## OPERATING CC50 II VIBRATORY ROLLER

**CONTENTS**

<table>
<thead>
<tr>
<th>Safety Precautions</th>
<th>2-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Break-In Period</td>
<td>2-3</td>
</tr>
<tr>
<td>Instruments and Controls</td>
<td>2-4</td>
</tr>
<tr>
<td>Console and Seat Adjustments</td>
<td>2-8</td>
</tr>
<tr>
<td>Before Starting</td>
<td>2-9</td>
</tr>
<tr>
<td>Starting the Engine</td>
<td>2-10</td>
</tr>
<tr>
<td>Engine Warm-Up</td>
<td>2-11</td>
</tr>
<tr>
<td>Operating Travel</td>
<td>2-12</td>
</tr>
<tr>
<td>Vibration (CC50A)</td>
<td>2-13</td>
</tr>
<tr>
<td>Vibration (CC50S, CC50PD)</td>
<td>2-14</td>
</tr>
<tr>
<td>Braking</td>
<td>2-15</td>
</tr>
<tr>
<td>Stopping and Parking</td>
<td>2-15</td>
</tr>
<tr>
<td>Cold Weather Operation</td>
<td>2-16</td>
</tr>
<tr>
<td>Towing Procedure</td>
<td>2-16</td>
</tr>
<tr>
<td>Connecting a Booster Battery</td>
<td>2-17</td>
</tr>
<tr>
<td>Transportation</td>
<td>2-18</td>
</tr>
</tbody>
</table>

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**Figure 1**

Operator's Platform

SE-5011-0
July 1987
SAFETY PRECAUTIONS

2. Observe and follow all Maintenance and Service Instructions.
3. Do not operate machine unless qualified by training or experience.
4. Do not operate machine if in need of repair or adjustment.
5. Obey all safety rules.
6. Visually inspect your working area for ground hazards.
7. Test all controls, brakes and steering before working.
8. Before Start-Up:
   - Apply the Parking Brake
   - Place Fwd/Rev Control in Neutral
   - Be firmly and securely seated at the controls
9. Drive with care on uneven surfaces and rough terrain.
10. Look both ways when reversing direction of travel.
11. Never carry passengers on the roller.
12. Do not get on or off a moving machine; always use the proper steps and handrails provided.
14. Before leaving the machine, switch OFF vibration, move the Fwd/Rev Lever to Neutral, apply the brake and shut down the engine.
15. Keep the machine clean, avoid dirt and grease on Operator's Platform.
17. When servicing or repairing machine, stop the engine, block the drums and lock the steering hitch.
18. Exercise caution when refueling:
   - Shut Down the engine
   - No smoking
   - Ground fuel filler nozzle against tank neck to avoid a spark
19. Do not modify machine in any way which will affect safety. All modifications require prior approval in writing from DYNAPAC.
Break-In Period

Peak performance and reliability of your new CC50 Series roller can be assured if it is given proper handling in the early stages.

During the first 100 hours of operation:

1. Allow the engine and hydraulic system to warm up after starting, then operate at normal loads.
2. Check gauges and indicators often during operation.
3. Avoid prolonged engine idling.
4. Check engine oil level daily.
5. Check hydraulic oil level, radiator coolant level and other gearbox oil levels regularly. Watch for leaking fluid.
6. Check for and tighten loose hardware regularly.
7. Service lubrication points as indicated on the Maintenance Schedule.

Break-In Service

After first 50 hours of operation:

   Drain and Refill Drum Planetary Hub Oil (2)
   Drain and Refill Pump Drive Gearbox

