



# SERVICEMAN HANDBOOK

## EXCAVATOR

### SK60V

### SK100V, SK100LV

### SK120V, SK120LCV

### SK200V, SK200LCV

### SK220V, SK220LCV

### SUPER MARK V

S7LO0023E NA

Issued 01Feb 04

APPLICABLE:

SK60V ..... LE-20101~  
SK100V ..... YW-07901~  
SK100LV ..... LX-10201~  
SK120V ..... LP-13601~

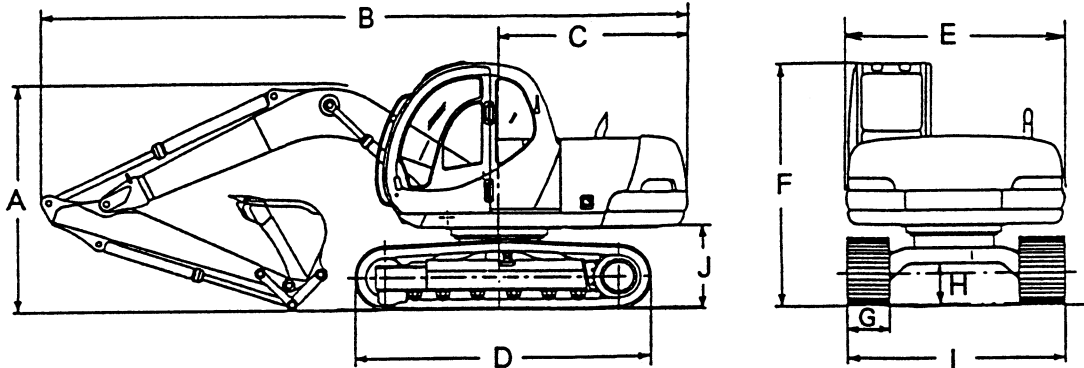
SK120LCV ..... YP-02501~  
SK200V ..... YN-23301~  
SK200LCV ..... YQ-02801~  
SK220V ..... LQ-03701~  
SK220LCV ..... LL-02501~

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**SK100v SK120v SK200v SK220v**  
**SK60v SK100Lv SK120LcV SK200LcV SK220LcV**

**1. GENERAL DIMENSIONS**



Unit : mm

MODEL	GENERAL DIMENSIONS										
	ARM	A	B	C	D	E	F	G	H	I	J
SK60v	1,730 (STD)	2,680	6,060	R1,700	2,785	2,170	2,590	450	380	2,150	770
	2,150 (LONG)	3,040	6,045					600		2,450	
	1,730+500 (EXTENTION)	2,890	6,055					600		2,450	
SK100v SK100Lv	2,220 (STD)	2,510 (2,540)	7,200 (7,140)	R2,050	3,320  (3,800)	2,460	2,725  (2,920)	500	455	2,490	905
	1,900 (SHORT)	2,515 (2,660)	7,200 (7,220)					600		2,590	
	2,700 (LONG)	2,915 (3,040)	7,155 (7,240)					700		2,690	
SK120v SK120LcV	2,500 (STD)	2,670	7,560	R2,100	3,570  (3,740)	2,490	2,725	500	455	2,490	905
	2,100 (SHORT)	2,640	7,550					600		2,590	
	3,000 (LONG)	2,710	7,580					700		2,690	
SK200v SK200LcV	2,940 (STD)	2,840	9,400	R2,700	4,170  (4,450)	2,715	2,900	600	465	2,800	1,055
	2,400 (SHORT)	3,110	9,470					700		2,900	
	3,300 (LONG)	2,910	9,390					800		3,000	
SK220v SK220LcV	2,980 (STD)	3,080	10,040	R2,900	4,330  (4,710)	2,840	2,900	600	465	2,990	1,070
	2,500 (SHORT)	3,230	10,100					700		3,090	
	3,660 (LONG)	3,060	10,010					800		3,190	

NOTE : The values in ( ) shows LC type.

