Open front screen

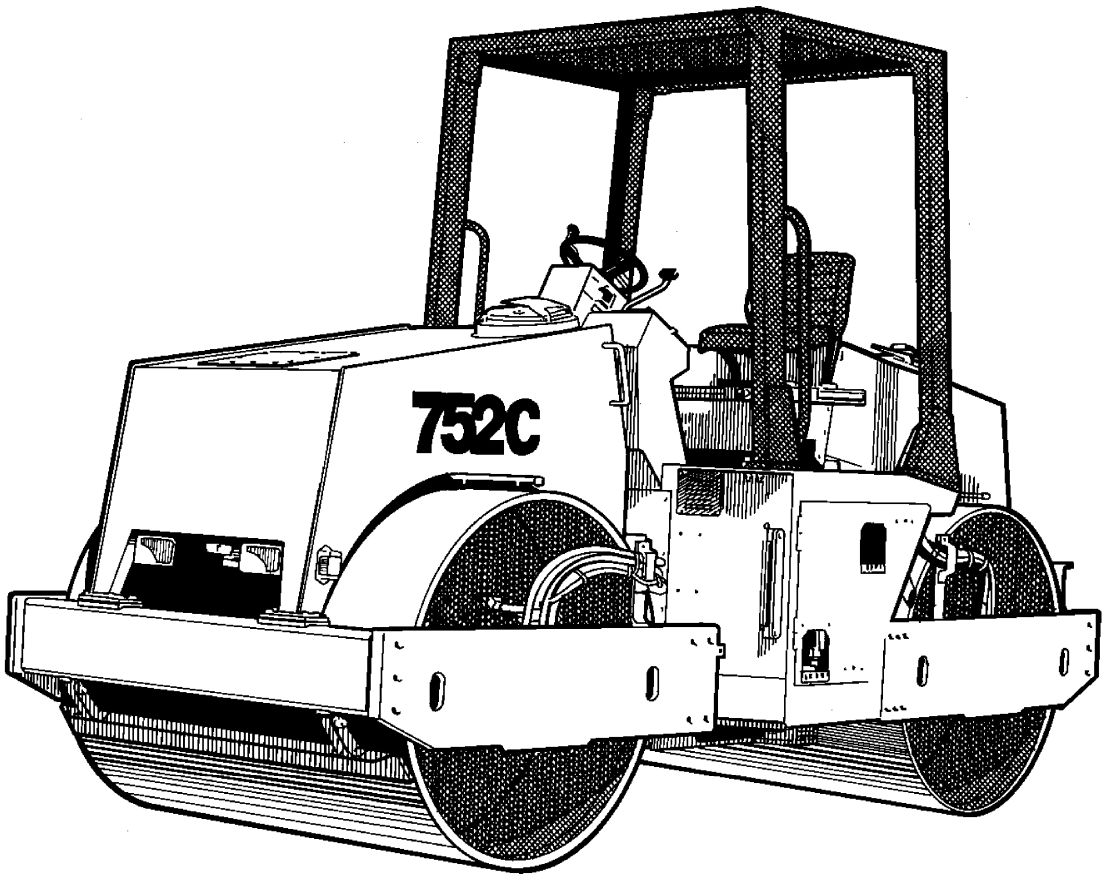
VIBROMAX

TANDEM DRUM ROLLER

SERVICE MANUAL SM71001

May 2000

Model 752C



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.

SECTION ONE

SECTION TWO

SECTION THREE

SECTION FOUR

SECTION FIVE

SECTION SIX

SECTION SEVEN

SECTION EIGHT

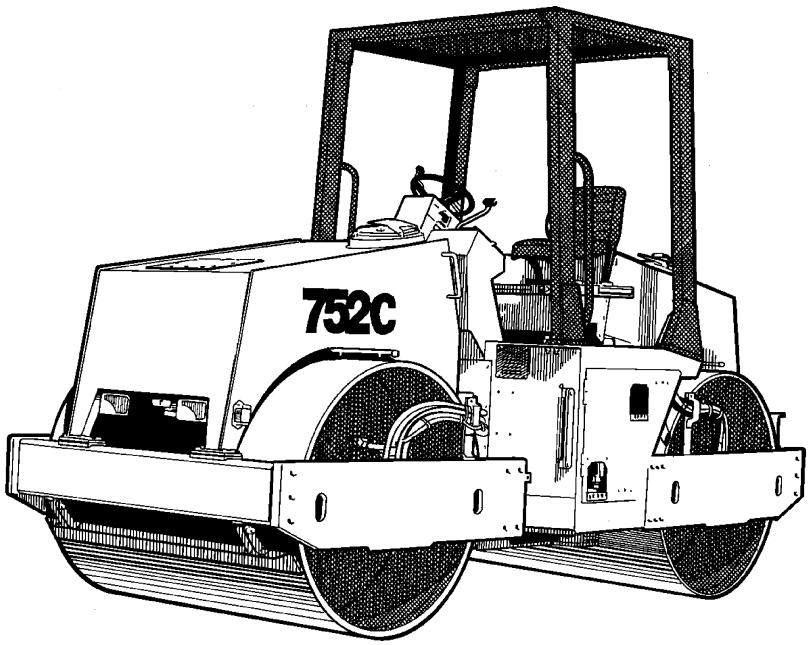
SECTION NINE

SECTION TEN

SECTION ONE

GENERAL INFORMATION

MACHINE DESCRIPTION



In the fall of 1999 Vibromax introduced the new 752 series "C" tandem drum vibratory roller. The 752C has a significant increase in engine power to 110 hp (82 kW). The operating weight was increased to 23,300 lbs. (10568 kg) while keeping the same 66 inch (1675mm) drum size.

