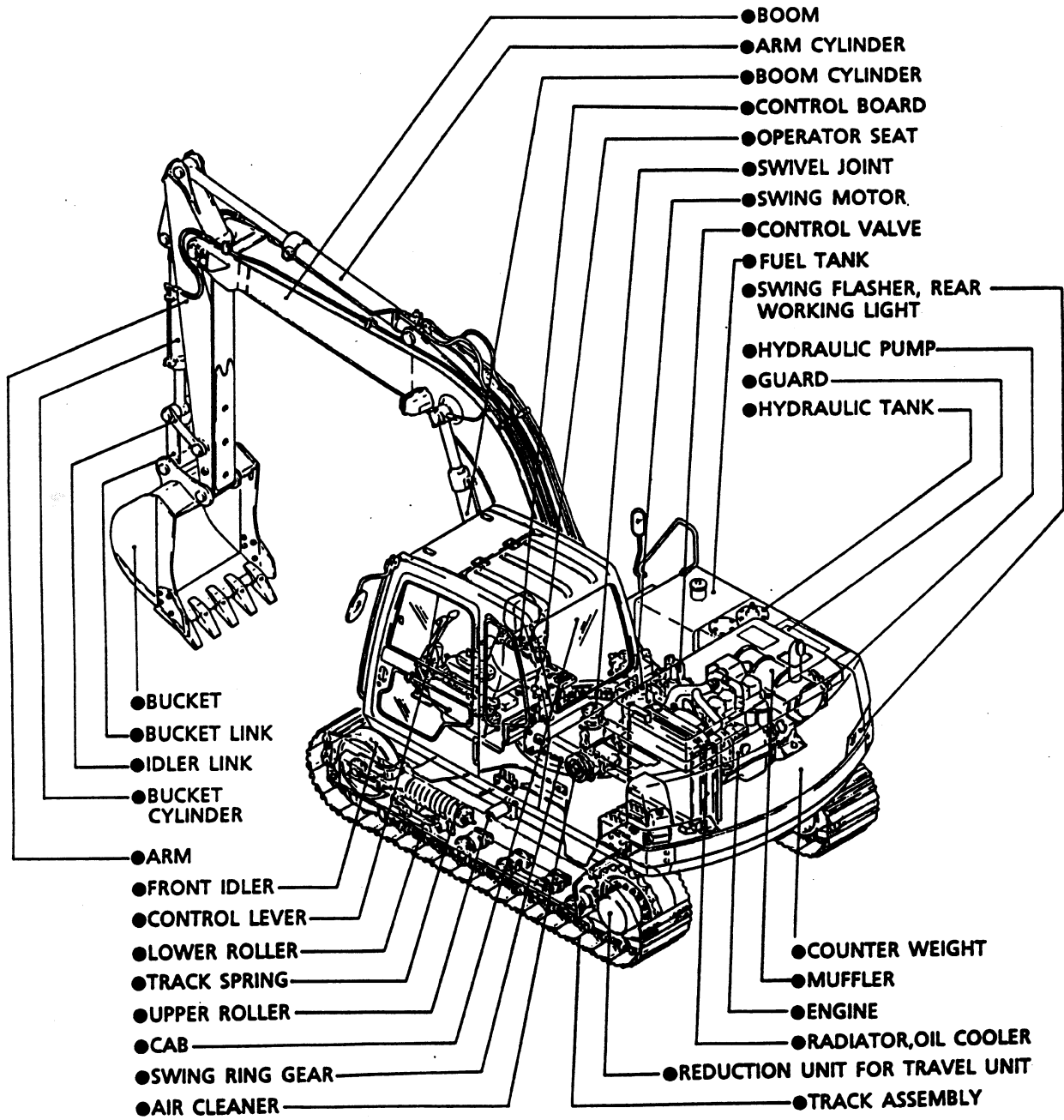
YWU1001~

LPU1001~

YPU1001~

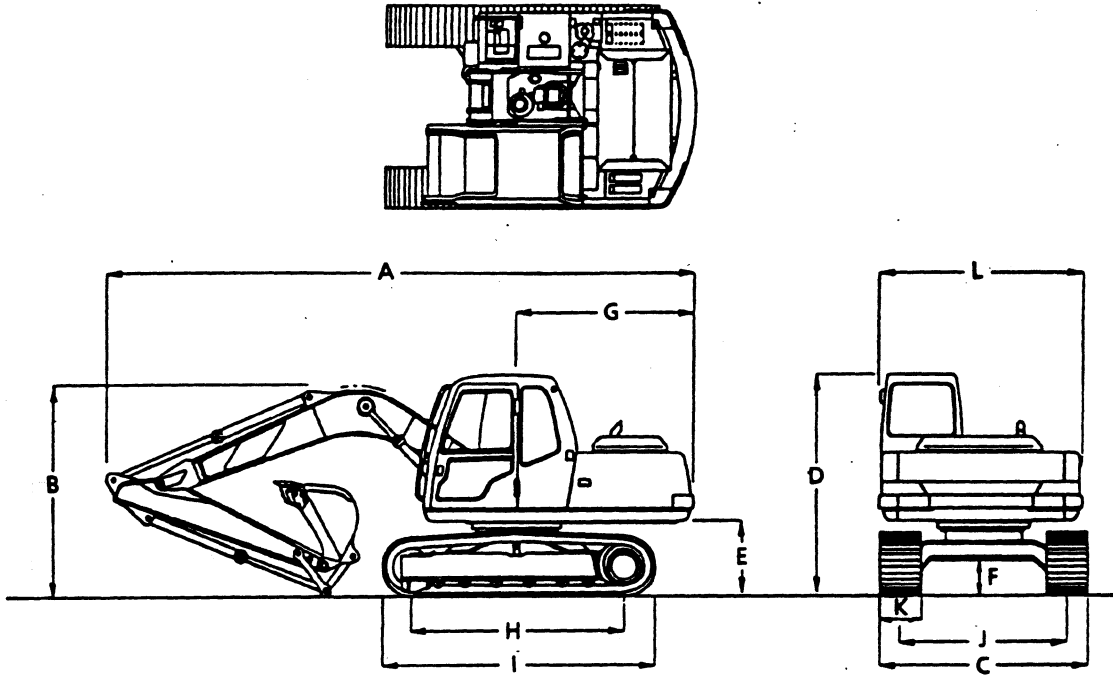
Revision	Date of Issue	Remarks	
First edition	January, 1995	S5YPU0105E	K

1. LOCATION OF COMPONENTS



2. GENERAL DIMENSIONS

■ YWU



		Unit : m (ft · in)		
Arm length		1.9m (6'3")	2.27m (7'5")	2.77m (9'1")
A	Overall length	7.29 (23'11")	7.24 (23'9")	7.18 (23'7")
B	Overall height (to top of boom)	2.57 (8'5")	2.57 (8'5")	2.90 (9'6")
C	Overall width	2.59 (8'6")	2.59 (8'6")	2.59 (8'6")
D	Overall height (to top of cab)	2.725 (8'11")	2.725 (8'11")	2.725 (8'11")
※E	Ground clearance of rear end	0.9 (35")	0.9 (35")	0.9 (35")
※F	Ground clearance	0.455 (17.9")	0.455 (17.9")	0.455 (17.9")
G	Tail swing radius	2.13 (7'0")	2.13 (7'0")	2.13 (7'0")
H	Tumbler distance	2.61 (8'6")	2.61 (8'6")	2.61 (8'6")
I	Overall length of crawler	3.32 (10'11")	3.32 (10'11")	3.32 (10'11")
J	Track gauge	1.99 (6'6")	1.99 (6'6")	1.99 (6'6")
K	Shoe width	600mm (23.6")	600mm (23.6")	600mm (23.6")
L	Overall width of upper structure	2.43 (7'11")	2.43 (7'11")	2.43 (7'11")

