

KOBELCO

SHOP MANUAL

HYDRAULIC EXCAVATOR

SK100 V
SK120 V
SK120LC V

ACERA

S5LP007E-00 NA

Issued 04-1994

SK100 V YW06501~
SK120 V LP01101~
SK120LC V YP02301~

SHOP MANUAL

model

SK 100 v
SK 120 v
SK 120 LC v

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LP01

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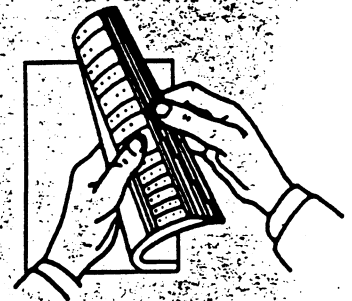
LP04

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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

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NOTES

⚠ WARNING

13. Always use tools that are in good condition and be sure you understand how to use them before performing any service work.
 14. Reinstall all fasteners with same part number. Do not use a lesser quality fastener if replacements are necessary.
 15. Repairs which require welding should be performed only with the benefit of the appropriate reference information and by personnel adequately trained and knowledgeable in welding procedures. Determine type of metal being welded and select correct welding procedure and electrodes, rods or wire to provide a weld metal strength equivalent at least to that of parent metal. Always disconnect battery during welding operations to protect sensitive electric equipment.
 16. Do not damage wiring during removal operations. Reinstall the wiring so it is not damaged nor will it be damaged in operation by contacting sharp corners, or by rubbing against some object or hot surface. Do not connect wiring to a line containing fluid.
 17. Be sure all protective devices including guards and shields are properly installed and functioning correctly before starting a repair. If a guard or shield must be removed to perform the repair work, use extra caution.
 18. Loose or damaged fuel, lubricant and hydraulic lines, tubes and hoses can cause fires. Do not bend or strike high pressure lines or install ones which have been bent or damaged. Inspect lines, tubes and hoses carefully. Do not check for leaks with your hands. Pin hole (very small) leaks can result in a high velocity oil stream that will be invisible close to the hose. This oil can penetrate the skin and cause personal injury. Use cardboard or paper to locate pin hole leaks.
 19. Tighten connections to the correct torque. Make sure that all heat shields, clamps and guards are installed correctly to avoid excessive heat, vibration or rubbing against other parts during operation. Shields that protect against oil spray onto hot exhaust components in event of a line, tube or seal failure must be installed correctly.
 20. Do not operate a machine if any rotating part is damaged or contacts any other part during operation. Any high speed rotating component that has been damaged or altered should be checked for balance before reusing.
 21. On track-type machines, be careful when servicing or separating tracks. Chips can fly when removing or installing a track pin. Wear safety glasses and long sleeve shirts. Track can unroll very quickly when separated. Keep away from front and rear of machine. The machine can move unexpectedly when both tracks are disengaged from the sprockets. Block the machine to prevent it from moving.
 22. Caution should be used to avoid breathing dust that may be generated when handling components containing asbestos fibers. If this dust is inhaled, it can be hazardous to your health. Components in KOBELCO products that may contain asbestos fibers are brake pads, brake band and lining assemblies, clutch plates and some gaskets. The asbestos used in these components is usually bound in a resin or sealed in some way. Normal handling is not hazardous as long as airborne dust which contains asbestos is not generated.
- If dust which may contain asbestos is present, there are several common sense guidelines that should be followed.
- a. Never use compressed air for cleaning.
 - b. Avoid brushing or grinding of asbestos containing materials.
 - c. For clean up, use wet methods or a vacuum equipped with a high efficiency particulate air (HEPA) filter.
 - d. Use exhaust ventilation on permanent machining jobs.
 - e. Wear an approved respirator if there is no other way to control the dust.
 - f. Comply with applicable rules and regulations for the work place.
 - g. Follow environmental rules and regulations for disposal of asbestos.
 - h. Avoid areas where asbestos particles may be in the air.