The new roller uses the Cummins 3.9 liter 4 cylinder turbo charged engine. The new engine is tuned to meet the latest EPA emissions standards.

A Mannesman Rexroth variable displacement, axial piston hydrostatic pump, used for machine propulsion, is mounted to the flywheel end of the engine. It provides oil to the front and rear drum drive motors in a parallel path. The Rexroth 2 speed drum drive motors are mounted on the left side of the drums, drive through L&S planetary gearboxes, and are isolated from the drum by rubber buffers. This arrangement is used in the heavy roller models with a great deal of success. These machines come standard with parking brakes at both the front drum and the rear drum. A spring applied-hydraulically released multi disc brake is part of the drum drive gearbox.

The vibration system on the 752C uses a Rexroth hydrostatic pump mounted directly behind the propulsion pump. It is similar in design to the propulsion pump. The vibratory pump supplies oil to a Rexroth hydrostatic motor mounted at the right side of the drum. The new model 752C operates at frequencies of 1980 or 2520 vibrations per minute. Vibratory operations can be done with front drum only, both drums together, or rear drum only.

A steering/charge pump, mounted to the auxiliary drive at the front of the engine, provides the oil needed for steering. The steering pump also acts as the charge pump in the propulsion/ vibration circuit. The steering pump draws oil from the reservoir, passes it through the steering control valve, through the inline hydraulic filter, and into the charge circuit.

The electrical system consists of a 12 volt battery, starter, alternator system, optional lighting and standard instrumentation.

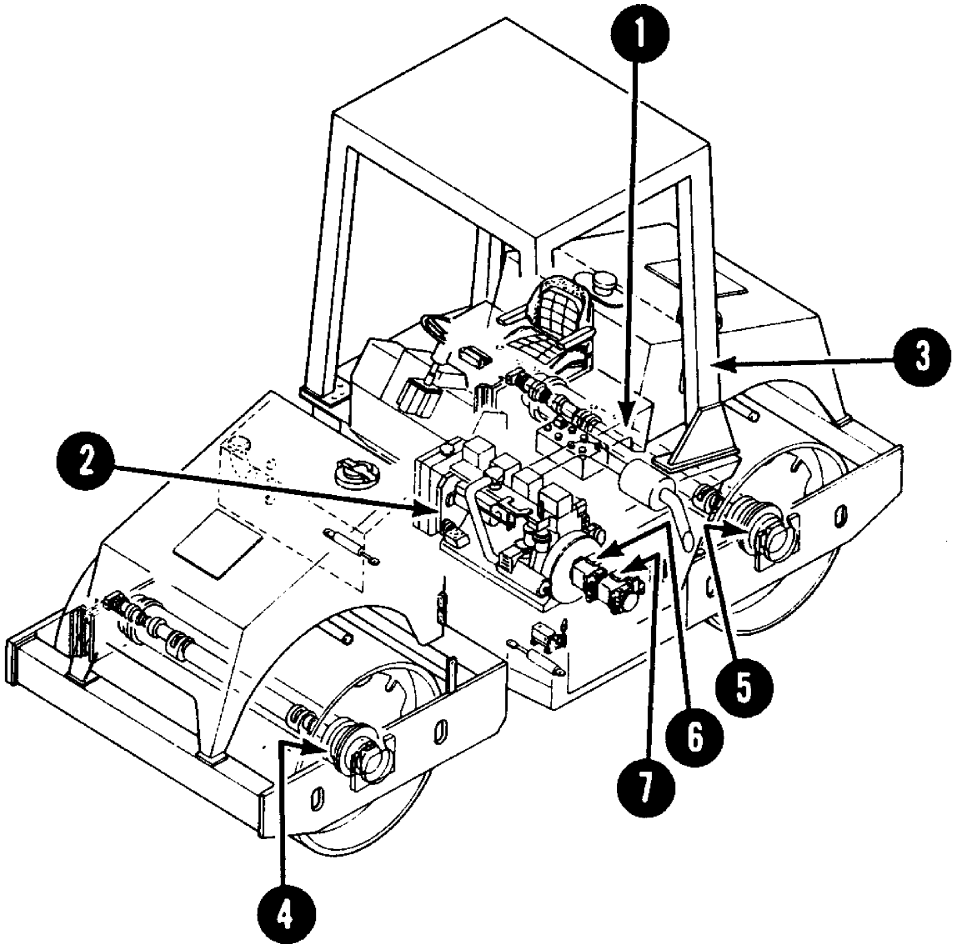
The model 752C comes standard with:

Beveled drums - Dual scrapers on each drum - Automatic vibration off in neutral - Pressurized intermittent sprinkler system - Lockable instrument panel cover - Deluxe adjustable, 3 position operator's seat - Fuel level & engine temperature gauges - Hourmeter - Horn - Indicator lights for alternator charge, engine oil pressure, low water tank level and neutral position - Backup alarm - 4 post ROPS with canopy.

