

Shop Manual

HYDRAULIC
EXCAVATOR

PC228USLC-10

SERIAL NUMBERS 1002 and up

KOMATSU

00 Index and foreword

Index

Index (ALL-0310-001-A-00-A)

| | |
|--|--------|
| 00 Index and foreword | 00-1 |
| Index | 00-2 |
| Foreword, safety and general information | 00-14 |
| Important safety notice | 00-14 |
| How to read the shop manual | 00-21 |
| Explanation of terms for maintenance standard | 00-23 |
| Handling equipment of fuel system devices | 00-25 |
| Handling of intake system parts | 00-26 |
| Handling of hydraulic equipment | 00-27 |
| Method of disconnecting and connecting of push-pull type coupler | 00-29 |
| Handling of electrical equipment | 00-32 |
| How to read electric wire code | 00-40 |
| Precautions when performing operation | 00-43 |
| Practical use of KOMTRAX | 00-48 |
| Standard tightening torque table | 00-49 |
| List of abbreviation | 00-55 |
| Conversion table | 00-60 |
| 01 Specification | 01-1 |
| Table of contents | 01-2 |
| Specifications | 01-3 |
| Specification drawing | 01-3 |
| Working range drawings | 01-4 |
| Specifications | 01-5 |
| Weight table | 01-8 |
| Table of fuel, coolant, and lubricants | 01-10 |
| 10 Structure and function | 10-1 |
| Table of contents | 10-2 |
| Engine and cooling system | 10-3 |
| Engine related parts | 10-3 |
| KVTG | 10-5 |
| EGR system piping drawing | 10-12 |
| EGR system circuit diagram | 10-14 |
| EGR valve | 10-16 |
| EGR cooler | 10-18 |
| KCCV layout drawing | 10-19 |
| KCCV ventilator | 10-21 |
| KDPF | 10-23 |
| Cooling system | 10-27 |
| Power train | 10-29 |
| Power train system | 10-29 |
| Swing circle | 10-31 |
| Swing machinery | 10-32 |
| Final drive | 10-34 |
| Undercarriage and frame | 10-36 |
| Track frame and idler cushion | 10-36 |
| Hydraulic system | 10-38 |
| Hydraulic component layout | 10-38 |
| Valve control | 10-40 |
| Hydraulic tank | 10-41 |
| CLSS | 10-43 |
| Main pump | 10-48 |
| Control valve | 10-79 |
| Swing motor | 10-135 |
| Travel motor | 10-147 |
| PPC valve | 10-160 |
| Solenoid valve | 10-183 |
| Attachment circuit selector valve (for high pressure circuit) | 10-187 |

| | |
|---|--------|
| Attachment circuit selector valve (for low pressure circuit)..... | 10-190 |
| Center swivel joint..... | 10-193 |
| Accumulator..... | 10-195 |
| Work equipment..... | 10-197 |
| Work equipment..... | 10-197 |
| Work equipment shim..... | 10-198 |
| Bucket play adjustment shim..... | 10-199 |
| Cab and its attachments..... | 10-200 |
| Cab mount and cab tipping stopper..... | 10-200 |
| ROPS cab..... | 10-201 |
| Electrical system..... | 10-202 |
| Electrical control system..... | 10-202 |
| Machine monitor system..... | 10-257 |
| KOMTRAX system..... | 10-279 |
| Sensor..... | 10-282 |
| 20 Standard value tables..... | 20-1 |
| Table of contents..... | 20-2 |
| Standard service value table..... | 20-3 |
| Standard value table for engine..... | 20-3 |
| Standard value table for machine..... | 20-4 |
| Standard value table for electrical system..... | 20-18 |
| 30 Testing and adjusting..... | 30-1 |
| Table of contents..... | 30-2 |
| Related information on testing and adjusting..... | 30-3 |
| Tools for testing and adjusting..... | 30-3 |
| Sketch of tools for testing and adjusting..... | 30-7 |
| Engine and cooling system..... | 30-8 |
| Testing engine speed..... | 30-8 |
| Testing boost pressure..... | 30-9 |
| Testing exhaust gas color..... | 30-11 |
| Testing and adjusting valve clearance..... | 30-13 |
| Testing compression pressure..... | 30-16 |
| Testing blowby pressure..... | 30-20 |
| Testing engine oil pressure..... | 30-21 |
| Testing EGR valve and KVGT oil pressures..... | 30-22 |
| Measuring fuel pressure..... | 30-23 |
| Measuring fuel delivery, return and leakage..... | 30-29 |
| Bleeding air from fuel system..... | 30-34 |
| Testing fuel circuit for leakage..... | 30-36 |
| Handling cylinder cutout mode operation..... | 30-37 |
| Handling no-injection cranking operation..... | 30-38 |
| Testing and adjusting air conditioner compressor belt tension..... | 30-39 |
| Replacing fan belt..... | 30-41 |
| Power train..... | 30-42 |
| Testing swing circle bearing clearance..... | 30-42 |
| Undercarriage and frame..... | 30-43 |
| Testing and adjusting track tension..... | 30-43 |
| Hydraulic system..... | 30-44 |
| Releasing remaining pressure from hydraulic circuit..... | 30-44 |
| Testing and adjusting oil pressure in work equipment, swing, and travel circuits..... | 30-49 |
| Testing oil pressure of control circuit..... | 30-53 |
| Testing and adjusting oil pressure in pump PC control circuit..... | 30-54 |
| Testing and adjusting oil pressure in pump LS control circuit..... | 30-58 |
| Testing outlet pressure of solenoid valve..... | 30-66 |
| Testing PPC valve outlet pressure..... | 30-69 |
| Adjusting play of work equipment and swing PPC valves..... | 30-71 |
| Testing pump swash plate sensor..... | 30-72 |
| Isolating the parts causing hydraulic drift in work equipment..... | 30-73 |
| Testing and adjusting travel deviation..... | 30-75 |