DC-5000
asphalt application rate control

OPERATION and PARTS MANUAL

For Etnyre Asphalt Distributors:
Model BT or BT with SAM Type Spray Bar
Model SAM II
Model SAM II with Optional Remote Control

Supplement to M-101-80R Black-Topper Parts Manual,
M-102-73 Black-Topper Operation Manual and M-111-87
SAM Distributor Operation and Parts Manual

E. D. ETNYRE & CO. Oregon, Illinois 61061-9705 • Phone 815/732-2116

Telex: Western Union 257-353, RCA 249-415 • Fax 815-732-7400 • Cable "EDECO"
Contents

Display And Controls ........................................................................................................................................... 3
Procedure For Setting Up A Spray Run Using The DC-5000 Unit ........................................................................ 3
Additional Features ........................................................................................................................................... 4
Use Of DC-5000 Unit With Etnyre Distributors ............................................................................................... 5
Use Of DC-5000 Unit With Etnyre Distributors For Units December 1990 and After ..................................................... 6
Cab Control Assemblies
BT or BT with SAM Type Spray Bar Used on Units Prior to December 1990 ................................................................. 7
DC-5000 Application Rate Control Assembly (Including Optional Printer) ............................................................... 8
Wiring Diagram - BT/SAM with DC-5000 ................................................................................................................. 11
Cab Control Assemblies
SAM II with Optional Remote Control ..................................................................................................................... 9
Wiring Diagram - SAM II with Optional Remote Control & DC-5000 ................................................................. 12
Cab Control Assemblies
SAM II with DC-5000 ....................................................................................................................................... 10
Wiring Diagram - Standard Model SAM II with DC-5000 ..................................................................................... 13
DISPLAY AND CONTROLS

1. Bituometer Wheel 4-Digit Numeric Display in feet/minute or total feet traveled.
2. Bituometer Selector Switch. Up to display total feet traveled, Down to display feet/minute.
4. Pump Tach 4-Digit Display, in gallons/minute or total gallons sprayed.
5. Pump Tach Selector Switch. Up to display total gallons sprayed, Down to display gallons/minute.
7. Application Rate 4-Digit Numeric Display indicating the "desired application rate setting" in gal/sq.yd. This display is also used to set-up the application rate values to be held in memory.
8. Application Rate Toggle Switch. Up to increase the desired application rate (shown on the gal/sq.yd. display). Down to decrease the desired application rate (shown on the gal/sq.yd. display).
9. Five "Memory" Application Rate Pushbutton Switches to record/recall five different desired rates.

Push to select a pre-entered application rate (shown in gal/sq.yd. display).

To place a new "desired application" rate into one of the five memories:

Push and hold a desired button in, then move application rate toggle switch up or down to obtain desired application rate. When the desired application rate is reached (as shown in the gal/sq.yd. display) release the pushbutton. The new desired application rate is now stored in this pushbutton "memory" switch.

10. Circulation Rate Toggle Switch. Up to increase the desired circulation rate, down to decrease the desired circulation rate (new rate will be shown on pump display with pump tach selector switch in the down position - gal/min.).

PROCEDURE FOR SETTING UP A SPRAY RUN USING THE DC-5000 UNIT

1. Set the number of bar feet on the main control box, or, on the thumbwheel control box (which represents bar feet you have manually set up to spray).
2. Set the circulation rate on DC-5000 unit to ten times the number of bar feet. (Example: 12 bar feet times 10 gal/foot of bar = 120 gallons
per minute). This will provide uniform spraying at the beginning of the shot from a standing start.

3. Select the desired application rate on the DC-5000. (Rate selected will be shown in the gal/sq. yd. display)

4. Set the bitometer selector switch to the down position, bitometer display will show ground speed in feet/minute when spraying. NOTE: remember, reasonable ground speed will still be required to produce a normal spray fan.

5. Set pump tach selector switch to down position. Pump tach display will show gallons per minute being sprayed.

6. On the main control box, set the bitometer switch to auto. NOTE: For conditions where you have no room to have a running start, set bitometer to down position.

7. You are now ready for spraying. Master Spray switch on main control box will start spraying cycle.

Once under way, ground speed, bar length, and truck transmission gear can be changed, the DC unit will correct for these changes and provide the desired application rate as selected.

If the desired application rate exceeds the asphalt pumping system's ability the gal/sq. yd. display will flash. (Example: when the hydrostatic pump reaches full stroke, maximum asphalt pump flow is obtained, this may not be enough if you are applying a high application rate, using a large spray bar pattern and having a low engine speed.

The automatic feature of the DC-5000 depends on the signal from the bitometer. If this signal is lost because of a broken wheel or wire the DC-5000 will be unable to control the application rate. On the back of the DC-5000 is a switch labeled "A" (automatic) and "M" (manual). When switched to manual, the machine can be operated like a BT model distributor. The toggle switch setting the circulation rate will control on a BT. Automatic set up and adjustment for bar length will not be made, but work can continue.