Option equipment available:

Gravity water sprinkler - Road lights - Front & rear halogen work lights - Speed limiter - Water level indicator gauge.

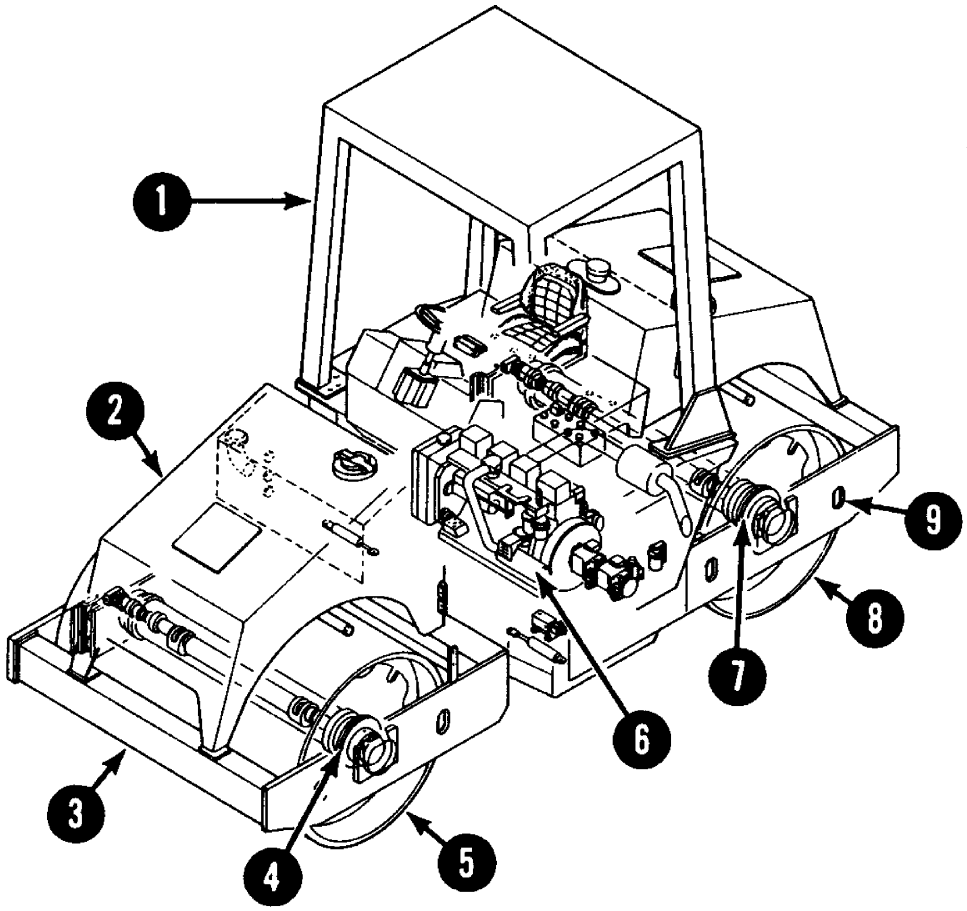
MACHINE SERIAL NUMBERS



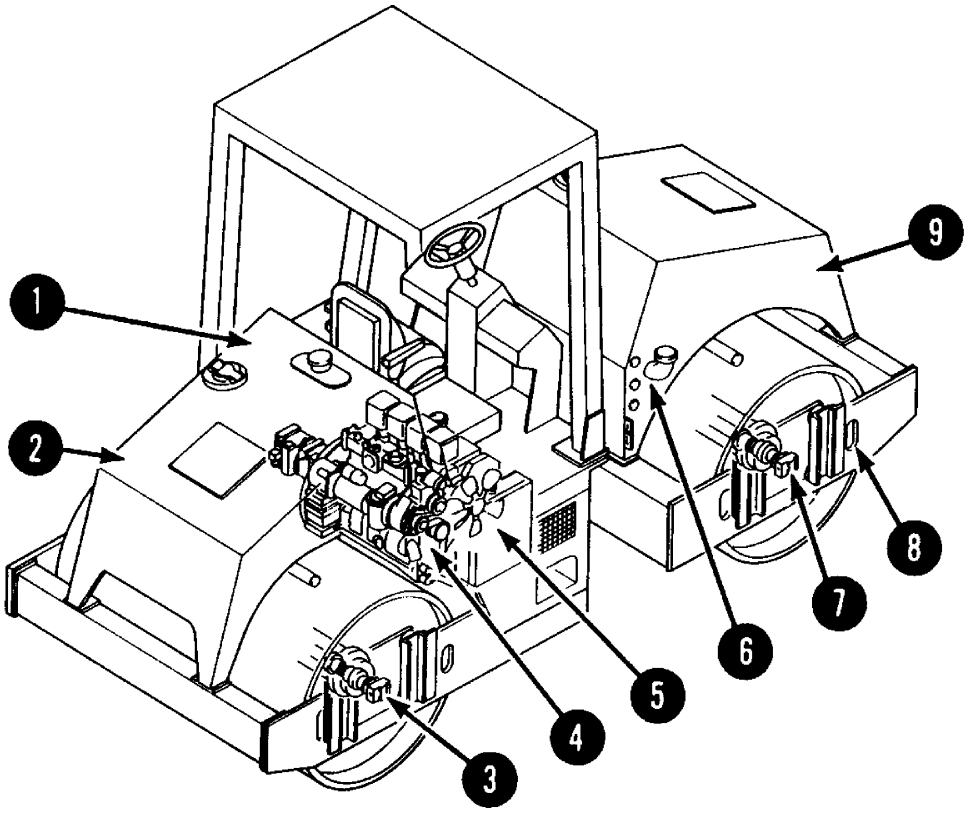
Enter the machine and component serial numbers highlighted in the above drawing. When ordering spare parts or requesting information on the machine, have these numbers available for your dealer. Make a copy of these numbers and keep it in a safe place. If the machine is stolen, these numbers should be made available to the investigating authorities.