NOTES

KOBELCO

SHOP MANUAL

Book code No. S5LP0106E

SK100V
SK120V
SK120LCV

LP01

SPECIFICATION

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Applicable Machines

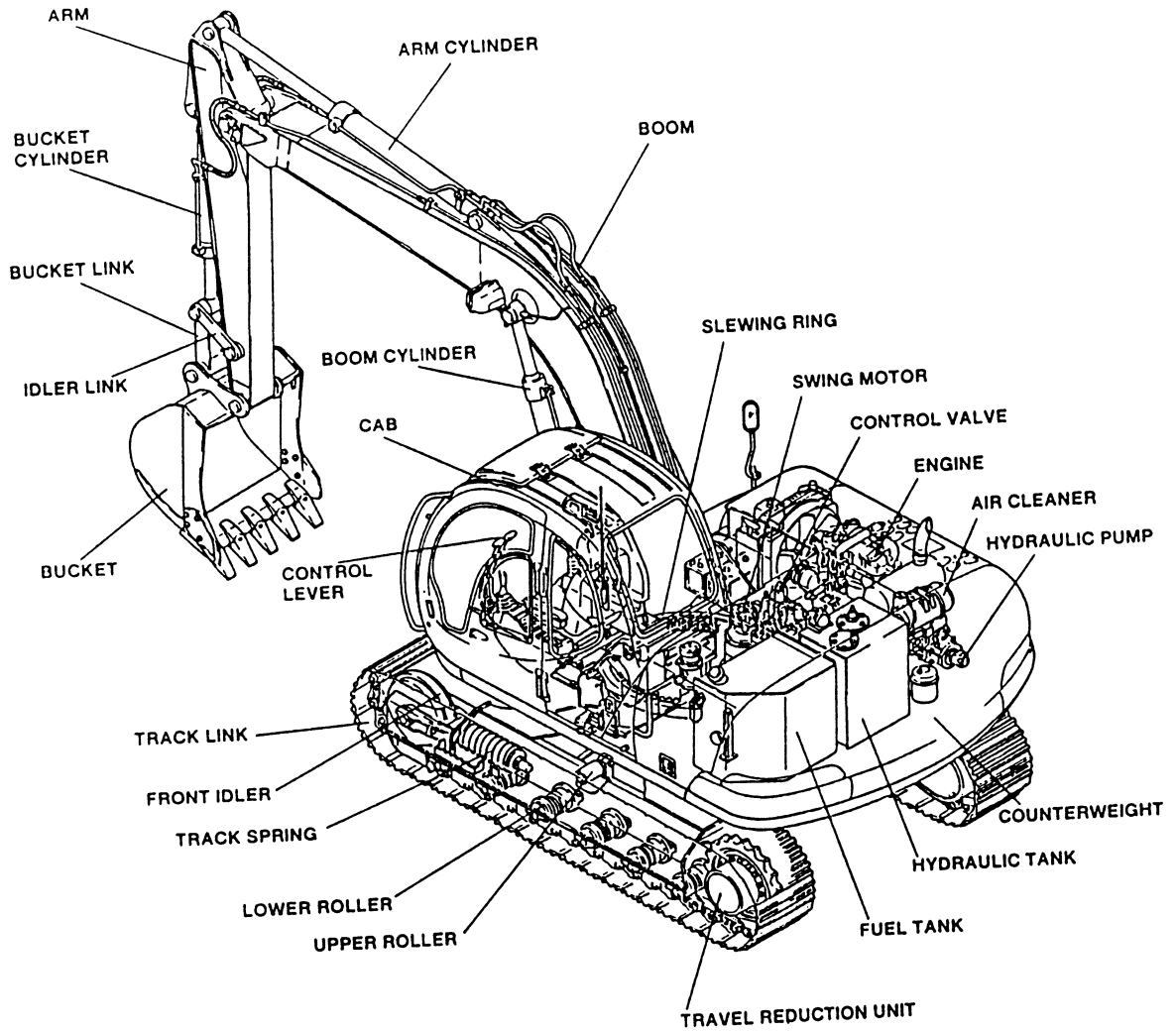
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LP11001~

