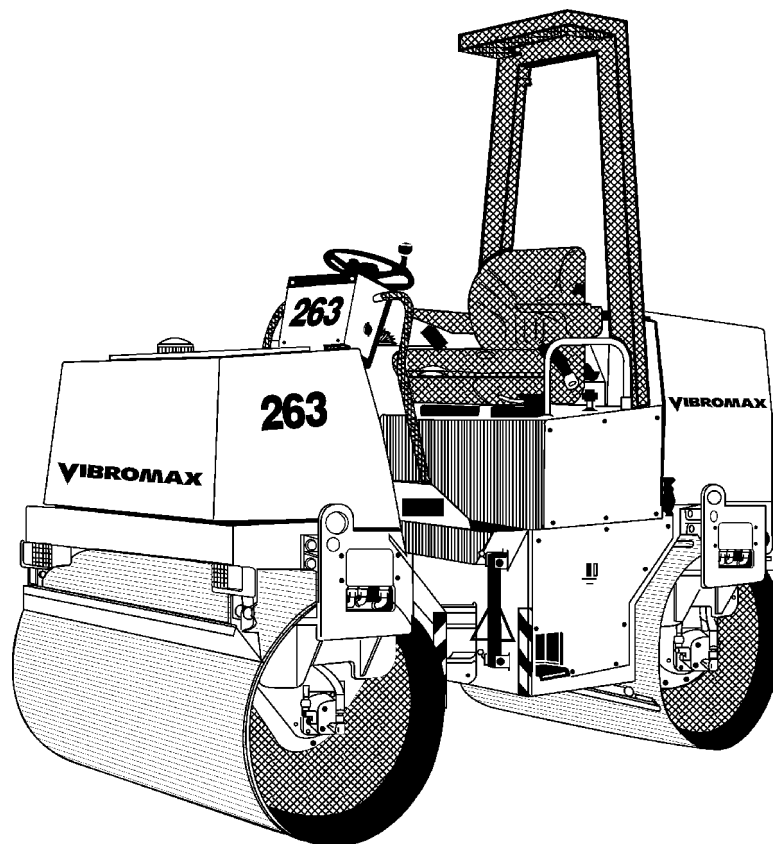


VIBROMAX

253 / 263 TANDEM ROLLER

SERVICE MANUAL SM60001

July 1998



AFTER S/N JKC5300100

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

TABLE OF CONTENTS

SECTION ONE

| | |
|--|-----------|
| GENERAL INFORMATION | 9 |
| MACHINE DESCRIPTION | 11 |
| SERIAL NUMBERS..... | 13 |
| IDENTIFYING MACHINE COMPONENTS | 14 |
| SAFETY, GENERAL | 15 |
| SPARK ARRESTER..... | 15 |
| SAFETY, PERSONAL..... | 15 |
| SAFETY, MACHINE OPERATION | 16 |
| SAFETY, MAINTENANCE | 7 |
| GENERAL INFORMATION | 20 |
| CLEANING | 20 |
| INSPECTION | 20 |
| BEARINGS | 20 |
| NEEDLE BEARINGS | 20 |
| GEARS..... | 20 |
| OIL SEALS, O-RINGS, & GASKETS | 20 |
| SHAFTS | 20 |
| SERVICE PARTS | 20 |
| LUBRICATION | 20 |
| STANDARD TORQUE DATA | 21 |
| METRIC/USA CONVERSIONS | 22 |
| MACHINE SPECIFICATIONS | 23 |
| FLUID SPECIFICATIONS | 25 |
| DIESEL FUEL SPECIFICATION..... | 26 |
| ENGINE OIL SPECIFICATION | 27 |

TABLE OF CONTENTS

SECTION TWO

| | |
|--|-----------|
| ENGINE R&I | 29 |
| ENGINE REMOVAL & INSTALLATION | 31 |
| ENGINE REMOVAL | 32 |
| ENGINE OVERHAUL | 32 |
| INSTALLATION | 33 |