1	Model / Serial Number	
2	Engine Serial Number	
3	ROPS Serial Number	
4	Front Drive Motor Serial Number	
5	Rear Drive Motor Serial Number	
6	Drive Pump Serial Number	
7	Vibration Pump Serial Number	

IDENTIFYING MACHINE COMPONENTS



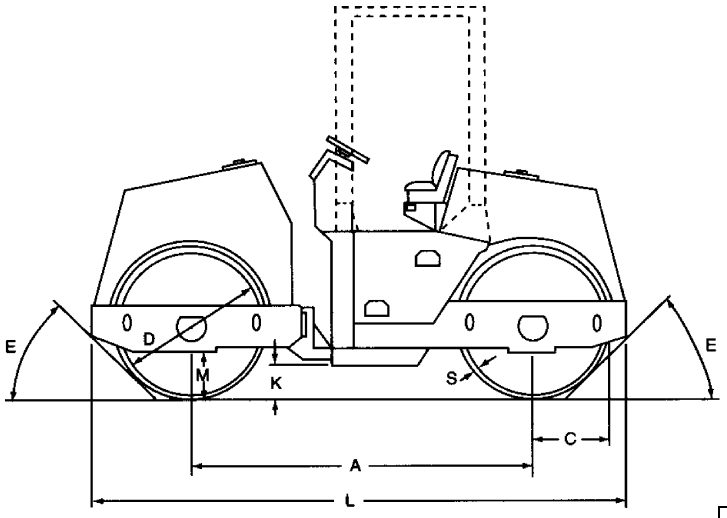
1	rollover protection structure	6	dry air cleaner
2	front water tank	7	rear drive motor & gearbox
3	scraper	8	rear drum
4	front drive motor & gearbox	9	lifting and towing eye
5	front drum		

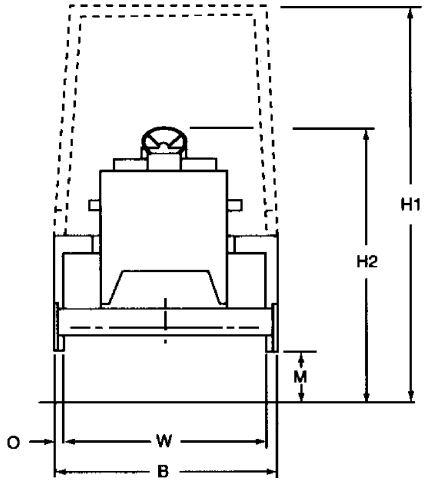


1	hydraulic tank	6	fuel tank
2	rear water tank	7	front vibration motor
3	rear vibration motor	8	lifting and towing eye
4	engine	9	front water tank
5	radiator and oil cooler		

MACHINE SPECIFICATIONS

MODEL 752C





	in.	mm
A	106	2690
B	77.6	1970
C	30.3	770
D	48	1220
H1	117	2970
H2	87	2210
K	10.6	270
L	166.5	4230
M	15.9	405
O	5.8	147.5
S	1.45	37
W	66	1675
E	40^{o}	