YP02301~

Revision	Date of Issue	Remarks
First edition	April, 1994	S5LP0106E K

1. NAME OF COMPONENTS



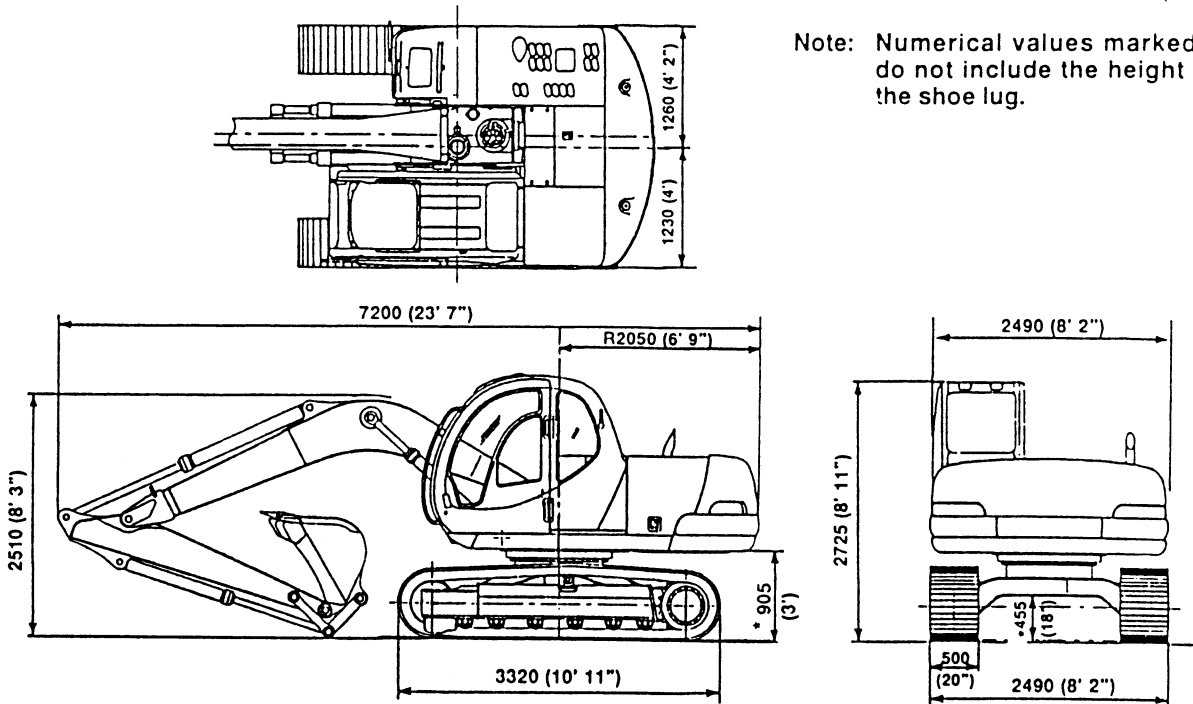
LP-0-1

2. GENERAL DIMENSIONS

- SK100 v with 4.26 m (14 ft) boom and 2.22 m (7 ft-3 in) standard arm

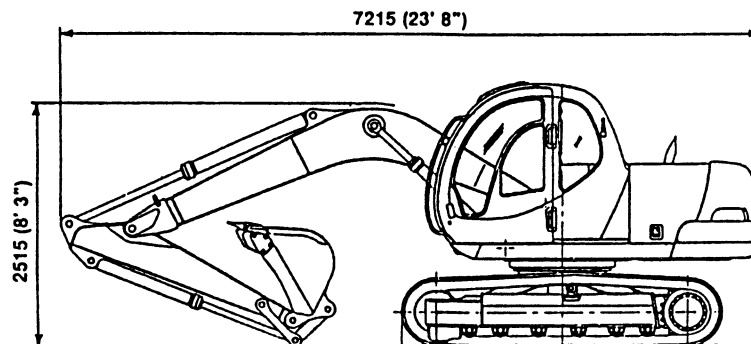
Unit: mm (ft-in)

Note: Numerical values marked * do not include the height of the shoe lug.