## 2. MACHINE SPECIFICATION TABLE

ITEM	MODEL	SK60v			SK100v/SK100Lv			SK120v/SK120Lcv									
<b>PERFORMANCE</b>																	
STD bucket capacity	m <sup>3</sup>	0.28			0.45			0.5									
Bucket capacity range	m <sup>3</sup>	0.11~0.4			0.17~0.51			0.24~0.70									
Travel speed	km/h	5.5/3.5			7/4			7/4									
Swing speed	rpm	13/6.5			12			12									
Gradeability	° (%)	35 (70%)			35 (70%)			35 (70%)									
Travelling	ton	5.2			8.5			9.0									
Digging force	Bucket	4.8			7.71			8.99									
	Arm	3.98	3.45	3.2	6.8	6.0	5.4	7.3	6.9	6.0							
	Arm length	1,730	2,150	1,730+500	1,900	2,220	2,700	2,100	2,500	3,000							
<b>DIMENSIONS AND WEIGHT</b>																	
Operating weight	ton	6.5 (450mm Shoes)			10.6 (500mm Shoes)			12.9 (700mm Shoes)			11.8 (500mm) : 12.0 (500mm)						
Dimensions for Transportation	Arm length	1,730	2,150	1,730+500	1,900	2,220	2,700	1,900	2,220	2,700	2,100	2,500	3,000				
	Full length	6,060	6,045	6,060	7,215	7,200	7,155	7,220	7,140	7,240	7,550	7,560	7,520				
	Full width	2,170	2,170	2,170	2,490	2,490	2,490	2,740	2,740	2,740	2,490	2,490	2,490				
	Full height	2,680	3,040	2,860	2,725	2,725	2,725	2,920	2,920	2,920	2,725	2,725	3,050				
Upper	Cab height from G.L.	2,590			2,725	2,725	2,725	2,920	2,920	2,920	2,725						
	Tail height from G.L.	770			905	905	905	1,100	1,100	1,100	905						
	Tail swing radius	1,700			2,050	2,050	2,050	2,050	2,050	2,050	2,100						
	Min. front swing radius	1,625			2,390	2,340	2,560	2,380	2,280	2,560	2,390						
Lower	Overall length of crawlers	2,785			3,320	3,320	3,320	3,800	3,800	3,800	3,570		3,740				
	Crawler wheel centers	2,160			2,610	2,610	2,610	2,990	2,990	2,990	2,865		3,035				
	Track gauge	1,700			1,990	1,990	1,990	2,040	2,040	2,040	1,990		1,990				
	Overall width of crawlers	2,150			2,490	2,490	2,490	2,740	2,740	2,740	2,490		2,490				
	Width of shoes ground pressure mm/kgf/cm <sup>2</sup>	Grouser	450/0.30		Grouser	500/0.37		700/0.28		Grouser	500/0.39		500/0.37				
			600/0.23			600/0.32		800/0.25			600/0.33		600/0.31				
		Flat	450/0.31		Flat	500/0.38		---		Flat	500/0.39		500/0.37				
			---			Triangle		800/0.24			---		Triangle		800/0.25		800/0.24
Triangle			600/0.23			700/0.20		Rubber Pad			500/0.39		---		Rubber Pad		500/0.40
---		---		---		---		---		---		---		---		---	
Ground clearance	mm	380			455			600			455						
<b>ENGINE</b>																	
Model		ISUZU A-4JB1			ISUZU A-4BG1			ISUZU A-4BG1-T									
Rated power output	PS/rpm	57/2,200			78/2,300			85/2,050									
Max. torque	kgf·m/rpm	19.2/1,600			27/1,600			32/1,600									
Displacement	cc	2,771			4,329			4,329									
Capacity of fuel tank	ℓ	124			250			250									
<b>HYDRAULIC SYSTEM</b>																	
Type of pumps		Two axial-piston, variable displacement pumps+gear pump			Two axial-piston, variable displacement pumps+gear pump			Two axial-piston, variable displacement pumps+gear pump									
Set pressure of system	kgf/cm <sup>2</sup>	260/320 (Travel)			330			350									
Swing motor		Axial piston			Axial piston			Axial piston									
Travel motor		Axial piston			Axial piston			Axial piston									
Control valves		6-spool			6-spool			6-spool									
Capacity of HYD. oil tank	ℓ	50			100			100									
<b>WORKING RANGES</b>																	
Length of Arm	mm	STD	LONG	EXT.	SHORT	STD	LONG	SHORT	STD	LONG	SHORT	STD	LONG				
		1,730	2,150	1,730+500	1,900	2,220	2,700	1,900	2,220	2,700	2,100	2,500	3,000				
Bucket capacity	m <sup>3</sup>	0.28	0.22	0.22	0.51	0.45	0.37	0.51	0.45	0.37	0.57	0.50	0.38				
Max. digging reach	mm	6,390	6,780	6,840	7,400	7,700	8,160	7,400	7,700	8,160	7,920	8,270	8,730				
Max. digging depth	mm	4,200	4,610	4,690	4,780	5,100	5,580	4,590	4,910	5,390	5,200	5,600	6,100				
Max. vertical well digging depth	mm	3,600	3,960	4,090	4,230	4,560	5,020	3,960	4,370	4,830	4,600	4,980	5,400				
Max. digging height	mm	7,400	7,720	7,760	7,820	8,040	8,350	8,000	8,220	8,540	8,350	8,520	8,800				
Max. dumping clearance	mm	5,340	5,650	5,690	5,440	5,650	5,960	5,620	5,830	6,150	5,900	6,090	6,370				

