

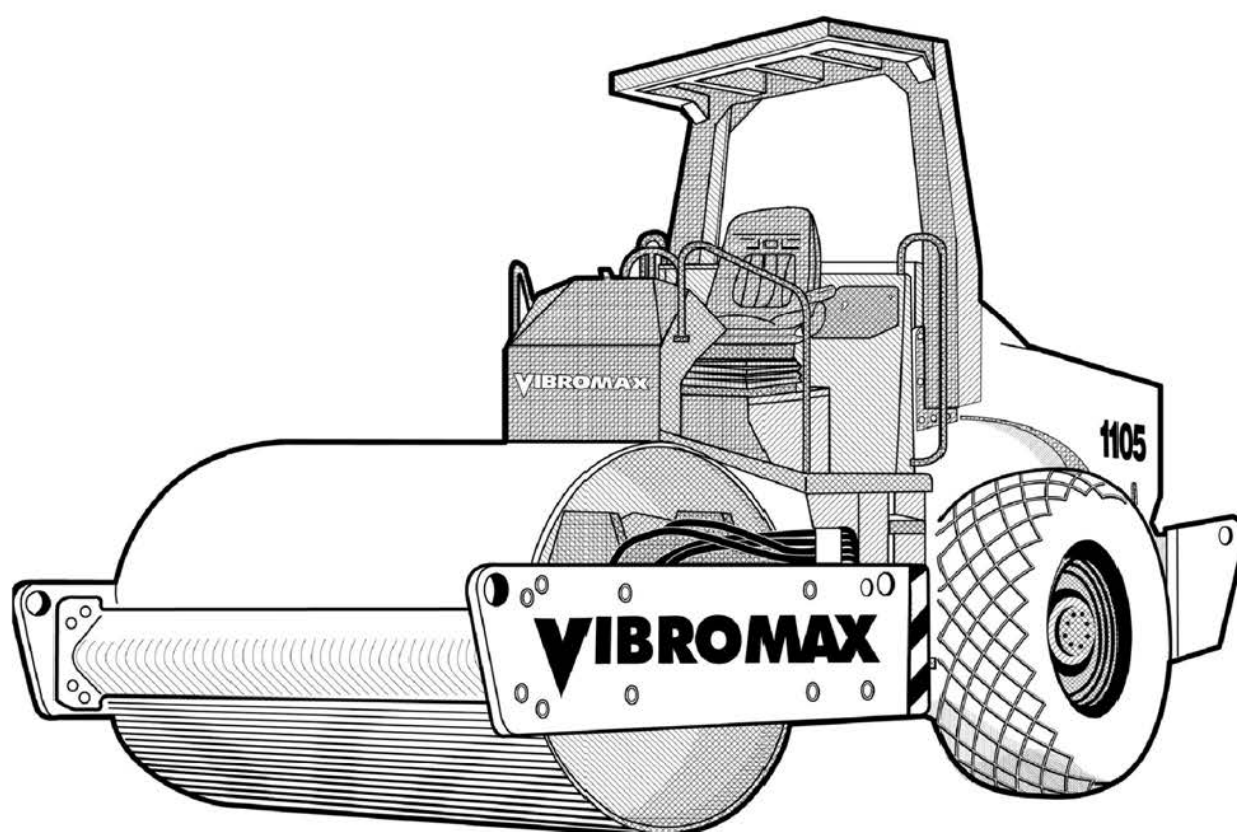


## SINGLE DRUM ROLLER

*SERVICE MANUAL SM95005*

March 2003

**Models 1105, 1106, 1405, 1805**



**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**

|                                      |        |
|--------------------------------------|--------|
| MACHINE DESCRIPTION .....            | 1 - 3  |
| SERIAL NUMBERS .....                 | 1 - 5  |
| IDENTIFYING MACHINE COMPONENTS ..... | 1 - 6  |
| FLUID SPECIFICATIONS .....           | 1 - 7  |
| MACHINE SPECIFICATIONS .....         | 1 - 8  |
| Model 1105 .....                     | 1 - 9  |
| Model 1106 .....                     | 1 - 11 |
| Model 1405 .....                     | 1 - 13 |
| Model 1805 .....                     | 1 - 15 |
| STANDARD TORQUE DATA .....           | 1 - 16 |
| DIESEL FUEL SPECIFICATION .....      | 1 - 18 |
| ENGINE OIL SPECIFICATION .....       | 1 - 19 |
| SAFETY, GENERAL .....                | 1 - 20 |
| SPARK ARRESTER .....                 | 1 - 20 |
| SAFETY, PERSONAL .....               | 1 - 21 |
| SAFETY, MACHINE OPERATION .....      | 1 - 22 |
| SAFETY, MAINTENANCE .....            | 1 - 25 |
| SAFETY, DECALS .....                 | 1 - 27 |
| HYDRAULIC HOOD OPERATION .....       | 1 - 30 |
| HOOD INSTRUCTIONS .....              | 1 - 32 |