SECTION THREE

| | |
|---|-----------|
| ELECTRICAL SYSTEMS..... | 35 |
| ELECTRICAL INFORMATION..... | 36 |
| RELAY LOCATION CHART | 37 |
| FUSE LOCATION CHART..... | 37 |
| UNDERSTANDING ELECTRICAL SCHEMATICS..... | 39 |
| UNDERSTANDING RELAYS | 41 |
| VIBROMAX RELAYS..... | 43 |
| EMERGENCY STOP CIRCUIT | 45 |
| STARTER/ CHARGING CIRCUIT..... | 47 |
| UNDERSTANDING BATTERIES | 47 |
| BATTERY DIAGNOSTICS | 48 |
| UNDERSTANDING ALTERNATORS | 49 |
| CHARGING SYSTEM DIAGNOSTICS | 50 |
| VOLTAGE CHECKS AT ALTERNATOR | 51 |
| SYSTEM LEAKAGE | 51 |
| CIRCUIT WIRING TEST..... | 51 |
| MEASURING ALTERNATOR OUTPUT | 52 |
| UNDERSTANDING STARTERS | 52 |
| STARTER SOLENOID | 53 |
| STARTER SYSTEM DIAGNOSTICS | 53 |
| SOLENOID CIRCUIT TEST | 53 |

TABLE OF CONTENTS

| | |
|--|-----------|
| STARTER CIRCUIT WIRING TEST | 54 |
| STARTER MOTOR TEST | 55 |
| NEUTRAL SWITCH CIRCUIT | 57 |
| INSTRUMENTATION PANEL | 59 |
| PARKING BRAKE CIRCUIT | 61 |
| VIBRATION CONTROL CIRCUIT | 61 |
| SPRINKLER CIRCUIT | 63 |
| ACCESSORY SOCKETS | 63 |
| LIGHTING CIRCUIT | 65 |
| HAZARD/ DIRECTIONAL CIRCUIT | 65 |
| BACK-UP ALARM | 66 |
| WIRE HARNESS 7130/02015 | 68 |
| WIRE HARNESS 7130/02055 | 71 |
| ELECTRICAL SCHEMATICS | 75 |

SECTION FOUR

| | |
|--|-----------|
| HYDRAULIC SYSTEMS | 81 |
| PROPULSION SYSTEM | 83 |
| PROPULSION SYSTEM DIAGNOSTICS | 83 |
| INTERNAL LEAKAGE | 83 |
| PUMP SERVO CONTROL | 84 |
| VIBRATION SYSTEM | 87 |
| VIBRATION SYSTEM DIAGNOSTICS | 88 |
| VIBRATION FREQUENCY | 88 |
| STEERING SYSTEM | 91 |
| STEERING SYSTEM DIAGNOSTICS | 91 |
| HYDRAULIC RESERVOIR | 92 |

TABLE OF CONTENTS

| | |
|--|-----|
| HYDRAULIC OIL FILTER | 93 |
| HYDRAULIC OIL RESERVOIR | 93 |
| PARKING BRAKES | 95 |
| PARKING BRAKE DIAGNOSTICS | 95 |
| HYDRAULIC TEST PORTS | 96 |
| HYDRAULIC SCHEMATIC | 97 |
| HYDRAULIC COMPONENTS | 99 |
| POCLAIN MC05 PROPULSION MOTOR | 100 |
| SAUER/SUNDSTRAND SERIES 42 PROPULSION PUMP | 103 |

SECTION FIVE

| | |
|----------------------------------|------------|
| DRUM DRIVE | 107 |
| DRUM ASSEMBLY DRAWING | 111 |
| DRUM REMOVAL | 115 |
| DRIVE MOTOR REMOVAL | 115 |
| DRIVE MOTOR REPAIR | 117 |
| DRIVE MOTOR INSTALLATION | 117 |
| DRUM DRIVE BEARING REMOVAL | 117 |
| DRUM BEARING INSTALLATION | 119 |
| DRUM INSTALLATION | 119 |