USE ONLY THE LUBRICANTS SPECIFIED IN THIS MANUAL IN YOUR MACHINE
DESCRIPTON AND FUNCTION OF INSTRUMENTS AND CONTROLS

Figure 2 Instruments and Controls

1 Compaction Meter* 17 Hazard Switch*
2 Speedometer (CC50A) 18 Horn
3 Vibration Frequency Meter (CC50A) 19 Starter Button
4 Forward/Reverse Lever 20 Power Switch
5 Vibration, ON/OFF 21 Brake Switch
6 Vibration Mode Switch (CC50A) 22 Brake Light
7 Amplitude Switch, Front Drum 23 Emergency Stop
8 Amplitude Switch, Rear Drum 24 Oil Pressure Warning Light
9 Water Spray Switch (CC50A) 25 Voltmeter
10 Frequency Meter Switch (CC50A) 26 Fuel Gauge
11 Throttle 27 Temp Gauge, Hydraulic Oil
12 Console Swivel Pedal (CC50A) 28 Temp Gauge, Engine Coolant
13 Turn Signal* 29 Headlight Selector, Hi/Low Beam
14 Rear Lights, ON/OFF 30 Air Cleaner Warning Light
15 Rotating Beacon* 31 Tachometer
16 Front Lights, ON/OFF

* Optional Equipment

DYNAPAC 2-4
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Compaction Meter (Optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Speedometer</td>
<td></td>
<td>Shows rolling speed from 0-6.5 mph (0-10.5 km/h)</td>
</tr>
<tr>
<td>3</td>
<td>Vibration Frequency Meter</td>
<td>![vibration symbol]</td>
<td>Shows vibration frequency of front or rear drum. Front or Rear drum is selected with (10).</td>
</tr>
<tr>
<td>4</td>
<td>Forward/Reverse Lever</td>
<td></td>
<td>Movement of the lever Forward or Reverse produces movement of the machine at speed in proportion to lever angle away from Neutral. Moving the lever to Neutral provides hydrostatic braking.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NOTE: The engine can only be started with the lever in NEUTRAL position.</td>
</tr>
<tr>
<td>5</td>
<td>Vibration Button</td>
<td></td>
<td>Depressing the button starts vibration, depressing it again, vibration stops. Switch (6) must be in MAN or AUT, switches (7 &amp; 8) in HIGH or LOW.</td>
</tr>
<tr>
<td>6</td>
<td>Vibration Mode Switch (CC50A only)</td>
<td>![MAN-O-AUT]</td>
<td>MAN - Vibration is continuous when button (5) is depressed. 0 - Vibration cannot be activated with button (5). AUT - Vibration is switched ON/OFF automatically when reversing direction or stopping.</td>
</tr>
<tr>
<td>7</td>
<td>Amplitude Switches</td>
<td>![amplitude symbol]</td>
<td>HIGH - High amplitude and centrifugal force. 0 - OFF LOW - Low amplitude and centrifugal force.</td>
</tr>
<tr>
<td>8</td>
<td>Front Drum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Rear Drum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Water Spray Switch (CC50A only)</td>
<td>![water spray symbol]</td>
<td>This switch activates front and rear drum water pumps. MAN - Water spray is continuous. 0 - Water spray is OFF. AUT - Water spray is switched ON/OFF automatically when reversing travel direction or stopping.</td>
</tr>
<tr>
<td>Item</td>
<td>Description</td>
<td>Symbol</td>
<td>Function</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------</td>
<td>--------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>10</td>
<td>Vibration Frequency Meter Switch</td>
<td></td>
<td>▲ - Vib meter shows frequency of the front drum.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>O - Frequency meter is OFF.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>▼ - Vib meter shows frequency of the rear drum.</td>
</tr>
<tr>
<td>11</td>
<td>Throttle</td>
<td>🔄</td>
<td>Throttle is released/locked using center button.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>To increase engine speed, PULL OUT the knob, to</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>decrease speed PUSH IN the knob.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>For fine adjustments, turn knob:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CCW - to increase speed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>CW - to decrease speed</td>
</tr>
<tr>
<td>12</td>
<td>Console Swivel Pedal (CC50A)</td>
<td></td>
<td>Step down on pedal and turn the console to face opposite seat position.</td>
</tr>
<tr>
<td>13</td>
<td>Turn Signal (Optional)</td>
<td>🔄 ▶️</td>
<td>Used to indicate left or right turn.</td>
</tr>
<tr>
<td>14</td>
<td>Rear Light Switch</td>
<td>🕯️</td>
<td>ON/OFF Switch for work lights at rear of machine.</td>
</tr>
<tr>
<td>15</td>
<td>Rotating Beacon</td>
<td></td>
<td>ON/OFF Switch.</td>
</tr>
<tr>
<td>16</td>
<td>Front Light Switch</td>
<td>🕯️</td>
<td>ON/OFF Switch for front headlights and red lights at rear of machine.</td>
</tr>
<tr>
<td>17</td>
<td>Hazard Switch (Optional)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Horn Button</td>
<td>🎷</td>
<td>Depress to sound horn.</td>
</tr>
<tr>
<td>19</td>
<td>Starter Button</td>
<td>🚦 START</td>
<td>When pressed provides power to engine starter circuit. Hold 30 seconds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>MAXIMUM.</td>
</tr>
<tr>
<td>20</td>
<td>Power Switch</td>
<td>🚦 I</td>
<td>ON/OFF Switch, provides power to all systems except starter.</td>
</tr>
</tbody>
</table>