ENGINE		
Make/Model/Type/Cooling	Cummins 4BT3.9 C110, 4 cylinder diesel, water cooled	
Displacement - cu. in. (cc)	240 cu.in. (3920cc)	
HP, SAE net (kW) @2500 rpm	110 (82)	
Air Cleaner	Dual replaceable elements	
Fuel Consumption- gal/hr (l/hr)	3.0 (11.5)	
Fuel capacity - gal (ltr)	37 (140)	
Electrical system	12-volt	
Battery, amp hours/Alternator, amps	120/65	
Drive		
Propulsion	Infinitely variable hydrostatic drive to both drums	
Travel speed, 1st/2nd/3rd - mph (km/hr)	0-2.4 (0-4) / 0-3.9 (0-6.3) / 0-7.4 (0-12)	
Theoretical gradeability, forward -%	35	
Brakes, operating	Hydrostatic braking thru ground drive	
Brakes, parking	Spring applied hydraulic release on drum gearboxes	
Steering	Articulated, hydraulic powered	
Articulation/Oscillation	25/10	
Operating Data		
Operating weight - lb (kg)	23,300 (10568)	
Turning radius, inside - in (mm)	200 (5080)	
Static linear drum load - lb/in (kg/cm)	front 168.6 (30) / rear 184.5 (33)	
	Low frequency	**High frequency**
Frequency - vpm (Hz)	1980 (33)	2520 (42)
Nominal amplitude - in (mm)	.041 (1.05)	.014 (.36)
Centrifugal force per drum - lbf (kN)	26,412 (117)	14,668 (65)
Centrifugal force/rolling width - lbf/in. (N/cm)	400 (700)	222 (389)
Drum shell thickness - in (mm)	1.45 (37)	
Water tank capacity - gal (L)	front 121.5 (460) / rear 95.1 (360)	

STANDARD TORQUE DATA

Where no special torque data is specified, the following torque figures should be applied. Threads should be lubricated with engine oil or grease.

STANDARD TORQUE SPECIFICATIONS +/- 10%

	GRADE 8.8		GRADE 10.9		GRADE 12.9	
SIZE	ft-lbs	Nm	ft-lbs	Nm	ft-lbs	Nm
5mm	4	5.5	5.5	7.5	6.6	9
6mm	6.6	9	9.2	12.5	11	15
8mm	16.5	22.5	23	31.5	26.5	36
10mm	32	44	45	62	55	75
12mm	57	77.5	81	110	95	130
14mm	88	120	125	170	155	210
16mm	140	190	195	265	236	320
18mm	192	260	269	365	320	435
20mm	273	370	383	520	457	620
22mm	369	500	516	700	619	840
24mm	471	640	665	900	796	1080
27mm	702	950	996	1350	1195	1620
30mm	955	1300	1328	1800	1593	2160

NUTS FOR TUBES AND HOSES

DIAMETER & PITCH	NEWTONS/METER	POUNDS/FOOT
16MM X 1.5	20	14.5
18MM X 1.5	35	26
20MMX1.45	45	33.2
24MM X 1.5	60	44

FITTINGS, CONNECTIONS AND PLUGS

DIAMETER & PITCH	NEWTONS/METER	POUNDS/FOOT
10MM X 1	20	14.5
12MM X 1.5	35	26
14MM X 1.5	45	33.2

FITTINGS, CONNECTIONS AND PLUGS

DIAMETER & PITCH	NEWTONS/METER	POUNDS/FOOT
16MM X 1.5	60	44
18MM X 1.5	70	51
22MM X 1.5	100	73
27MM X 2	200	147
33MM X 2	280	207
42MM X 2	380	281

FLANGES

DIAMETER & PITCH	NEWTONS/METER	POUNDS/FOOT
8MM X 1.5	28	21
10MM X 1.5	55	41
12MM X 1.75	90	67
14MM X 2	145	107
16MM X 2	230	170

FLUID CAPACITY - 752C

MACHINE PART	CAPACITY USA (metric)	SPECIFICATIONS
Fuel tank	37 gal (140 l)	see diesel fuel
Engine crankcase	11.5 qts(10.9 l)	engine oil API classification API-CD MIL-L-2104C multigrade engine oil (see oil chart) single grade engine oil (see oil chart)
Hydraulic system Reservoir refill	47.6 gal (180 l)	cold weather HLP 46 DIN 51524/2 hot weather HLP 68 DIN 51524/2 Mobil DTE 25,26 Shell Tellus OL 46,68 Amoco Rykon HD 46,68 Texaco Rando HD 46,68
Drum gearbox (each drum)	1.4 qts (1.3 l)	CPL 220 LS 2 DIN 51517/3 Mobilgear 630 Mobilgear SHC 220 Texaco Syngear 220
Vibration system (each drum)	2.6 qts (2.5 l)	CLP DIN 51517/3 Mobil Gear 627 Shell Omala 100 Texaco Meropa 100
Battery	as required	Distilled water
Grease	as required	Molydisulfide grease
Engine coolant	20 qts (19 l)	50% ethylene glycol and 50% water -34 degrees F (-37 degrees C)

DIESEL FUEL SPECIFICATION

If fuel is stored for a long time, foreign particles or water can collect in the fuel storage tank. Many engine problems are caused by contaminated fuel. Store fuel outside and keep the fuel as cool as possible. Drain water from the fuel storage tank at regular intervals.

NOTE: Paraffin crystals will start to form in fuel when the fuel temperature falls below the fuel's cloud point. These paraffin crystals will clog the fuel filter and cause the engine to stop or lose power. At ambient temperatures above 32°F (0°C) use #2 diesel fuel. At temperature below 32°F (0°C) use #1 diesel fuel.

Different brands of fuel can exhibit different properties. Make sure that the number 2 diesel fuel you use meets the following minimum requirements.