### **SECTION TWO**

#### **ENGINE**

|                               |       |
|-------------------------------|-------|
| ENGINE DATA .....             | 2 - 2 |
| CUMMINS ENGINE WARRANTY ..... | 2 - 3 |
| ENGINE REMOVAL .....          | 2 - 4 |

## table of contents

### **SECTION THREE**

### **ELECTRICAL**

|                                                      |        |
|------------------------------------------------------|--------|
| GENERAL INFORMATION .....                            | 3 - 2  |
| FUSE LOCATION .....                                  | 3 - 3  |
| RELAY LOCATION .....                                 | 3 - 3  |
| INSTRUMENT PANEL .....                               | 3 - 4  |
| UNDERSTANDING ELECTRICAL SCHEMATICS .....            | 3 - 7  |
| UNDERSTANDING RELAYS .....                           | 3 - 9  |
| VIBROMAX RELAYS .....                                | 3 - 11 |
| STARTER/CHARGING CIRCUIT (Cummins 6B5.9C) .....      | 3 - 13 |
| STARTER/CHARGING CIRCUIT (Cummins 6BT5.9C) .....     | 3 - 15 |
| UNDERSTANDING BATTERIES .....                        | 3 - 15 |
| BATTERY DIAGNOSTICS .....                            | 3 - 16 |
| UNDERSTANDING ALTERNATORS .....                      | 3 - 17 |
| CHARGING SYSTEM DIAGNOSTICS .....                    | 3 - 18 |
| VOLTAGE CHECKS AT ALTERNATOR .....                   | 3 - 19 |
| SYSTEM LEAKAGE .....                                 | 3 - 19 |
| CIRCUIT WIRING TEST .....                            | 3 - 19 |
| MEASURING ALTERNATOR OUTPUT .....                    | 3 - 20 |
| UNDERSTANDING STARTERS .....                         | 3 - 20 |
| STARTER SOLENOID .....                               | 3 - 21 |
| STARTER SYSTEM DIAGNOSTICS .....                     | 3 - 21 |
| SOLENOID CIRCUIT TEST .....                          | 3 - 21 |
| STARTER CIRCUIT WIRING TEST .....                    | 3 - 22 |
| STARTER MOTOR TEST .....                             | 3 - 23 |
| INSTRUMENTATION PANEL .....                          | 3 - 25 |
| EMERGENCY STOP SWITCH/ BRAKE SWITCH .....            | 3 - 27 |
| HIGH SPEED CIRCUIT .....                             | 3 - 29 |
| VIBRATION CIRCUIT .....                              | 3 - 31 |
| LIGHTING CIRCUIT .....                               | 3 - 33 |
| WORK LIGHTS, ACCESSORY PLUG, HEATER AND WIPERS ..... | 3 - 35 |
| CAB WIRING .....                                     | 3 - 44 |
| WIRE HARNESS 7241/80315 (0) .....                    | 3 - 45 |
| WIRE CHART 7241/80315 (0) .....                      | 3 - 50 |
| WIRE HARNESS 7241/80110(0)A .....                    | 3 - 54 |
| WIRE CHART 7241/80110(0)A .....                      | 3 - 55 |
| WIRE HARNESS 7241/80510(0)B .....                    | 3 - 56 |
| WIRE CHART 7241/80510(0)B .....                      | 3 - 57 |

## table of contents

### **SECTION FOUR**

#### **HYDRAULIC**

|                                     |        |
|-------------------------------------|--------|
| PUMP SUCTION LINES .....            | 4 - 2  |
| HYDRAULIC COOLING SYSTEM .....      | 4 - 4  |
| HYDRAULIC DRAIN LINES .....         | 4 - 6  |
| HYDRAULIC TEST SYSTEM .....         | 4 - 8  |
| HYDRAULIC TEST STATION .....        | 4 - 9  |
| CHARGE SYSTEM .....                 | 4 - 11 |
| PROPULSION SYSTEM .....             | 4 - 13 |
| MULTIFUNCTION VALVES .....          | 4 - 17 |
| PROPULSION SYSTEM DIAGNOSTICS ..... | 4 - 18 |
| INTERNAL LEAKAGE .....              | 4 - 18 |
| PUMP SERVO CONTROL .....            | 4 - 19 |
| VIBRATION SYSTEM .....              | 4 - 21 |
| VIBRATION FREQUENCY .....           | 4 - 23 |
| VIBRATION AMPLITUDE.....            | 4 - 25 |
| VIBRATORY SYSTEM DIAGNOSTICS .....  | 4 - 26 |
| STEERING SYSTEM .....               | 4 - 27 |
| PARKING BRAKE SYSTEM .....          | 4 - 30 |
| TOWING YOUR MACHINE .....           | 4 - 31 |
| TOWING PROCEDURE .....              | 4 - 32 |
| PARKING BRAKE DIAGNOSTICS .....     | 4 - 32 |
| DIFFERENTIAL LOCK SYSTEM .....      | 4 - 35 |
| HOOD LIFT SYSTEM.....               | 4 - 38 |
| HYDRAULIC COMPONENTS.....           | 4 - 40 |
| HYDRAULIC SCHEMATIC .....           | 4 - 41 |