SECTION SIX

| | |
|-----------------------------------|------------|
| PARKING BRAKE SYSTEM | 121 |
| PARK BRAKE TESTING | 123 |
| BRAKE RELEASE FOR TOWING | 123 |

TABLE OF CONTENTS

| | |
|----------------------------|------------|
| BRAKE REPAIRS | 125 |
| BRAKE DISASSEMBLY | 125 |
| BRAKE ASSEMBLY | 125 |

SECTION SEVEN

| | |
|------------------------------------|------------|
| VIBRATORY SYSTEM | 127 |
| VIBRATORY SHAFT REMOVAL..... | 133 |
| VIBRATORY SHAFT INSTALLATION | 135 |

SECTION EIGHT

| | |
|-------------------------------------|------------|
| STEERING SYSTEM | 137 |
| ARTICULATION JOINTS | 139 |
| ARTICULATION PARTS | 140 |
| HORIZONTAL PIVOT DISASSEMBLY | 143 |
| STEERING PIVOT DISASSEMBLY | 143 |
| STEERING PIVOT ASSEMBLY | 145 |
| HORIZONTAL PIVOT INSTALLATION | 145 |
| STEERING CYLINDER | 146 |

SECTION NINE

| | |
|--------------------------|------------|
| CHASSIS | 147 |
| FRAME | 149 |
| PANELS | 150 |
| OPERATOR PLATFORM..... | 151 |
| WATER TANK | 152 |
| WATER TANK COATING | 153 |
| INERTOL POXITAR | 153 |

TABLE OF CONTENTS

| | |
|--|------------|
| ROLL OVER PROTECTIVE STRUCTURE (ROPS) | 154 |
| ROPS MAINTENANCE | 155 |
| ROPS DAMAGE | 155 |
| ROPS BOLT TORQUE | 155 |
| SUN ROOF | 156 |

SECTION TEN

| | |
|--|------------|
| ATTACHMENTS | 157 |
| WATER SPRINKLER SYSTEM | 158 |
| SPRINKLER FUNCTION..... | 159 |
| STORAGE PREPARATION | 159 |
| DRUM SCRAPERS | 160 |
| SCRAPER ADJUSTMENT | 161 |
| LIGHT KIT 87130/20120 | 162 |
| LIGHT KIT INSTALLATION | 163 |
| SPOTLIGHT KIT 87130/20100 | 164 |
| SPOTLIGHT INSTALLATION | 165 |
| BACK UP ALARM KIT 87130/20200 | 166 |
| ALARM INSTALLATION | 167 |