● The figures marked ※ in the illustration do not include the shoe lug (25mm) [0.98"].

■ LPU

Unit : m (ft · in)

Arm length		2.1m (6'11")	2.5m (8'2")	3.0m (9'10")
A	Overall length	7.59 (24'11")	7.60 (24'11")	7.62 (24'11")
B	Overall height (to top of boom)	2.60 (8'6")	2.65 (8'8")	2.73 (8'11")
C	Overall width	2.59 (8'6")	2.59 (8'6")	2.59 (8'6")
D	Overall height (to top of cab)	2.725 (8'11")	2.725 (8'11")	2.725 (8'11")
※E	Ground clearance of rear end	0.9 (2'11")	0.9 (2'11")	0.9 (2'11")
※F	Ground clearance	0.455 (18")	0.455 (18")	0.455 (18")
G	Tail swing radius	2.15 (7'1")	2.15 (7'1")	2.15 (7'1")
H	Tumbler distance	2.785 (9'2")	2.785 (9'2")	2.785 (9'2")
I	Overall length of crawler	3.49 (11'5")	3.49 (11'5")	3.49 (11'5")
J	Track gauge	1.99 (7'10")	1.99 (7'10")	1.99 (7'10")
K	Shoe width	600mm (23.6")	600mm (23.6")	600mm (23.6")
L	Overall width of upper structure	2.43 (7'11")	2.43 (7'11")	2.43 (7'11")

● The figures marks ※ in the illustration do not include the shoe lug (25mm) [0.98"].