MINIMUM REQUIREMENTS FOR NO.2 DIESEL FUEL:

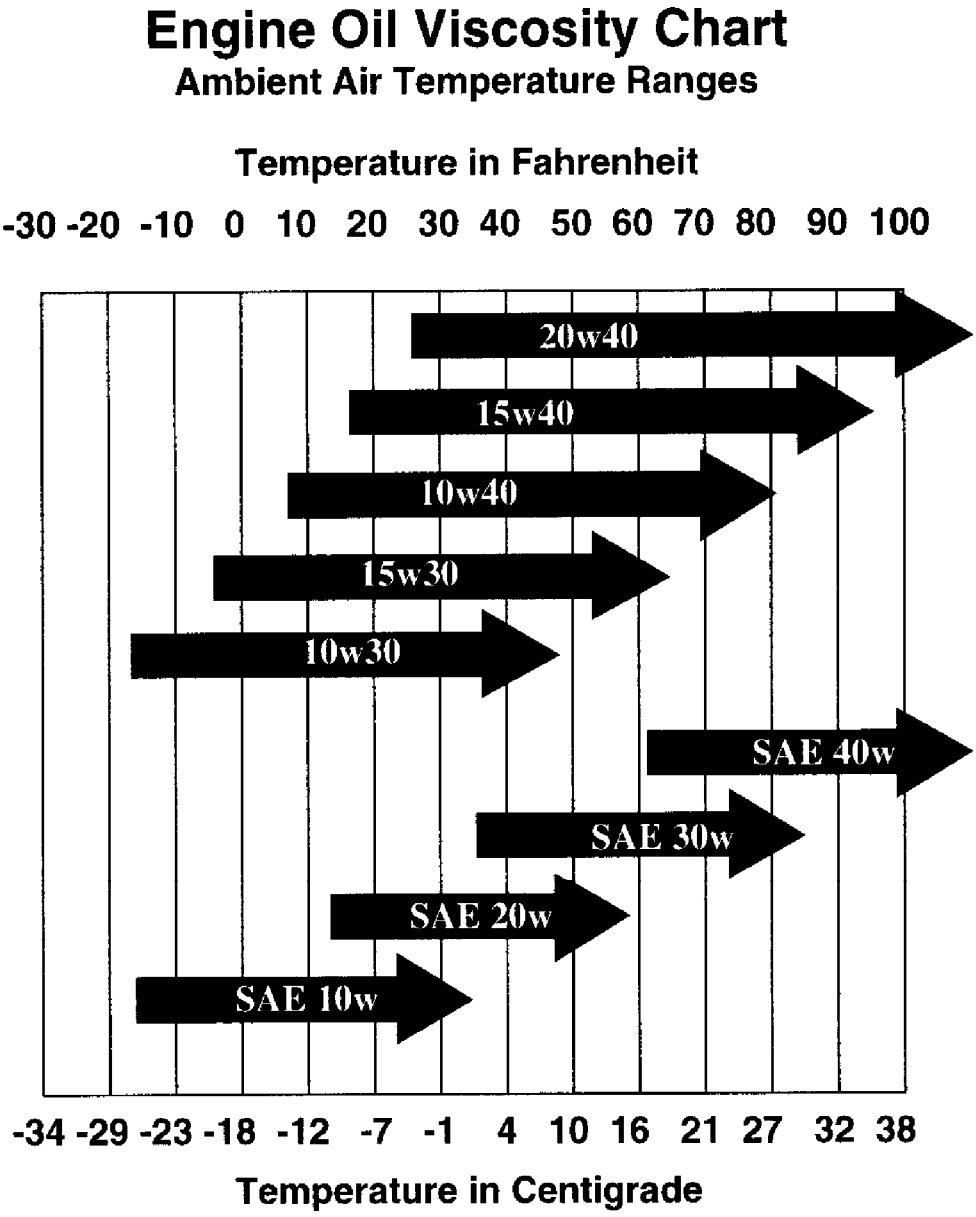
Maximum cloud point	-10°F (-23°C)
Maximum pour point	42°F (6°C) below the lowest ambient air temperature at which the engine must start
Cetane number, min	40 (45 to 55 in winter or at high altitude)
Max. sulphur content, by weight	0.50%
Max. water content & sediment by volume	0.05%
Max, ash content, by weight	0.01%
Max. carbon residue (10% point)	0.20%
Distillation temperature @ 90% point	540 to 625°F (282-329°C)
Distillation temperature @ end point	675°F (357°C)
Minimum flash point	125°F (52°C)
Viscosity at 100°F (38°C)	
Centistokes	2.0 to 4.3
Saybolt Universal Seconds (SUS)	32 to 40
Copper strip test, 3 hours @ 212°F (100°C)	No 3 ASTM
Minimum API gravity	30