SECTION ONE

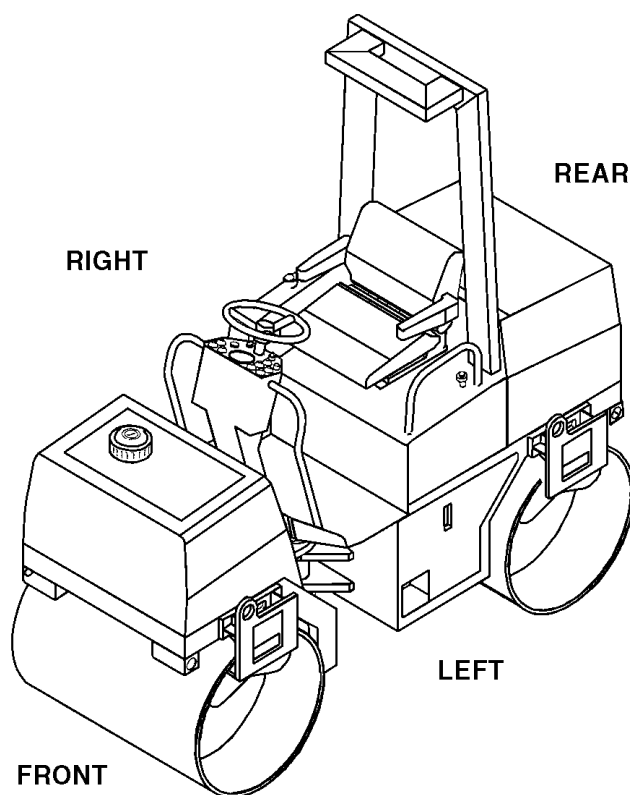
GENERAL INFORMATION

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

MACHINE DESCRIPTION



The 253 Series vibratory roller is a “new from the ground up” machine, replacing the 252. The 253 is a 2.5 metric ton, tandem drum machine with articulated steering, hydrostatic drive and a hydraulically driven vibration system. The 253 has a 1000 mm (39 inch) drum width while the 263 is the 1200 mm (47 inch) drum width version.

A Kubota D1403B, water cooled, three cylinder in-line diesel engine, mounted in the rear chassis, provides the power for the machine. The engine has a 29.0 Net Horse Power rating at 2600 RPM.

A Sauer Sunstrand variable displacement hydrostatic pump, used for machine propulsion, is mounted to the flywheel end of the engine. It provides oil for the front and rear Poclairn, fixed displacement, drum drive motors in a parallel path. The motors are located on the right hand side of the drums and are connected directly to the drum, without gear reduction.

The vibration system consists of a fixed displacement gear pump mounted to the back of the propulsion pump. This gear pump drives the two gear motors (one on each drum, left hand side) in a series flow path, with options of vibration to the front drum only, rear drum only, both drums or neither drum. Oil from the vibration circuit passes through an air to oil cooler at the engine radiator. The exciter shafts and the drum bearings are oil lubricated, eliminating the need for grease zerks.

Front and rear parking brakes are provided on the 253/263. The drum brakes are integral to the drive motors. The brakes are spring applied / hydraulically released and are controlled by a switch on the dash and by an emergency stop switch on the right operators console. A tow valve, located under the operators seat, provides for brake release for towing purposes.