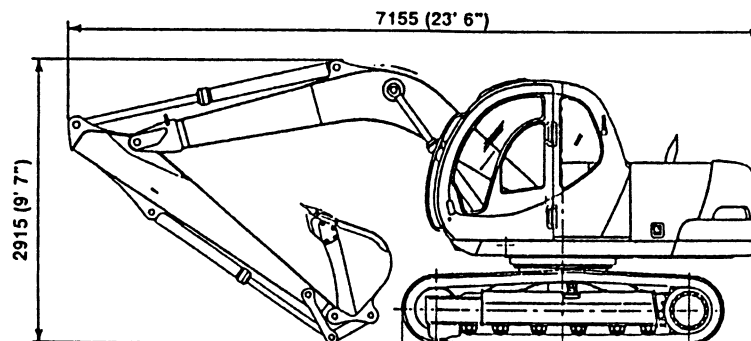
LP-6-1

- SK100 v with 4.26 m (14 ft) boom and 1.9 m (6 ft-3 in) short arm



LP-6-2

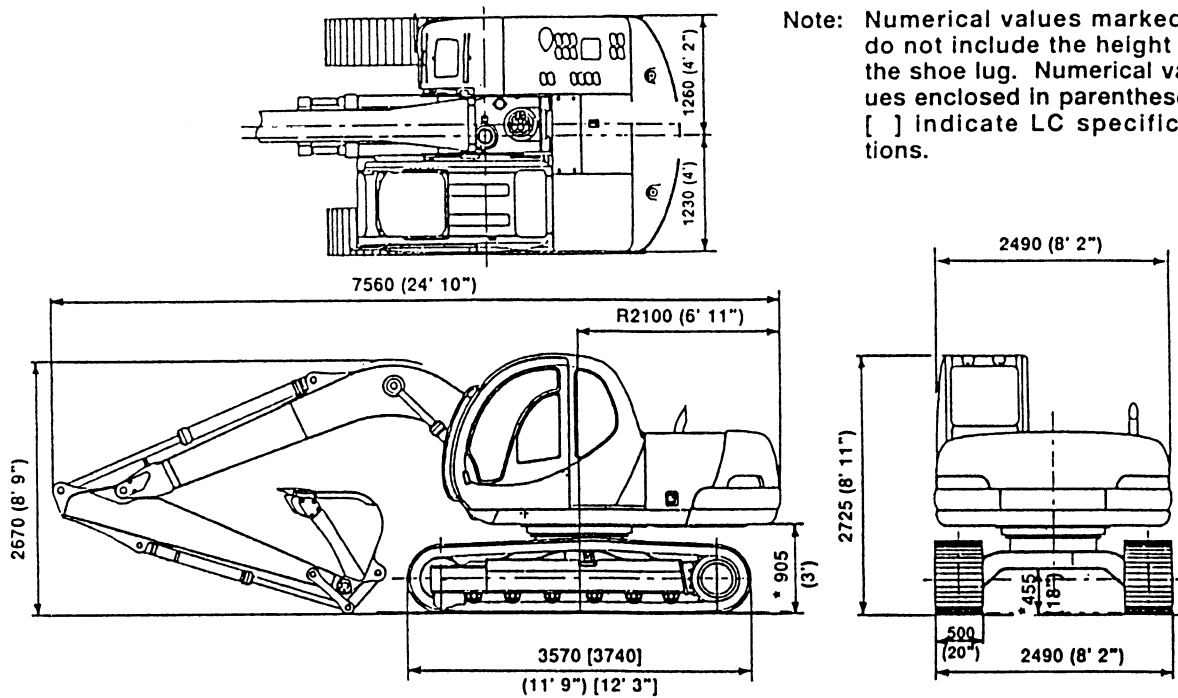
- SK100 v with 4.26 m (14 ft) boom and 2.7 m (8 ft-10 in) long arm



LP-6-3

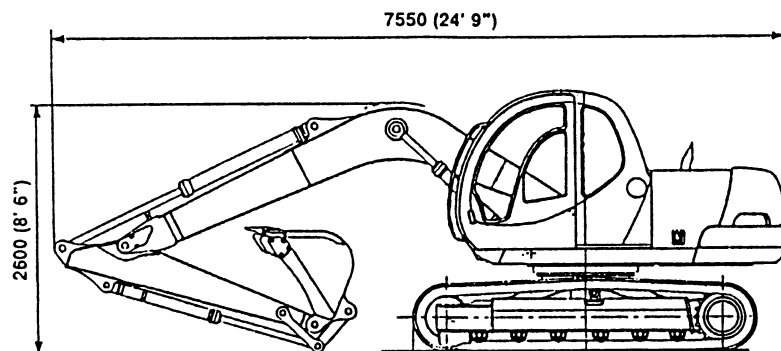
- SK120 v AND SK120Lc v with 4.6 m (15 ft-1 in) boom and 2.5 m (8 ft-2 in) standard arm