**SK 200v SK 220v**  
**SK 200LcV SK 220LcV**

ITEM	MODEL	SK 200v / SK 200LcV			SK 220v / SK 220LcV			
<b>PERFORMANCE</b>								
STD bucket capacity	m <sup>3</sup>	0.8			1.0			
Bucket capacity range	m <sup>3</sup>	0.51~1.0			0.81~1.4			
Travel speed	km/h	7/4			7/4			
Swing speed	rpm	11			11			
Gradeability	° (%)	35 (70%)			35 (70%)			
Travelling	ton	16.3			18.4			
Digging force	Bucket	13.0 (Power boost 14.1)			15.8 (Power boost 16.7)			
	Arm	ton	11.8 (12.8)	9.88 (10.7)	9.08	13.5 (14.3)	11.6 (12.2)	9.79
	Arm length	mm	2,400	2,940	3,300	2,500	2,980	3,660
<b>DIMENSIONS AND WEIGHT</b>								
Operating weight	ton	19.0 (600mm)		19.5 (600mm)	22.7 (600mm)		23.2 (600mm)	
Dimensional for Transportation	Arm length	mm	2,400	2,940	3,300	2,500	2,980	3,660
	Full length	mm	9,470	9,380	9,390	10,100	10,040	10,010
	Full width	mm	2,800		2,990	2,990		3,190
	Full height	mm	3,110	2,900	2,910	3,230	3,080	3,060
Upper	Cab height from G.L.	mm	2,900			2,900		
	Tail height from G.L.	mm	1,055			1,070		
	Tail swing radius	mm	2,700			2,900		
	Min. front swing radius	mm	3,460			3,900		
Lower	Overall length of crawlers	mm	4,170		4,450	4,330		4,710
	Crawler wheel centers	mm	3,370		3,650	3,470		3,850
	Track gauge	mm	2,200		2,390	2,390		2,590
	Overall width of crawlers	mm	2,800		2,990	2,990		3,190
	Width of shoes ground pressure mm/kgf/cm <sup>2</sup>	Grouser		600/0.43	600/0.41	Grouser	600/0.50	600/0.47
				700/0.38	700/0.36		700/0.44	700/0.41
		Flat		800/0.33	800/0.32	Flat	800/0.39	800/0.36
				600/0.44	600/0.42		600/0.51	600/0.47
Triangle		900/0.30	900/0.28	Triangle	—	—		
		—	—		—	—		
Ground clearance	mm	465			465		450	
<b>ENGINE</b>								
Model		MITSUBISHI 6D34-TE1			MITSUBISHI 6D16-TE1			
Rated power output	PS/rpm	140/2,150			165/2,000			
Max. torque	kgf·m/rpm	50/1,600			63/1,600			
Displacement	cc	5,861			7,545			
Capacity of fuel tank	ℓ	315			315			
<b>HYDRAULIC SYSTEM</b>								
Type of pumps		Two axial-piston, variable displacement pumps+ gear pump			Two axial-piston, variable displacement pumps+ gear pump			
Set pressure of system	kgf/cm <sup>2</sup>	350 (Power boost 380)			350 (Power boost 370)			
Swing motor		Axial piston			Axial piston			
Travel motor		Axial piston			Axial piston			
Control valves		6-spool			6-spool			
Capacity of HYD. oil tank	ℓ	145			185			
<b>WORKING RANGES</b>								
Length of Arm	mm	SHORT	STD	LONG	SHORT	STD	LONG	
		2,400	2,940	3,300	2,500	2,980	3,660	
Bucket capacity	m <sup>3</sup>	0.93	0.80	0.72	1.1	1.0	0.8	
Max. digging reach	mm	9,420	9,900	10,220	9,890	10,310	10,970	
Max. digging depth	mm	6,190	6,700	7,090	6,530	7,010	7,690	
Max. vertical wall digging depth	mm	5,550	6,080	6,460	5,830	6,180	6,790	
Max. digging height	mm	9,400	9,660	9,770	9,630	9,770	10,170	
Max. dumping clearance	mm	6,560	6,830	6,970	6,710	6,870	7,250	

## 3. MAJOR SPECIFICATIONS

## 3-1 ENGINE SPECIFICATIONS, CHARACTERISTIC CURVE

Specifications

Model	ISUZU 4JB1 Diesel engine			
Type	4cycle, Water-cooled, Direct injection			
No. of cylinder—Bore×Stroke	4—93mm×102mm			
Total displacement	2,771cc			
Compression ratio	18.2			
Output rating	57PS/2,200 rpm			
Max. torque	19.2kgf·m/1,600 rpm			
High idling	2,380±50 rpm			
Low idling	950±50 rpm			
Injection start pressure	185kgf/cm <sup>2</sup>			
Firing order	1—3—4—2			
Fuel injection timing	17° before the top dead point			
Compression pressure	30kgf/cm <sup>2</sup> at 200 rpm			
Valve clearance Valve action timing		Valve clearance	Open	Close
	Suction valve	In cold condition 0.4mm	24.5° before the top dead point	55.5° after the bottom dead point
	Exhaust valve	In cold condition 0.4mm	54° before the bottom dead point	26° after the top dead point
Motion of thermostat	Beginning of opening at 82°C, Full open at 95°C			
Starter	24V—3.5KW			
Alternator	24V—20A			
Empty weight	234 kg			
Cooling fan drive method	φ 450 suction type, Belt drive, Pulley ratio 1.12			
Turning direction	Counterclockwise as viewed from flywheel			

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