* DYNAPAC  
2-6
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Symbol</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Brake Switch</td>
<td>![Symbol]</td>
<td>ON/OFF switch for brakes when engine is running. Brake light (22) is lit when brake is applied. NOTE: Brakes apply automatically when engine is stopped or Traction System charge pressure drops below 150 psi (1 MPa).</td>
</tr>
<tr>
<td>22</td>
<td>Brake Light</td>
<td>![Symbol]</td>
<td>Is lit when Brake Switch (19) or Emergency Stop (22) is ON. Also lights when hydraulic pressure drops low enough to actuate the brakes.</td>
</tr>
<tr>
<td>23</td>
<td>EMERGENCY STOP</td>
<td>![Symbol]</td>
<td>OFF (Pulled Out) Normal position. ON (Pushed In) Brakes are applied and roller will stop.</td>
</tr>
<tr>
<td>24</td>
<td>Oil Pressure Warning Light</td>
<td>![Symbol]</td>
<td>When lit, indicates lubricating oil pressure is too low. Stop the engine and determine fault.</td>
</tr>
<tr>
<td>26</td>
<td>Fuel Gauge</td>
<td>![Symbol]</td>
<td>Shows level of fuel in the tank.</td>
</tr>
<tr>
<td>29</td>
<td>Headlight Beam Selector</td>
<td>![Symbol]</td>
<td>Selects HI or Low beam.</td>
</tr>
<tr>
<td>30</td>
<td>Air Cleaner Warning Light</td>
<td>![Symbol]</td>
<td>When lit at full engine RPM, indicates need for cleaning or replacement of the air filter.</td>
</tr>
<tr>
<td>31</td>
<td>Tachometer</td>
<td>![Symbol]</td>
<td>Shows engine speed and operating time in hours.</td>
</tr>
</tbody>
</table>
CONSOLE AND SEAT ADJUSTMENTS

CC50A

Dual seat operator station gives unrestricted view of front and rear drum edges and the work area. Console is adjustable for operating from either Left side or Right side seat position.

Step on console swivel pedal (1) and push the console to desired position. Pedal is spring loaded to lock.

Adjust seat so it is comfortable and controls are easy to reach. Horizontal adjustments can be made by moving lever (1) and sliding the seat forward or backward.

CC50S and CC50PD

Console is stationary. Seat is adjustable as follows:

1 Knob (1) adjusts seat spring according to weight of the operator. Turn knob CW or CCW until pointer is flush with indicator.

2 The four bolts (2) are used to adjust seat height and tilt. Remove to adjust seat position.

3 Seat swivel lever (3), when pressed seat may be moved 20° to the right, center, or 20° to the left.

4 Seat Fore/Aft adjustment lever (4), pull out lever then move seat up or back.

Fig 3 CC50A Operator's Platform
1 Console Swivel Pedal

Fig 4 CC50S, CC50PD Seat Adjustments
1 Seat Spring Adj. Knob
2 Height & Tilt Adjustment
3 Swivel Lever
4 Fore/Aft Lever

DYNAPAC
BEFORE STARTING

1. Ensure that "Daily" maintenance has been carried out, see the Maintenance Schedule, Section 3.
2. Set battery master switch ON.
3. Check that Emergency Stop (23) is pulled out.

Fig 5
1 Battery master switch

Fig 6
23 Emergency Stop

(CC50A only)
Speed control bracket at right side Fwd/Rev lever can be adjusted to regulate maximum forward and reverse rolling speed.

Speed control can be disengaged by pulling out knob (1) when transporting to obtain maximum travel speed.