### **SECTION FIVE**

#### **POWER TRAIN**

|                                 |        |
|---------------------------------|--------|
| GENERAL INFORMATION .....       | 5 - 2  |
| OPERATION .....                 | 5 - 3  |
| SPETH AXLE .....                | 5 - 4  |
| REAR AXLE REMOVAL.....          | 5 - 5  |
| REAR AXLE INSTALLATION.....     | 5 - 6  |
| AXLE TUBE DISASSEMBLY .....     | 5 - 8  |
| PLANETARY DISSASSEMBLY .....    | 5 - 10 |
| DIFFERENTIAL LOCK REMOVAL ..... | 5 - 12 |
| DIFFERENTIAL LOCK ASSEMBLY..... | 5 - 13 |

## **table of contents**

|                                        |        |
|----------------------------------------|--------|
| AXLE TUBE AND PLANETARY ASSEMBLY ..... | 5 - 14 |
| INTERMEDIATE GEARBOX DISASSEMBLY ..... | 5 - 18 |
| INTERMEDIATE GEARBOX ASSEMBLY .....    | 5 - 20 |
| DIFFERENTIAL DISASSEMBLY .....         | 5 - 22 |
| DIFFERENTIAL ASSEMBLY .....            | 5 - 24 |
| DRUM REMOVAL .....                     | 5 - 29 |
| DRUM INSTALLATION .....                | 5 - 29 |
| DRUM DRIVE .....                       | 5 - 30 |
| DRUM DRIVE BEARING REMOVAL .....       | 5 - 32 |
| DRUM DRIVE BEARING INSTALLATION .....  | 5 - 34 |
| DRUM DRIVE MOTOR REPAIRS .....         | 5 - 36 |
| DRUM DRIVE GEARBOX .....               | 5 - 36 |
| GFT 17 T2/312 2 GEARBOX .....          | 5 - 38 |
| GFT 36 T3 1042 GEARBOX .....           | 5 - 40 |

## **SECTION SIX**

### **PARKING BRAKE SYSTEM**

|                                |       |
|--------------------------------|-------|
| DESCRIPTION .....              | 6 - 2 |
| BRAKE RELEASE AND TOWING ..... | 6 - 4 |
| TOWING PROCEDURE .....         | 6 - 5 |
| AXLE BRAKE .....               | 6 - 6 |
| AXLE BRAKE PARTS LIST .....    | 6 - 8 |

## **SECTION SEVEN**

### **VIBRATION SYSTEM**

|                                    |        |
|------------------------------------|--------|
| VIBRATION SYSTEM .....             | 7 - 2  |
| VIBRATION FREQUENCY .....          | 7 - 3  |
| VIBRATION AMPLITUDE .....          | 7 - 5  |
| VIBRATORY SYSTEM DIAGNOSTICS ..... | 7 - 6  |
| LIFTING DEVICE .....               | 7 - 7  |
| DRUM REMOVAL .....                 | 7 - 8  |
| DRUM INSTALLATION .....            | 7 - 8  |
| EXCITER BEARING REMOVAL .....      | 7 - 9  |
| EXCITER BEARING ASSEMBLY .....     | 7 - 13 |
| DRUM EXCITER SHAFT .....           | 7 - 14 |

## table of contents

### **SECTION EIGHT**

#### **STEERING SYSTEM**

|                           |        |
|---------------------------|--------|
| SPECIAL TOOLS .....       | 8 - 2  |
| ARTICULATION JOINTS ..... | 8 - 3  |
| JOINT DISASSEMBLY .....   | 8 - 5  |
| JOINT ASSEMBLY .....      | 8 - 9  |
| STEERING CYLINDER .....   | 8 - 12 |

### **SECTION NINE**

#### **CHASSIS**

|                                     |       |
|-------------------------------------|-------|
| DRUM FRAME .....                    | 9 - 2 |
| REAR FRAME .....                    | 9 - 3 |
| HOOD .....                          | 9 - 4 |
| OPERATOR PLATFORM .....             | 9 - 5 |
| ROLLOVER PROTECTION STRUCTURE ..... | 9 - 6 |

### **SECTION TEN**

#### **ATTACHMENTS**

|                             |        |
|-----------------------------|--------|
| LEVELING BLADE .....        | 10 - 2 |
| BLADE CONTROL .....         | 10 - 3 |
| BLADE HYDRAULIC LINES ..... | 10 - 4 |