**ADDITIONAL FEATURES**

DC-5000 can be used to measure the length of shot before actual spraying. This can be done by following these operations:

1. On the back side of the DC-5000 unit, place switch to "M" position (manual mode). After measuring the distance, remember to place the switch in position for normal operation (auto mode).

2. On main control box, place Master Power Switch "on".

3. On main control box, set control to "circulate in tank".

4. On DC-5000 unit, set Bitometer Switch to "travel" position and push Bitometer Reset Switch.

5. On main control box, set Bitometer Switch to "auto" position and all Spray Bar Switches to "off" position.

6. Move machine to beginning location of shot.

7. On main control box, set control to "circulate in bar".

8. Push Master Spray Switch and begin run. Read feet traveled on bitometer display.

---

**WARNING**

UNSAFE OPERATION OF EQUIPMENT MAY CAUSE INJURY.

READ, UNDERSTAND AND FOLLOW THE MANUALS WHEN OPERATING OR PERFORMING MAINTENANCE.

3990820
APPLICATION RATE MAINTAINED FOR SPECIFIC BAR WIDTH. The DC5000 controls the pump rate for a specific spray bar width calibrated with the "Bar Feet Selector" thumbwheel in control panel. Maintains set application rate regardless of distributor speed or transmission gear changes during operation. Manually Reset "Bar Feet Selector" whenever spray width is manually changed on spray bar and DC5000 does the rest. Five memory switches are provided to record/recall five different application rates.

*Note: Some of the controls shown above panels are optional and available at extra cost.

APPLICATION RATE MAINTAINED AT ANY SPEED. Set "Bar Feet Selector" thumbwheel on control panel to match bar spray width, enter desired application rate on DC5000 unit. Pump rate is automatically maintained to keep application at desired rate at any truck speed. Spray width changes are easily made; turn appropriate spray bar nozzles on or off with switches in control panel, manually readjust "Bar Feet Selector" to corresponding width, and DC5000 compensates to maintain pre-selected application rate for the new spray width. Spray bar nozzle gang on-off is standard with BT/SAM. Controls for each 2' section of bar are available as optional equipment.

APPLICATION RATE MAINTAINED REGARDLESS OF SPEED OR BAR WIDTH CHANGES. Program the DC5000 to any desired application rate. During operation, change truck speed and/or adjust spray to any desired width using control panel switches and the DC5000 control will automatically maintain the pre-set rate. No "Bar Feet Selector" or further adjustment is required. The system calculates Gal/Square yard application rate from the data entered by changes in the SAM Control Panel and radar speed sensor and adjusts the asphalt pump to achieve the desired application rate. Width and speed changes can be made sprayering or standing still, the DC5000 understands. The SAM distributor features individual controls for each one foot section of spray bar.
USE OF DC5000 UNIT WITH ETVYRE DISTRIBUTORS

DISTRIBUTOR TYPE: SAM WITH OPTIONAL REMOTE CONTROL

Control Box 3370193

25 Pin Cable Assembly 3370192

DC 5000
English 3370188
Metric 3370187

DISTRIBUTOR TYPE: SAM

Control Box (Etvyre Mfg.) with Circuit Board 3370191

25 Pin Cable Assembly 3370192

DC 5000
English 3370188
Metric 3370187

DISTRIBUTOR TYPE: BT or BT WITH SAM TYPE SPRAY BAR

Control Box (Etvyre Mfg.)

25 Pin Cable Assembly 3370192

Thumbwheel Spray Bar Control Box 3370196

DC 5000
English 3370189
Metric 3370190

Cable 6701862
Sockets 6701947
Plug 6701956
Seal 6701960
CAB CONTROL ASSEMBLIES
BT or BT WITH SAM TYPE SPRAY BAR

REF. | PART NO. | QTY. | DESCRIPTION
--- | --- | --- | ---
1 | 3370196 | 1 | THUMBWHEEL CONTROL BOX
2 | 3370192 | 1 | CABLE ASM - 25 PIN
3 | 3370189 | 1 | CONTROL BOX - DC-5000, ENGLISH
3370190 | 1 | CONTROL BOX - DC-5000, METRIC
4 | 6309262 | 1 | VELCRO MOUNTING
5 | 6701862 | 1 | CABLE
6 | 6701947 | 9 | SOCKET
7 | 6701956 | 1 | PLUG
8 | 6701960 | 1 | SEAL

Etnyre Control Box
For Model BT
Cab Mounted

SPECIFY UNIT SERIAL NO., PART NO., & PART DESCRIPTION 7
DC-5000 APPLICATION RATE CONTROL ASSEMBLY
Including Optional Printer

used on units December, 1990 and after

Main Control Box

To Bitometer and Asphalt Pump Sensors

Used when mounting DC-5000 to main control panel

Black = Ground
Red = 12V

Connector (Included with printer)

Note: This is current production panel as of December 1990. Panel has a black face with white lettering.