Fig. 7 Speed Control
1 Disengage knob
2 Speed limit adjustment
STARTING THE ENGINE

Fig. 8 Instrument panel

4 Forward/Reverse Lever  
7 Amplitude Switch  
   Front drum  
8 Amplitude Switch  
   Rear drum  
19 Starter button  
20 Power Switch  
21 Brake Switch ON/OFF  
24 Oil pressure warning lamp  
25 Voltmeter  
26 Fuel gauge  
27 Temperature gauge  
27 Temperature gauge  
28 Temperature gauge  
29 - hydraulic oil  
30 Air cleaner light  
31 Tachometer

1 Set the Forward/Reverse Lever (4) to NEUTRAL position. The engine cannot be started with the lever in any other position.

2 Set Amplitude Switches (7) and (8) to neutral position.

3 Set throttle (11) at idle. The governor automatically positions internal pump controls for maximum fuel delivery when throttle is set at idle.
4 Turn Power Switch (20) to "I". Check that Fuel Gauge (26) and Voltmeter (25) indicate readings, and warning lamps for oil pressure (24), brake (22) and air cleaner light up.

5 Push starter button (19) momentarily to START, release immediately as engine starts.

CAUTION: DO NOT ENGAGE THE STARTING MOTOR FOR MORE THAN 30 SECONDS. WAIT 2 MINUTES BETWEEN UNSUCCESSFUL ATTEMPTS.

6 When starting a cold engine, increase the engine speed (RPM) slowly to be sure adequate lubrication is available to the bearings and to allow oil pressure to stabilize.

Idle the engine 3-5 minutes at 1000 RPM before operating with load.

At temperatures below +4°C (40°F), a small amount of starting fluid may be sprayed into the air cleaner while another person cranks the engine.

ENGINE WARM-UP

Warm up the engine for 3-5 minutes, depending on air temperature. When warming up the engine, check that the voltmeter (25) indicates 12-14 V and that warning lamps (24) and (30) have gone out.

After warming, check that hydraulic oil temperature gauge (27) and coolant temperature gauge (28) indicate readings.
1 Pull out throttle (11) until engine speed is 2200 RPM. For fine adjustments turn knob:
   Counterclockwise - to increase speed.
   Clockwise - to reduce speed.

2 Check that steering is smooth, by turning steering wheel to stop in both directions, articulation of the roller should be smooth.

3 Release the brake with switch (21), light (22) should go out.

4 Check that road is clear in front and behind the roller. Move the forward/reverse lever (4), slowly forward or reverse - depending on the desired direction of travel.

   Machine speed is governed by the Fwd/Rev lever. The further the lever is moved from NEUTRAL the faster the machine will travel.

5 When operating on asphalt, fill the water tanks, with clean water.

   Turn ON water spray, Switch (9), and wet drums thoroughly before driving on hot asphalt. Use AUTO spray mode to conserve water.

6 During operation, check that instruments indicate normal readings and that the warning lights do not come on.

   Max. hydr. oil temp. (27) approx. 85°C (185°F)
   Max. coolant temp. (28) approx. 100°C (210°F)
1. Maintain engine speed at 2200 RPM to obtain maximum eccentric shaft speed of 2400 VPM (vibrations per minute).

2. Use switches (7) and (8) to select high/low amplitude for the front and rear drums.

   **CAUTION:** DO NOT SWITCH AMPLITUDE WHILE VIBRATION IS ENGAGED. BEFORE SWITCHING, LEAVE VIBRATION IN "OFF" POSITION FOR 10 SECONDS.

3. Use switch (6) to select Auto or Manual Mode.
   - **Auto Mode** - vibration comes on automatically as machine moves forward or reverse. Vibration stops as machine stops.
   - **Manual Mode** - use switch (5) to start the drums vibrating when the roller is in motion. Vibration should be turned "OFF" when changing direction of travel or stopping.

   **DO NOT VIBRATE IN PLACE**

   An important thing to keep in mind is that the roller should be vibrating only when moving. When in "Manual Mode" and reversing direction, always turn OFF vibration before the roller stops and after it starts. If this is not done, each vibrating drum will indent the pavement at the stopping point.