Unit: mm (ft-in)



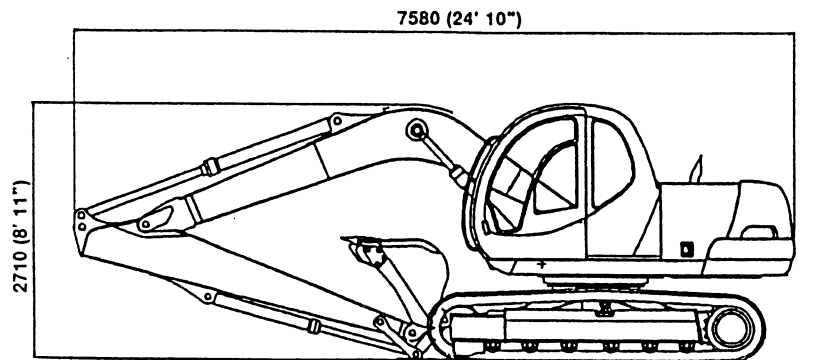
LP-6-4

- SK120 v AND SK120Lc v with 4.6 m (15 ft-1 in) boom and 2.1 m (6 ft-11 in) short arm



LP-6-5

- SK120 v AND SK120Lc v with 4.6 m (15 ft-1 in) boom and 3.0 m (9 ft-10 in) long arm



LP-6-6

3. SPECIFICATIONS AND PERFORMANCE

● SPEED AND CLIMBING CAPABILITY

Item \ Model	SK100 v	SK120 v, SK120Lc v
Swing Speed (high/low) rpm	12/4	←
Travel Speed (high/low) km/h	7/1 km/h (4.3/0.6 mph)	←
Gradeability	70% (35°)	←

● ENGINE

Item \ Model	SK100 v	SK120 v, SK120Lc v
Engine model	ISUZU 4BD1	ISUZU 4BD1T
Type	4-cycle, water-cooled direct injection type diesel	4-cycle, water-cooled direct injection type with turbo charger
Number of Cylinder — Bore x Stroke	4—102 mm x 118 mm (4 in. x 4.64 in.)	←
Total displacement	3856 c.c. (235 cuin)	←
Rated Output/Rotation Speed	76 PS / 2300 rpm	85 PS / 2100 rpm
Maximum Torque/Rotation Speed	24 kgf·m / 1600 rpm	30.5 kg·m / 1600 rpm

● HYDRAULIC COMPONENTS

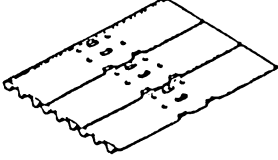
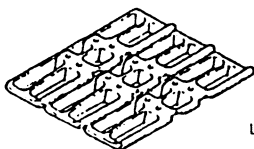
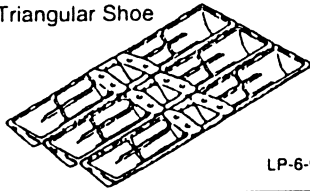
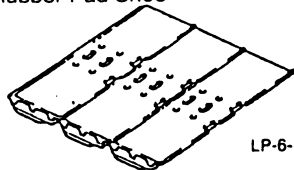

Item \ Model	SK100 v	SK120 v, SK120Lc v
Hydraulic Pump	Double-pump variable displacement axial piston + gear pump	←
Hydraulic Motor (swing)	Axial piston motor	←
Hydraulic Motor (Travel)	Axial piston motor	←
Control Valve	6-section multiple control valve	←
Cylinder (boom, arm, and bucket)	Double action cylinder	←
Oil Cooler	Air-cooled type	←

● WEIGHT

Unit: kg (lbs)