<table>
<thead>
<tr>
<th>REF.</th>
<th>PART NO.</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>REF.</th>
<th>PART NO.</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3370201</td>
<td>1</td>
<td>Cable-Rainbow, 25 Conductor</td>
<td>9</td>
<td>0446363</td>
<td>2</td>
<td>Washer-Flat</td>
</tr>
<tr>
<td>2</td>
<td>3370199</td>
<td>1</td>
<td>Connector</td>
<td>10</td>
<td>0142745</td>
<td>2</td>
<td>Wing Nut</td>
</tr>
<tr>
<td>3</td>
<td>3370200</td>
<td>25</td>
<td>Pins-Connector, Female</td>
<td>11</td>
<td>3361021</td>
<td>1</td>
<td>Bracket-Mt, DC-5000 Control</td>
</tr>
<tr>
<td>4</td>
<td>3370197</td>
<td>2</td>
<td>Screw-Lock, Connector</td>
<td>12</td>
<td>3321327</td>
<td>1</td>
<td>Plate-Stiffener, Cab Box</td>
</tr>
<tr>
<td>5</td>
<td>3370185</td>
<td>1</td>
<td>Cable-Pump Stroker</td>
<td>13</td>
<td>3361038</td>
<td>1</td>
<td>Bracket-Mtg, Box, Control</td>
</tr>
<tr>
<td>6</td>
<td>3370192</td>
<td>1</td>
<td>Cable Asm-25 Pin</td>
<td>14</td>
<td>3361034</td>
<td>1</td>
<td>Printer Case</td>
</tr>
<tr>
<td>7</td>
<td>6702145</td>
<td>1</td>
<td>Cable, DC-5000 to Printer</td>
<td>15</td>
<td>6309262</td>
<td>1 ft</td>
<td>Velcro</td>
</tr>
<tr>
<td>8</td>
<td>3370203</td>
<td>1</td>
<td>Hood-Cable Connector</td>
<td>16</td>
<td>6702142</td>
<td>1</td>
<td>Printer, DC-5000</td>
</tr>
<tr>
<td>9</td>
<td>3370204</td>
<td>9</td>
<td>Pin-Cable Connector, Male</td>
<td>17</td>
<td>6700263</td>
<td>1</td>
<td>Fuse Holder</td>
</tr>
<tr>
<td>10</td>
<td>3370216</td>
<td>1</td>
<td>DC-5000 Control, BT &amp; BT/SAM Models</td>
<td>18</td>
<td>6701463</td>
<td>1</td>
<td>Fuse-3AGC 5A</td>
</tr>
</tbody>
</table>

SPECIFY UNIT SERlAL NO., PART NO., & PART DESCRIPTION
CAB CONTROL ASSEMBLIES

SAM II WITH OPTIONAL REMOTE CONTROL

used on units prior to December 1990

<table>
<thead>
<tr>
<th>REF.</th>
<th>PART NO.</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3370193</td>
<td>1</td>
<td>CONTROL BOX - SAM II W/DC-5000</td>
</tr>
<tr>
<td>2</td>
<td>3370188</td>
<td>1</td>
<td>CONTROL BOX - DC-5000, ENGLISH</td>
</tr>
<tr>
<td>3</td>
<td>3370187</td>
<td>1</td>
<td>CONTROL BOX - DC-5000, METRIC</td>
</tr>
<tr>
<td>4</td>
<td>3370192</td>
<td>1</td>
<td>CABLE ASM - 25 PIN</td>
</tr>
<tr>
<td>5</td>
<td>6309262</td>
<td>1</td>
<td>VELCRO MOUNTING</td>
</tr>
<tr>
<td>6</td>
<td>3370176</td>
<td>1</td>
<td>BRACKET-CONTROL BOX, 17&quot;</td>
</tr>
<tr>
<td>7</td>
<td>3370138</td>
<td>1</td>
<td>TUBE-POST, CONTROL BOX MTG,</td>
</tr>
<tr>
<td>8</td>
<td>3370136</td>
<td>1</td>
<td>PLATE-POST MTG., CONTROL BOX</td>
</tr>
</tbody>
</table>

SPECIFY UNIT SERIAL NO., PART NO., & PART DESCRIPTION
**CAB CONTROL ASSEMBLIES**

**SAM II WITH DC-5000**

used on units prior to December 1990

---

**REF.** | **PART NO.** | **QTY.** | **DESCRIPTION**
---|---|---|---
1 | **2** | 1 | CONTROL BOX-SAM, W/DC-5000
2 | 3370191 | 1 | CIRCUIT BOARD-CONTROL BOX
3 | 3370192 | 1 | CABLE ASM - 25 PIN
4 | 3370188 | 1 | CONTROL BOX-DC-5000, ENGLISH
5 | 3370187 | 1 | CONTROL BOX-DC-5000, METRIC
6 | 3370176 | 1 | BRACKET-CONTROL BOX, 17"
7 | 3370138 | 1 | TUBE-POST, CONTROL BOX MTG.
8 | 3370136 | 1 | PLATE-POST MTG., CONTROL BOX
9 | 6309262 | 1 | VELCRO MOUNTING
10 | 3370141 | 1 | CONTROL BOX ASM-REAR, SAM

**Specify Unit Serial Number**
Wiring Diagram - SAM II with Optional Remote Control & DC-5000