ENGINE OIL SPECIFICATION

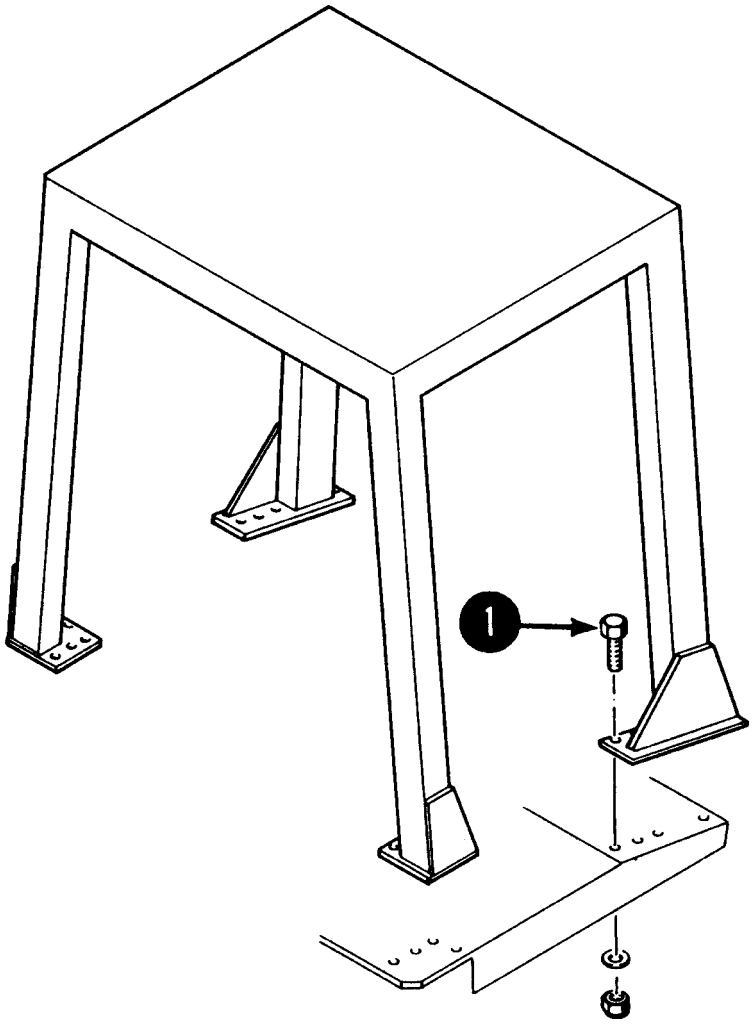
Use multigrade or single grade engine oil with API engine oil service classification “CD”.

NOTE: DO NOT use performance additives or other oil additives in your engine crankcase.

See the chart below for recommended oil viscosity at the various ambient air temperature range



ROLLOVER PROTECTION STRUCTURE



There are 16 bolts, nuts, and washers (4 each post) that hold the ROPS to the machine. The bolts are located at the base of each leg of the ROPS. The torque specifications for each bolt is 195 foot pounds (265 Nm.).

SAFETY, GENERAL

The information in this manual does not replace any safety rules and laws used in your area. Before operating this machine, learn the rules and laws for your area and make sure your machine has the correct equipment according to these rules and regulations. Before starting the engine study the operator's manual.

- Know the location and function of all machine controls.
- Clear the area of other persons before you start the engine.
- Check all controls in a safe area before you operate the machine.
- Understand the limits of the machine.
- Do not try to do too much too fast.
- Keep the machine under control at all times.

The following decal is located on the right side of the instrument panel. Check the decal daily. Clean or replace as needed.

SPARK ARRESTER

NOTE: Rules or laws in some areas may require that this machine be equipped with a spark arrester or spark arrester muffler. Check the rules or laws in your area.

SAFETY, PERSONAL

⚠ CAUTION

Loose clothing and jewelry can cause an accident. Do not wear loose clothing or jewelry that can catch on controls, etc. Do wear safety shoes, hard hat, heavy gloves, etc. when required for your protection.

Foreign materials and loose objects on the steps, hand rails, and in the operators compartment can cause accidents and injury. Keep the steps, hand rails, and operator's compartment clear at all times.

Make sure cab windows are clean and unobstructed.

Know and understand the arrangements for movement of trucks, machines, and persons on your job site. Understand and follow the instructions of flagmen, road signs, or signals.

⚠ WARNING

Check machine controls for proper operation prior to starting the machine.

A fire can cause injury or death. Always have a fire extinguisher on the job site near the machine. Make sure the fire extinguisher is serviced according to the manufacturer's instructions.

Holes, obstructions, debris, and other work area hazards can cause injury or death. Always walk-around and look for these and other hazards before you operate your machine in a new work area.

Lack of, or incomplete, machine inspection and maintenance can cause accidents. Always follow the instructions in this manual for machine inspection and maintenance.

Always use the seat belt when operating the machine. Make sure the buckle is fully secured.

The following decal is located on the upper right hand corner of the instrument panel. Check the decal daily. Clean or replace as needed.

Always wear the proper ear protection when operating this machine. Permanent hearing loss can result from extended exposure to loud noises.

The following decal is located on the instrument panel to the left side of the main gauge cluster. Check the decal daily. Clean or replace as needed.

SAFETY, MACHINE OPERATION

⚠ CAUTION

Dust, smoke, fog, etc. can decrease your vision and cause an accident. Always stop or slow the machine until you can clearly see your work area and the surrounding traffic.