   **KEEP ECCENTRIC SHAFT SPEED AT 2400 VPM.**

Best results are achieved when vibrating passes are made in the 2 to 3 miles per hour (3 to 4.5 km/hr) range.
CC50A AUTO Vibration Adjustment

In AUTO vibration mode, a microswitch and cam mechanism causes engagement and disengagement of vibration for each drum as Fwd/Rev Lever is moved forward and reverse.

The cams are adjusted to activate vibration after the roller is in motion.

If adjustment is necessary:
- move cams closer together to activate vibration at slower speed.
- move cams further apart to activate vibration at higher speed.

Be sure activation speed is the same in forward and reverse.

Vibration CC50S and CC50PD

1 Maintain engine speed at 2200 RPM to obtain maximum eccentric shaft speed of 1700 VPM (vibrations per minute).

2 Use switches (7) and (8) to select high/low amplitude for the front and rear drums.

CAUTION: DO NOT SWITCH AMPLITUDE WHILE VIBRATION IS ENGAGED. BEFORE SWITCHING, LEAVE VIBRATION IN "OFF" POSITION FOR 10 SECONDS.

3 Use switch (5) to start the drums vibrating when the roller is in motion.

DO NOT VIBRATE IN PLACE
Braking

Normal braking of the roller is accomplished by moving the Fwd/Rev lever (4) to NEUTRAL. The hydrostatic transmission stops the roller.

⚠️ IN AN EMERGENCY, DEPRESS THE EMERGENCY STOP (22). BE READY FOR AN ABRUPT STOP.

STOPPING AND PARKING

1 Use switch (5) to turn off vibration. Turn front and rear drum amplitude switches (7 & 8) to "0" position.

2 Stop the roller by moving the forward/reverse lever (4) to NEUTRAL.

3 Set engine throttle to low idle speed. Allow engine to idle for 3 to 5 minutes to allow for temperature balance.

DO NOT SHUT ENGINE DOWN SUDDENLY FROM FULL-LOAD RUNNING.

Avoid unnecessary and prolonged operation at low idle.

__________________________

NOTE: When parked with the engine running, use switch (21) to apply the brake.

__________________________

4 Turn Power Switch (20) to the "0" position.

5 Turn battery Master Switch OFF and take the key with you.

Park the roller in a safe place to avoid creating a traffic hazard.

If freezing temperatures are expected, drain the water system, CC50A, (both tanks and water pumps) to prevent damage. See Maintenance, Section III.

If the roller is parked on a slope, block both drums.
COLD WEATHER OPERATION

A continuous and strict preventive maintenance schedule is the best way to ensure good mechanical condition to promote ease of starting and satisfactory performance under poor weather conditions.

Engine

1 Use engine oil of proper viscosity for prevailing air temperature; refer to LUBRICATION AND MAINTENANCE SCHEDULE.

2 At temperatures below 32°F (0°C):
   - Maintain fuel tank full after engine shutdown to minimize water condensation in the tank.
   - Prior to engine shut-down overnight, drain the water separator until fuel runs clear.

Roller

1 Do not operate roller at full load until engine coolant and hydraulic temperatures are in normal range.

2 Check that all controls work freely. Ensure critical parts are free of any ice or snow.

3 CC50A - If the machine is to be left idle and below freezing temperatures are expected, the Water System must be drained to avoid the possibility of damage to system components.

TOWING PROCEDURE

Towing for a short distance when the engine is running.

The roller can be moved up to 300 yards (300 m) in the following manner.

- Allow the engine to idle, providing charge pressure to hold off the brakes.

   BLOCK THE DRUMS! ROLLER CAN MOVE WHEN BYPASS VALVE IS OPENED.

- Turn Bypass Valve lever to Neutral (90° off detent position).

   WHEN TOWING DOWNHILL, USE A RIGID CONNECTION TO TOWING VEHICLE.

- When towing is completed, return bypass valve lever (2) to it's original position.

Figure 16

1 Bypass Valve
2 Lever

2-16
Towing for a short distance when the engine is disabled.

- Turn Bypass Valve lever to Neutral (90° off detent position), see Figure 16.

- Use arm (3), Figure 17, to manually pump up pressure until brakes disengage.