■ YPU

Unit : m (ft · in)

Arm length		2.1m (6'11")	2.5m (8'2")	3.0m (9'10")
A	Overall length	7.59 (24'11")	7.60 (24'11")	7.62 (24'11")
B	Overall height (to top of boom)	2.60 (8'6")	2.65 (8'8")	2.73 (8'11")
C	Overall width	2.59 (8'6")	2.59 (8'6")	2.59 (8'6")
D	Overall height (to top of cab)	2.725 (8'11")	2.725 (8'11")	2.725 (8'11")
※E	Ground clearance of rear end	0.9 (2'11")	0.9 (2'11")	0.9 (2'11")
※F	Ground clearance	0.455 (18")	0.455 (18")	0.455 (18")
G	Tail swing radius	2.15 (7'1")	2.15 (7'1")	2.15 (7'1")
H	Tumbler distance	3.035 (9'11")	3.035 (9'11")	3.035 (9'11")
I	Overall length of crawler	3.74 (12'3")	3.74 (12'3")	3.74 (12'3")
J	Track gauge	1.99 (7'10")	1.99 (7'10")	1.99 (7'10")
K	Shoe width	600mm (23.6")	600mm (23.6")	600mm (23.6")
L	Overall width of upper structure	2.43 (7'11")	2.43 (7'11")	2.43 (7'11")

● The figures marks ※ in the illustration do not include the shoe lug (25mm) [0.98"].

3. SPECIFICATIONS AND PERFORMANCE

■ SPEED AND CLIMBING ABILITY

Item	Model	YWU · LPU · YPU
Swing speed		12.7rpm
Travel speed		7 / 4km / h (4.3 / 2.5 mph)
Gradeability		35° (70%)

■ ENGINE

Model	Cummins 4BT3.9		
Type	Water-cooled 4-cycle, direct injection type with turbo charger		
Number of cylinder-Bore×Stroke	4-102mm(4.02in)×120mm(4.72in)		
Total displacement	3,900c.c. (238cuin)		
Rated output power/revolution	JISD 1005 NET	※	87 PS/2,200rpm
	SAE J 1349 NET	※	85 HP/2,200rpm
	DIN 6270 NET	※	87 PS/2,200rpm
Maximum torque/revolution	JISD 1005 NET	35 kgf·m / 1,300rpm	
	SAE J 1349 NET	254 lb·ft / 1,300rpm	
	DIN 6270 NET	35 kgf·m / 1,300rpm	

Mark ※ indicates that mounted with air cleaner, alternator and no muffler.

■ HYDRAULIC COMPONENTS

Hydraulic pump	Double-pump variable displacement, axial piston + gear pump
Hydraulic motor (swing)	Axial piston motor
Hydraulic motor (travel)	Axial piston motor
Control valve	5-spool multiple control valve + 1-spool control valve (swing)
Cylinders (boom, arm, and bucket)	Double acting cylinder
Return filter	Safety valve containing filter type
Oil cooler	Air-cooled type

■ WEIGHT

Item		Model	Unit : kg (lbs)								
			YWU			LPU			YPU		
Fully-equipped weight			10,700 (23,600)	10,900 (24,100)	11,100 (24,500)	12,000 (26,500)	12,000 (26,500)	12,200 (26,900)	12,200 (23,590)	12,400 (24,030)	12,600 (27,800)
Upper machinery			5,000 (11,000)	←	←	5,600 (12,300)	←	←	←	←	←
Lower	Shoe	500 (20")	3,980 (8,800)	—	—	4,300 (9,480)	—	—	4,700 (10,400)	—	—
		600 (24")	—	4,180 (9,200)	—	—	4,500 (10,000)	—	—	4,900 (10,700)	—
		700 (28")	—	—	4,380 (9,660)	—	—	4,700 (16,400)	—	—	—
ATT	Arm	2.77 (9'1")	1,720 (3,800)	←	←	X	X	X	X	X	X
		3.0 (9'10")	X	X	X	1,900 (4,200)	←	←	←	←	←



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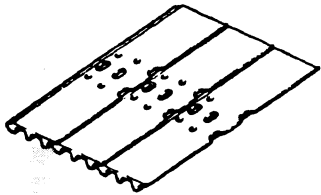
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4. TYPE OF SHOES