Item \ Model	SK100 v	SK120 v	SK120Lc v
Fully equipped Weight	10600 (23400)	11800 (26000)	12000 (26400)
Upper Frame machinery	4650 (10250)	5500 (12100)	←
Lower Frame machinery with 500mm [20 in] grouser shoe	4000 (8820)	4150 (9150)	4350 (9590)
Attachment 4.26 m (14 ft) boom + 2.22 m (7 ft-3 in) arm + 0.4 m ³ (0.52 cuyd) bucket	1950 (4300)	—	—
Attachment 4.6 m (15 ft-1 in) boom + 2.5 m (8 ft-2 in) arm + 0.45 m ³ (0.59 cuyd) bucket	—	2150 (4740)	←

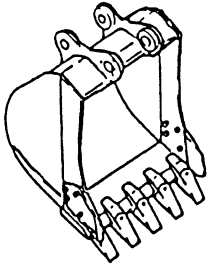
4. TYPE OF SHOES

Shape	Model	Shoe Width mm (in.)	Total Width of Crawler mm (ft-in)	Ground Pressure kg/cm ² (psi)
 LP-6-7	SK100 v 41 links	500 (20)	2490 (8' 2")	0.37 (5.26)
		600 (24)	2590 (8' 6")	0.32 (4.55)
		700 (27)	2690 (8' 10")	0.28 (3.98)
	SK120 v 44 links	500 (20)	2490 (8' 2")	0.39 (5.55)
		600 (24)	2590 (8' 6")	0.33 (4.69)
		700 (27)	2690 (8' 10")	0.29 (4.12)
	SK120Lc v 46 links	500 (20)	2490 (8' 2")	0.37 (5.26)
		600 (24)	2590 (8' 6")	0.31 (4.41)
		700 (27)	2690 (8' 10")	0.27 (3.84)
 LP-6-8	SK100 v 41 links	500 (20)	2490 (8' 2")	0.38 (5.40)
	SK120 v 44 links	500 (20)	2490 (8' 2")	0.39 (5.55)
	SK120Lc v 46 links	500 (20)	2490 (8' 2")	0.37 (5.26)
 LP-6-9	SK100 v 41 links	800 (32)	2790 (9' 2")	0.24 (3.41)
	SK120 v 44 links	800 (32)	2790 (9' 2")	0.25 (3.56)
	SK120Lc v 46 links	800 (32)	2790 (9' 2")	0.24 (3.41)
 LP-6-10	SK100 v 41 links	500 (20)	2490 (8' 2")	0.39 (5.55)
	SK120 v 44 links	500 (20)	2490 (8' 2")	0.40 (5.69)
	SK200Lc v 46 links	500 (20)	2490 (8' 2")	0.38 (5.40)
 LP-6-11	SK100 v	500 (20)	2490 (8' 2")	0.37 (5.26)
	SK120 v	500 (20)	2490 (8' 2")	0.38 (5.40)

Note: Use grouser shoes 500 mm (20 in) on rough ground (areas covered with rocks and gravel). If you drive or excavate with other shoes, this may cause shoe bending, shoe bolt looseness, and track assembly (link, roller, etc.) damage.

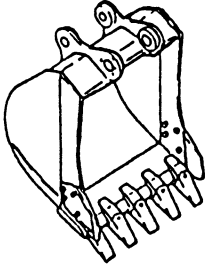
5. TYPES OF BUCKET

SK100v

Hoe Bucket	Heaped Capacity m ³ (cuyd)	Outside Width of Bucket mm (ft-in)		Number of Teeth	Equipped with Side Cutters	Can be Turned over	Weight kg (lbs)
		with side cutters	without side cutters				
	0.15 (0.20)	—	450 (1' 6")	3	No	Yes	200 (440)
	0.21 (0.27)	600 (2')	500 (1' 8")	3	Yes	Yes	250 (550)
	0.26 (0.34)	700 (2' 4")	600 (2')	3	Yes	Yes	280 (620)
	0.32 (0.42)	800 (2' 7")	700 (2' 4")	4	Yes	Yes	310 (680)
	0.4 (0.52) (STD)	950 (3' 1")	850 (2' 9")	4	Yes	Yes	340 (750)
	0.45 (0.59)	1000 (3' 3")	900 (2' 11")	5	Yes	Yes	360 (790)
	—	—	—	—	—	—	—