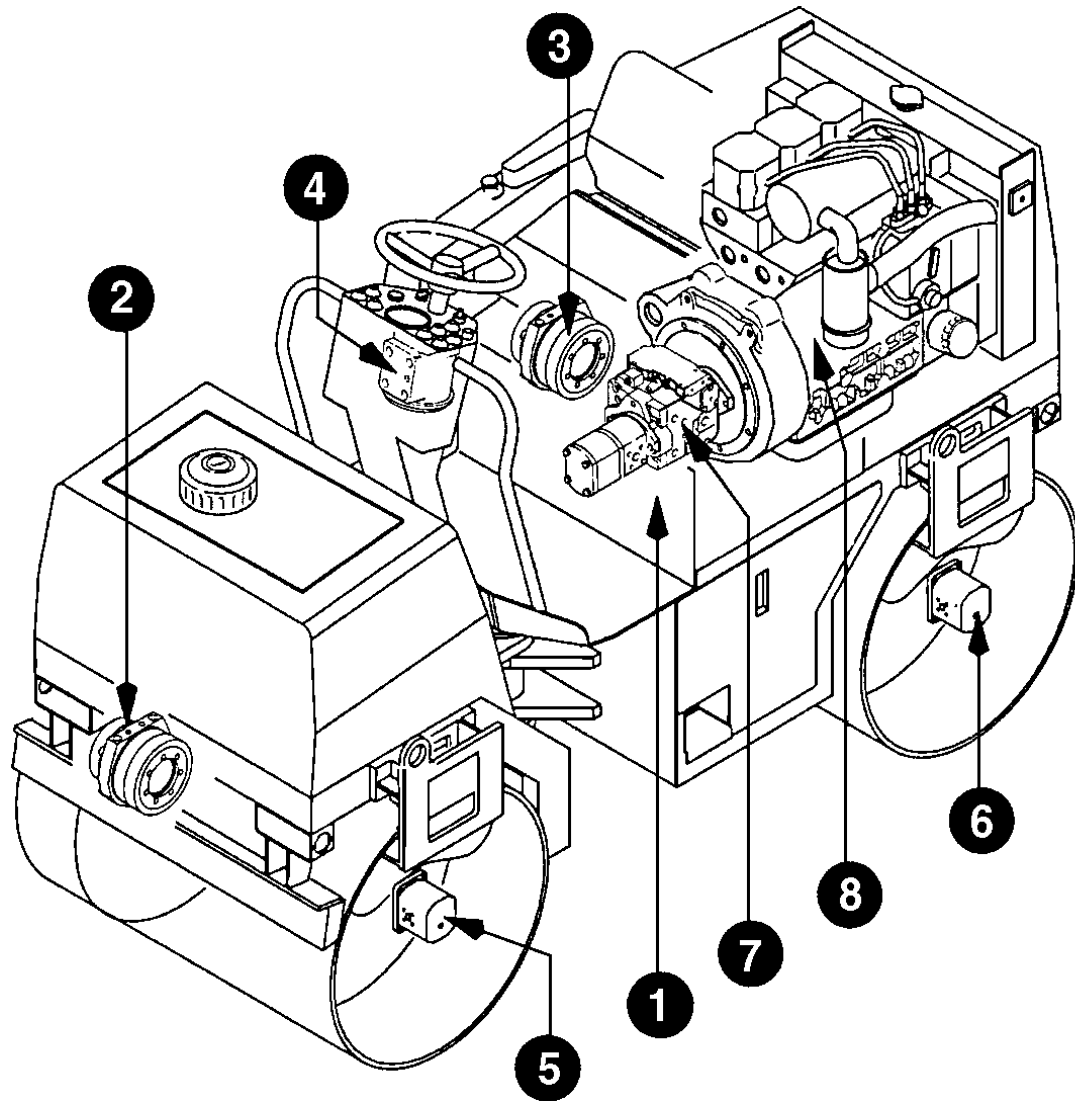
A steering pump, mounted to the back of the vibration pump, provides oil for the steering control valve and a single steering cylinder at the articulation joint. The joint is maintenance free, providing 40 degrees of articulation and 15 degrees of oscillation. An articulation joint safety lock completes the steering system.

The return oil flow from the vibratory circuit and the steering circuit passes through a 10 micron oil filter mounted in the top of the hydraulic reservoir. A filter bypass and a pressure differential switch completes the filter circuit. The hydraulic reservoir is located below the operators platform on the left side of the rear chassis. The modular design of the reservoir makes it possible to completely remove the reservoir if necessary.

Pressure testing of the hydraulic system has been simplified by the location of a test station in the left side of the engine compartment. Pressure testing of the drive, charge, brake release, vibratory and steering systems can be performed from one location.

The electrical system consists of the standard starter, battery and charging circuit along with optional lighting, hazard and directional lights. The instrument panel includes switches for vibration, sprinklers, lights and brakes along with the standard instrument cluster of warning lights and an hour meter. An emergency stop button is located right of the operator's seat, just to the front of the lockable access panel for the fuse compartment. All electrical control components are located behind a removable panel on the right side of the operators platform.

A 53 gallon water tank is located on the front chassis, providing water for the asphalt sprinkler system. The tank's modular design allows for easy removal if necessary. Fixed position scrapers on the front and rear of each drum and a pressurized sprinkler bar on each drum, complete the system.



SERIAL NUMBERS

| | | |
|---|----------------------------|--|
| 1 | Model / Serial Number | |
| 2 | Front Drum Drive Motor S/N | |
| 3 | Rear Drum Drive Motor S/N | |
| 4 | Steering Unit S/N | |
| 5 | Front Vibratory Motor S/N | |
| 6 | Rear Vibratory Motor S/N | |
| 7 | Hydraulic Pumps S/N | |
| 8 | Engine S/N | |

Buy Now



Our support email:

ebooklibonline@outlook.com