  **BLOCK THE DRUMS! ROLLER CAN MOVE WHEN BYPASS VALVE IS OPENED AND BRAKES ARE RELEASED.**

  **WHEN TOWING DOWNHILL, USE A RIGID CONNECTION TO TOWING VEHICLE.**

- When towing is completed, return bypass valve lever to it's original detent position and pull the release handle (1) to dump brake pressure, this reapplies the brakes.

  **NOTE:** If brakes are left disengaged, release handle (1) not pulled, regular brake function will resume when normal operation of engine and hydraulic system is restored.

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**CONNECTING A BOOSTER BATTERY**

<table>
<thead>
<tr>
<th>GREEN DOT</th>
<th>DARK</th>
<th>CLEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>65% OR ABOVE STATE OF CHARGE</td>
<td>BELOW 65% STATE OF CHARGE</td>
<td>LOW LEVEL ELECTROLYTE</td>
</tr>
</tbody>
</table>

**WARNING:** BATTERIES GENERATE HYDROGEN GAS WHICH IS HIGHLY FLAMMABLE. IF IGNITED BY SPARK OR FLAME, THE GAS MAY EXPLODE VIOLENTLY, CAUSING SPRAYING OF ACID, FRAGMENTATION OF THE BATTERY, AND POSSIBLE SEVERE PERSONAL INJURY. WEAR SAFETY GLASSES WHEN WORKING NEAR BATTERIES. FOLLOW THE PROCEDURE OUTLINED BELOW EXACTLY, BEING CAREFUL NOT TO CAUSE SPARKS.

1. Observe the built-in hydrometers on the batteries:

   - If the hydrometer is light (clear), replace the battery.
   - If the hydrometer is dark and has a green dot in the center, failure to start is not due to a discharged battery and the cranking system should be checked.
   - If the hydrometer is dark and the green dot does not appear in the center proceed as follows.
2 Attach one end of one jumper cable to the positive terminal of the BOOSTER BATTERY and the other end of the same cable to the positive terminal of the DISCHARGED BATTERY.

DO NOT PERMIT VEHICLES TO TOUCH each other as this could establish a ground connection and counteract the benefits of this procedure.

3 Attach one end of the remaining cable to the negative terminal of the BOOSTER BATTERY and the other end to a ground at least 12 inches (300mm) from the DISCHARGED BATTERY.

DO NOT CONNECT DIRECTLY TO THE NEGATIVE POST OF THE DEAD BATTERY.

4 Start the engine and reverse the above sequence exactly when removing the jumper cables.

WARNING: ANY PROCEDURE OTHER THAN THE ABOVE COULD RESULT IN PERSONAL INJURY OR DAMAGE TO THE CHARGING SYSTEM OF THE BOOSTER VEHICLE OR IMMOBILIZED VEHICLE.

TRANSPORTATION

1 Load and unload the roller on a level surface.
2 Keep the trailer bed clean.
3 Chock trailer wheels to prevent movement.
4 When using ramps, be sure they are of adequate strength, low angle and proper height.
5 Drive the roller squarely in forward or reverse up the ramp.
6 Park roller on the trailer centered from side to side. Lock all vandal covers.
7 Engage the steering hitch safety lock.
8 Chock both drums front and rear and on both sides.
9 Block the frame to avoid overloading the drum rubber mounts before tie-down.
10 Tie-down the four corners of the main frame to the trailer with chains or cables.
DO'S AND DON'TS
When Rolling Asphalt

* Do not vibrate in place.

* Do not vibrate when reversing the roller.

* Decelerate and accelerate smoothly to avoid shoving the mix.

* Avoid sharp turns - steer gradually to avoid cutting the mat when changing lanes and rolling curves.

* Select the highest amplitude that will result in the fewest number of passes without blemishing the mat.

* Roll as close to the paver as the stability of the mix will permit.

* Rolling should be as smooth as the pendulum of a grandfather clock, do not operate in a jerky uneven manner. Plan your moves and make your moves in plenty of time.

* The mark of a good roller operator is the ability to run a consistent roller pattern smoothly and evenly without haste.

* Once a rolling pattern is set, do not change it unless the mix changes or the lift changes.

* If you cannot keep up with the paver because laydown productivity is increased, do not change the rolling pattern, but rather inform the paving foreman that another roller is required.