⚠ WARNING

Operate the controls from the operator's seat only, and keep your hands on the controls during operation.

The following decal is located on the left side of the operator seat box. Check the decal daily. Clean or replace as needed.

Do not permit other people to ride on the machine as passengers.

Sparks from the electrical system or engine exhaust can cause a fire or explosion. Before you operate this machine in an area with flammable dust or vapors, use good ventilation to remove the flammable dust or vapors.

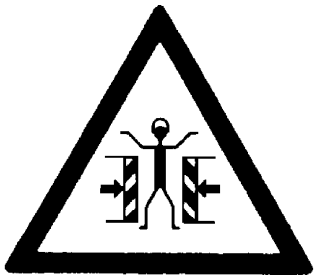
Engine exhaust fumes can cause injury or death. If you operate this machine in an enclosed area, use good ventilation to replace the exhaust fumes with fresh air.

The vibrations from this machine can cause the walls of a trench or high bank to collapse. Make sure the walls of the trench or bank are braced. If you do not follow these instructions, you can cause personal injury or death to persons working in these areas.

This machine uses an articulating joint. Keep all persons clear of this pinch area when the engine is running. Machine movement can cause personal injury.

The following decal is located in two places on each side of the machine's front and rear frames in the articulation joint area. Check the decals daily. Clean or replace as needed.

The following decal is also located on both sides of the rear frame in the area of the articulation joint and symbolizes the danger of the pinch point. Check the decals daily. Clean or replace as needed.



A machine out of control can cause injury or death. You must make a judgement if weather and earth conditions will permit safe operation on a hill, ramp, or rough ground. Adjust machine operation accordingly.

Operating this machine too close to High Voltage electrical lines can cause injury or death. Follow the guide lines listed below.

NOTE: IF THE CLEARANCES IN THE SPECIFICATIONS BELOW ARE LESS THAN THE CLEARANCES GIVEN IN THE RULES AND LAWS OF YOUR AREA, YOU MUST FOLLOW THE RULES AND LAWS OF YOUR AREA!

Table 1: Electrical Safety Rules

Cable Voltage	Minimum Clearance From Cable When Machine is Working	Minimum Clearance From Cable When Transporting Machine
50,000 volts or less	10 feet (3 meters)	4 feet (1.2 meters)
50,000 volts to 345,000 volts	10 feet (3m) plus 1/2 inch (13mm) for every 1000 volts over 50,000 volts	10 feet (3 meters)
345,000 volts to 750,000 volts	10 feet (3m) plus 1/2 inch (13mm) for every 1000 volts over 50,000 volts	16 feet (5 meters)

SAFETY, MAINTENANCE

⚠ WARNING

Engine fuel is flammable and can cause a fire or an explosion. Do not fill the fuel tank or service the fuel system while the machine is running, or near an open flame, welding, burning cigars and cigarettes, etc.

Machine movement without an operator can cause injury or death. If you must service this machine with the engine running, have another person help you and follow the instructions in the machine manuals. Lock the articulation joint and do not leave the machine when the engine is running.

Improper service or repair can cause injury or death. If you do not understand the service procedures for this machine, see your Vibromax dealer.

Flammable cleaning solvents can cause injury or death. Use nonflammable cleaning solvents for cleaning purposes.

Missing shields, guards, or access panels can cause injury or death. Always install all shields, guards, or access panels before you start the engine.

Do not make any modifications or repairs to the machine ROPS. If your ROPS is damaged, replace it with new parts. Welding, drilling, etc. can weaken the ROPS structure.

Metal chips or debris can cause eye injury. Wear eye protection when you service this machine. If you use a hammer to drive hardened pins or for other service, use a hammer with a soft face (brass, plastic, etc.).

Unauthorized modifications to cast iron parts can cause injury or death. Welding can cause cast iron parts to break. Do not use welding to repair or attach items to cast iron parts on this machine.

Batteries produce explosive gases. Keep away from flames. Ventilate when charging. Always wear eye protection when working near batteries. Do not wear jewelry or watch bands when working on batteries.

When you install a battery or use a booster battery, connect the negative ground cable last. When you remove a battery or booster battery, disconnect the negative ground cable first.

Never charge or jump a battery when the electrolyte is frozen. If you do not follow this instruction the battery can explode.

DANGER

Unauthorized modifications to this machine can cause injury or death. Never make modifications to this machine without prior written approval from Vibromax.

SAFETY, DECALS

Damaged, missing or dirty warning decals can lead to incorrect operation which could result in injury or death.

Replace all missing or damaged decals and keep all warning decals clean. The warning decals are available from your Vibromax dealer.

Inspect all instruction decals and warning decals every 10 operating hours or daily, which ever occurs first.

Clean all illegible decals with water, soap and a cloth. Do not use solvents or fuels to clean decals.

Damaged, missing or illegible decals must be replaced. If a decal is located on a component that must be replaced, be certain to apply a new decal on the replaced component.

DECAL 2751/10002

DECAL 4003/32220

DECAL 4003/32221

DECAL 4003/32222

DECAL 4003/22002

DECAL 4003/07055