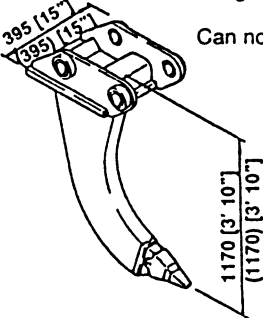
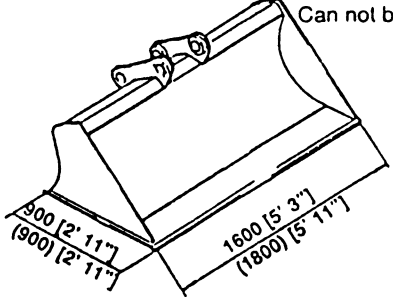
LP-6-12

SK120v, SK120Lc v

Hoe Bucket	Heaped Capacity m ³ (cuyd)	Outside Width of Bucket mm (ft-in)		Number of Teeth	Equipped with Side Cutters	Can be Turned over	Weight kg (lbs)
		with side cutters	without side cutters				
	0.22 (0.28)	600 (2')	500 (1' 8")	3	Yes	Yes	270 (600)
	0.27 (0.35)	700 (2' 4")	600 (2')	3	Yes	Yes	290 (640)
	0.33 (0.43)	800 (2' 7")	700 (2' 4")	4	Yes	Yes	320 (700)
	0.4 (0.52)	900 (2' 11")	800 (2' 9")	4	Yes	Yes	340 (750)
	0.45 (0.59) (STD)	1000 (3' 3")	900 (2' 11")	5	Yes	Yes	370 (820)
	0.5 (0.65)	1100 (3' 7")	1000 (3' 3")	5	Yes	Yes	400 (880)
	0.6 (0.78)	—	1150 (3' 9")	5	Yes	Yes	390 (860)

LP-6-13

Note: SK120 v, SK120Lc v has the dimensions given in parentheses ().

<p>Ripper</p>  <p>395 [15'"] [395] [15'"]</p> <p>1170 [3' 10'"] (1170) [3' 10'"]</p> <p>Weight: 250 kg [550 lbs] (250 kg) [550 lbs] Can not be turned over</p> <p style="text-align: right;">LP-6-14</p>	<p>Slope Finishing Bucket</p>  <p>900 [2' 11'"] (900) [2' 11'"]</p> <p>1800 [5' 3'"] (1800) [5' 11'"]</p> <p>Weight: 480 kg [1060 lbs] (550 kg) [1210 lbs] Can not be turned over</p> <p style="text-align: right;">LP-6-16</p>
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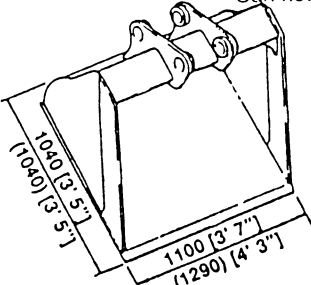
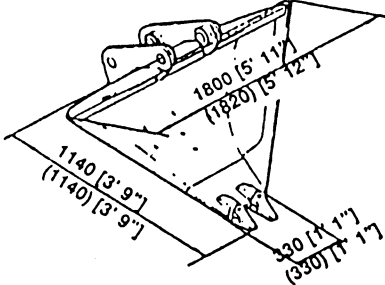
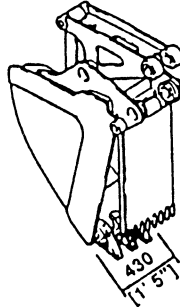
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<p>Scraper bucket</p> <p>Capacity: 0.45 m³ [0.59 cuyd] (0.55 m³ [0.72 cuyd])</p> <p>Weight: 380 kg [840 lbs] (390 kg) [860 lbs]</p> <p>Can not be turned over</p>  <p style="text-align: right;">LP-6-15</p>	<p>V-Bucket</p> <p>Capacity: 0.38 m³ [0.5 cuyd] (0.38 m³) [0.5 cuyd]</p> <p>Weight: 280 kg [620 lbs] (290 kg) [640 lbs]</p> <p>Can not be turned over</p>  <p style="text-align: right;">LP-6-17</p>
<p>Bucket With Ejector</p> <p>Capacity: 0.2 m³ [0.26 cuyd] (0.2 m³) [0.26 cuyd]</p> <p>Weight: 400 kg [880 lbs] (400 kg) [880 lbs]</p> <p>Can not be turned over</p>  <p style="text-align: right;">LP-6-18</p>	

