

HYDRAULIC EXCAVATOR

SHOP MANUAL

model **SK15SR**
SK20SR

This is the shop manual for KOBELCO hydraulic excavator. Contained is the necessary technical data concerning the maintenance and repair of this model. The manual is divided into the following four major sections ; GENERAL, SYSTEMS, COMPONENTS and PROCEDURE.

*GENERAL

- | | | | |
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| PM01. | SPECIFICATION | PM04. | MAINTENANCE STANDARD AND TEST PROCEDURE |
| — | OPERATION AND CONTROLS
(Refer to Operators Manual) | — | PREVENTIVE MAINTENANCE
(Refer to Operators Manual) |
| PM03. | LOCATION AND WEIGHT OF COMPONENTS | PM07. | WORKING STANDARD |

*SYSTEMS

- | | | | |
|-------|------------------|-------|------------------|
| PM12. | HYDRAULIC SYSTEM | PM22. | CONTROL SYSTEM |
| PM15. | UPPER STRUCTURE | PM25. | ELECTRIC SYSTEM |
| PM18. | TRAVEL SYSTEM | | |
| PM21. | ATTACHMENTS | PM29. | TROUBLE SHOOTING |

*COMPONENTS

- | | | | |
|-----|-----------------|-----|--------------------|
| 12. | HYDRAULIC PUMP | 16. | SWIVEL JOINT |
| 13. | CONTROL VALVE | 17. | HYDRAULIC CYLINDER |
| 14. | OTHER VALVES | | |
| 15. | HYDRAULIC MOTOR | 50. | ENGINE |

*PROCEDURE

When checking or repairing the machine we suggest that you refer to this manual carefully. We hope that reference to this manual will help to maintain a high level of working efficiency and reliability. For further details on maintenance and checks refer to the "OPERATORS MANUAL" which has been supplied with the machine.

Although all data was correct at the time of printing, due to continual design changes and improvements, some contents may not conform to the actual machine. Take special care to order parts only after confirming the validity of the part number in the "PARTS MANUAL".

If you notice any explanatory discrepancies, after consulting one of our representatives, please update your manual according to the latest data. However, in the event of any specification changes, we will issue revised edition.

INDEX

KOBELCO

Book code No. S5PM0002E②

SK15SR List of Shop Manual GENERAL Section
SK20SR

Index No.	Title	Book Code No.		
		Distribution Year - Month		
	Applicable Machines	SK15SR PU06001~07000 ※PU07001~	SK20SR PM02001~03500 ※PM03501~	
PM01	SPECIFICATION	S5PM0101E② 1999-4	←	
—	OPERATION	S2PM1003E① ※S2PM1004E Refer to Operators manual	←	
PM03	LOCATION AND WEIGHT OF COMPONENTS	S5PM0301E① 1999-4	←	
PM04	MAINTENANCE STANDARDS AND TEST PROCEDURES	S5PM0401E① 1999-4	←	
—	—	—	—	
—	PREVENTIVE MAINTENANCE	S2PM0003E① ※S2PM1004E Refer to Operators manual	←	
PM07	WAOPKING STANDARDS	S5PM0701E 1997-5	←	

- First edition : May, 1997
- First revision : March, 1998
- Second revision : April, 1999

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.

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PM01

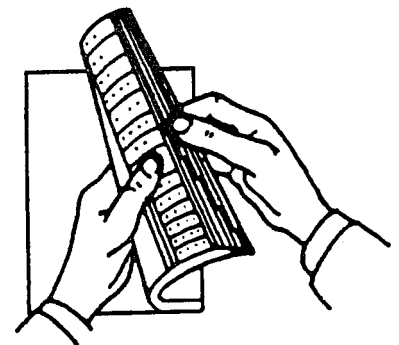
PM03

PM04

PM07

○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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PM01	SPECIFICATION	S5PM0101E② 1999-4	←	
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—	PREVENTIVE MAINTENANCE	S2PM0003E① ※S2PM1004E Refer to Operators manual	←	
PM07	WAOPKING STANDARDS	S5PM0701E 1997-5	←	

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SPECIFICATION

PM01

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Applicable Machines

SK15SR : PU06001~

SK20SR : PM02001~

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First edition	May, 1997	S5PM0101E S
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admin@servicemanualbit.com