Shape	Model	Width of track shoe [mm(ft-in)]	Overall width of crawler [mm(ft-in)]	Ground pressure [kg/cm ² (psi)]
Grouser(equal height)  LPK-6-7	YWU	500 (20")	2,490 (8'2")	0.37(5.26)
		600 (24")	2,590 (8'6")	0.31(4.40)
		41 Link	700 (28")	2,690 (8'10")
	LPU	500 (20")	2,490 (8'2")	0.39 (5.54)
		600 (24")	2,590 (8'6")	0.33 (4.69)
		43 Link	700 (28")	2,690 (8'10")
	YPU	500 (20")	2,490 (8'2")	0.37(5.26)
		600 (24")	2,590 (8'6")	0.31(4.40)
		46 Link	700 (28")	2,690 (8'10")

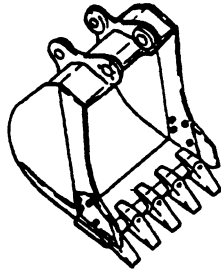
NOTE : • 600mm (24"), 700mm (28") shoe come in three types, wet land, paved road and soft land. Do not use these shoes at sites which contain large stones or other obstructions.

- Operating machines equipped with special shoes on sites which contain items such as large rocks can bend shoes, cause shoe bolts to loosen, or damage the lower frame (links, rollers, etc.).

5. TYPES AND COMBINATION OF ATTACHMENTS

■ TYPES OF BUCKETS

HOE BUCKET



YWU

LPK-6-8

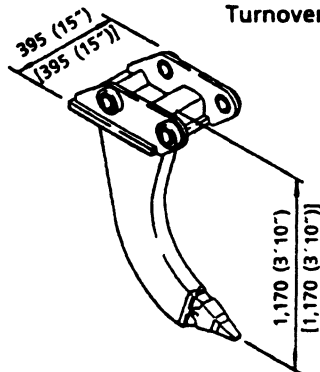
SAE, JIS Heaped capacity m ³ (cuyd)	Outside width of bucket mm (ft in)		No. of teeth	Equipped with side cutter	Possibility of turnover	Weight kg (lbs)
	With side cutter	Without side cutter				
0.17 (0.22)	—	450 (1'6")	3	No	Yes	200 (440)
0.28 (0.35)	—	560 (1'10")	3	No	Yes	260 (570)
0.34 (0.44)	750 (2'5")	650 (2'2")	4	Yes	Yes	300 (660)
0.40 (0.52)	840 (2'9")	730 (2'5")	4	Yes	Yes	320 (710)
0.46 (0.60)	920 (3'0")	820 (2'8")	4	Yes	Yes	340 (750)
0.52 (0.68)	1,010 (3'4")	900 (2'11")	5	Yes	Yes	360 (790)

LPU · YPU

SAE, JIS Heaped capacity m ³ (cuyd)	Outside width of bucket mm (ft in)		No. of teeth	Equipped with side cutter	Possibility of turnover	Weight kg (lbs)
	With side cutter	Without side cutter				
0.34 (0.44)	740 (2'5")	630 (2'1")	4	Yes	Yes	300 (660)
0.40 (0.52)	820 (2'8")	720 (2'4")	4	Yes	Yes	320 (710)
0.46 (0.60)	900 (2'11")	800 (2'7")	4	Yes	Yes	340 (750)
0.52 (0.68)	980 (3'3")	880 (2'11")	5	Yes	Yes	370 (820)
0.58 (0.75)	1,060 (3'6")	960 (3'2")	5	Yes	Yes	380 (840)
0.70 (0.91)	—	1,130 (3'8")	5	Yes	Yes	400 (880)

RIPPER

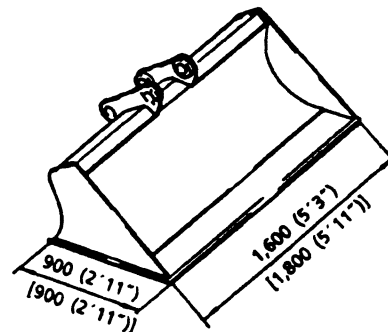
Weight : 250kg (550 lbs)
(250kg) (550 lbs)
Turnover not possible



LPK-6-9

SLOPE FINISHING BUCKET

Weight : 480kg (1060 lbs)
(550kg) (1210 lbs)
Turnover not possible



LPK-6-10

● LPU · YPU AND has the dimensions given in parentheses [] .

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