6. COMBINATION OF ATTACHMENTS

SK100v

Type	Bucket			Applicable Arm			
	JIS heaped capacity m ³ (cuyd)	SAE heaped capacity m ³ (cuyd)	JIS, SAE struck capacity m ³ (cuyd)	1.9 m (6 ft-3 in) Arm (short)	2.22 m (7 ft-3 in) Arm (STD)	2.7 m (8 ft-10 in) Arm (long)	2.22 m (7 ft-3 in) +0.6 m (2 ft) Extension Arm
Hoe Bucket	0.15 (0.20)	0.17 (0.22)	0.13 (0.17)	○	○	○	○
	0.21 (0.27)	0.23 (0.30)	0.19 (0.25)	○	○	○	○
	0.26 (0.34)	0.30 (0.39)	0.22 (0.29)	○	○	○	●
	0.32 (0.42)	0.37 (0.48)	0.27 (0.35)	○	○	●	△
	0.4 (0.52) (STD)	0.45 (0.59)	0.35 (0.46)	○	●	△	×
	0.45 (0.59)	0.52 (0.68)	0.38 (0.50)	●	△	×	×
Bucket with ejector	0.20 (0.26)	0.22 (0.29)	0.19 (0.25)	○	○	○	○
Slope Finishing Bucket	Width × Depth 1.6 m × 0.9 m (5' 3" × 2' 11")	—	—	△	△	△	△
Ripper	—	—	—	○	○	×	×
V-Bucket	0.38 (0.50)	0.46 (0.60)	0.30 (0.39)	△	△	△	△
Scraper Bucket	0.45 (0.59)	0.51 (0.67)	0.38 (0.50)	△	△	△	△
Breaker	—	—	—	○	○	×	×

SK120V, SK120LCV

Type	Bucket			Applicable Arm			
	JIS heaped capacity m ³ (cuyd)	SAE heaped capacity m ³ (cuyd)	JIS, SAE struck capacity m ³ (cuyd)	2.1 m (6 ft-11 in) Arm (short)	2.5 m (8 ft-2 in) Arm (STD)	3.0 m (9 ft-10 in) Arm (long)	2.5 m (8 ft-2 in) +1.0 m (3 ft-3 in) Extension Arm
Hoe Bucket	0.22 (0.29)	0.24 (0.31)	0.20 (0.26)	○	○	○	○
	0.27 (0.35)	0.31 (0.41)	0.23 (0.30)	○	○	○	◎
	0.33 (0.43)	0.38 (0.50)	0.28 (0.37)	○	○	◎	△
	0.40 (0.52)	0.45 (0.59)	0.35 (0.46)	○	○	△	×
	0.45 (0.59) (STD)	0.52 (0.68)	0.38 (0.50)	○	◎	×	×
	0.50 (0.65)	0.57 (0.75)	0.43 (0.56)	◎	△	×	×
	0.60 (0.78)	0.70 (0.91)	0.50 (0.68)	△	×	×	×
Slope Finishing Bucket	Width × Depth 1.8 m × 0.9 m (5' 11" × 2' 11")	—	—	△	△	△	△
V-Bucket	0.38 (0.50)	0.46 (0.60)	0.30 (0.39)	△	△	△	△
Scraper Bucket	0.55 (0.72)	0.65 (0.85)	0.42 (0.55)	△	△	△	△
Breaker	—	—	—	○	○	×	×

Legend

- ◎ Standard combination
- General operation: Excavation or loading of sand, gravel, and clay
- △ Light operation: Mainly loading of loose gravel (e.g., cultivation or loading of sand or gravel)
- × Prohibited combination: KOBELCO's warranty does not cover any damages resulting from these combinations. Do not use these combinations.

Install only genuine attachment recommended by KOBELCO on the machine. KOBELCO is not liable for any damages to the machine or attachment arising from the installment of attachment other than the specified attachments.

⚠ CAUTION

- If any other bucket, except for the backhoe bucket, is turned over and used for excavation, damage to the arm and bucket may occur.

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