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---

**DEVICE ABBREVIATION / SYMBOL LIST**

<table>
<thead>
<tr>
<th>ABBREV.</th>
<th>DEVICE</th>
<th>SYMBOL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ</td>
<td>ALARM</td>
<td>🙁</td>
</tr>
<tr>
<td>C</td>
<td>CAPACITOR</td>
<td>🙁</td>
</tr>
<tr>
<td>CB</td>
<td>CIRCUIT BREAKER</td>
<td>🙁</td>
</tr>
<tr>
<td>CR</td>
<td>CONTROL RELAY</td>
<td>VARES</td>
</tr>
<tr>
<td>D</td>
<td>DIODE</td>
<td>🙁</td>
</tr>
<tr>
<td>F</td>
<td>FUSE</td>
<td>🙁</td>
</tr>
<tr>
<td>FLS</td>
<td>FLASHER</td>
<td>🙁</td>
</tr>
<tr>
<td>FS</td>
<td>FOOT SWITCH</td>
<td>🙁</td>
</tr>
<tr>
<td>GA</td>
<td>GAUGE</td>
<td>🙁</td>
</tr>
<tr>
<td>LS</td>
<td>LIMIT SWITCH</td>
<td>🙁</td>
</tr>
<tr>
<td>LT</td>
<td>LIGHT (SEE NOTE BELOW)</td>
<td>🙁</td>
</tr>
<tr>
<td>PB</td>
<td>PUSHBUTTON</td>
<td>🙁</td>
</tr>
<tr>
<td>PDT</td>
<td>POTENTIOMETER</td>
<td>🙁</td>
</tr>
<tr>
<td>PS</td>
<td>PRESSURE SWITCH</td>
<td>🙁</td>
</tr>
<tr>
<td>S</td>
<td>TOGGLE / ROTARY SWITCH</td>
<td>VARES</td>
</tr>
<tr>
<td>SOL</td>
<td>SOLENOID</td>
<td>🙁</td>
</tr>
<tr>
<td>TAS</td>
<td>TEMPERATURE SWITCH</td>
<td>🙁</td>
</tr>
<tr>
<td>TD</td>
<td>TIME DELAY</td>
<td>🙁</td>
</tr>
<tr>
<td>TMR</td>
<td>TIMER</td>
<td>🙁</td>
</tr>
</tbody>
</table>

**NOTE:**
Letter within light symbol represents color of lamp:

- A - AMBER
- B - BLUE
- G - GREEN
- R - RED
- W - WHITE
- Y - YELLOW

---

**CONNECTION KEY**

- Wire Splice
- Wire connections at a component terminal
- Wire connection at a terminal block
- Bus bar connection (circuit breakers)
- Wire connection at pin on harness plug where "P" is plug and "X" is the pin
- Wire connection through junction box where "JB" is the junction box i.d. and "X" is the pin
- Wire "X" to sheet # (Schematic only)
- Ground: TBM = Terminal Block
- Pin = Frame
- EN = Engine
- Break point: Connection is removed if near by option taken. (If no option, this mark may be ignored)
- Option boundary
- Option wiring
- Standard wiring

---

**CONNECTOR REFERENCE**

<table>
<thead>
<tr>
<th>REV</th>
<th>COM</th>
<th>PINS</th>
<th>DESTINATION</th>
<th>SOURCE</th>
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<tbody>
<tr>
<td>P1</td>
<td>12</td>
<td></td>
<td>HAND CONTROLLER CABLE</td>
<td>LOGIC BOX</td>
</tr>
<tr>
<td>P2</td>
<td>16</td>
<td></td>
<td>JB1 CABLE</td>
<td>LOGIC BOX</td>
</tr>
<tr>
<td>P3</td>
<td>18</td>
<td></td>
<td>JB2 CABLE</td>
<td>LOGIC BOX</td>
</tr>
<tr>
<td>P5</td>
<td>8</td>
<td></td>
<td>JOYSTICK</td>
<td>CONTROLLER CABLE</td>
</tr>
<tr>
<td>P6</td>
<td>2</td>
<td></td>
<td>WORK LIGHTS</td>
<td>LOGIC BOX</td>
</tr>
<tr>
<td>P7</td>
<td>21</td>
<td></td>
<td>ENGINE ECU (HOUSTON)</td>
<td>LOGIC BOX</td>
</tr>
<tr>
<td>P7</td>
<td>21</td>
<td></td>
<td>ENGINE ECU (MURPHY)</td>
<td>ENGINE HARNESS</td>
</tr>
<tr>
<td>P7</td>
<td>16</td>
<td></td>
<td>ENGINE HARNESS (MURPHY)</td>
<td>ENGINE HARNESS</td>
</tr>
<tr>
<td>c</td>
<td>P6</td>
<td>8</td>
<td>MURPHY DISPLAY</td>
<td>LOGIC BOX</td>
</tr>
</tbody>
</table>

---

**ELECTRICAL DRAWING REFERENCE**

- Cabling Drawing: 97351007
- Logic Box: 31443500
- Canopy Harness: 500284
- Engine Harness: HOUSTON STREET - UP TO S/N 350621
- MURPHY - S/N 350622 & ABOVE: 42350140
- Work Lights Harness: 502026
- Perimeter Lights Harness: 502041

---

**DESCRIPTION**

- Electrical Schematic 24V
- Super Claw Model D

**REVISION HISTORY**

- Located on last sheet

---

**S/N350600 & UP**

---

**CUSTOMARY**

- All dimensions in inches

---

**DESIGN**

- Northco

---

**WORKING DRAWING**

- Revision A

---

**LOCATED ON LAST SHEET**

- S/N350600 & UP
WARNING, IMPLIED TOLERANCES PLAN ANGLES +/- 1/8

TURNTABLE WARNING LIGHT & BUZZER WITH BRAKE APPLY

S/N350600 & UP

CUSTOMARY
ALL DIMENSIONS IN INCHES

ELECTRICAL SCHEMATIC 24V

REVISION HISTORY
LOCATED ON LAST SHEET

 draws

SUPER CLAW MODEL D

SUPER CLAW MODEL D

TM

TM

TM
NOTE: CLAW CYLINDER RETRACT ONLY WHILE BUTTON IS PUSHED. NO INWARD FORCE DURING PULL STROKE.
John Deere Tier 3 Engine

With Murphy PowerView Display

ECU

Wait to Start
Starter Solenoid
Ignition Input Signal
Ignition Input Signal
Shutdown Override Return
Shutdown Override
Bump Enable
Throttle Return
Throttle Signal
SAE J1939 Datalink (+)
SAE J1939 Datalink (-)

Battery Return (-)

Start

Battery Return (+)

Fuel Level Sender

Fuel Level Sensor

ECU

Shutdown Override
Bump Enable

Speedometer Option (M03)

Speedo Sensor Wheel Motor

Speedo Sensor

Engine Diagnostic Panel (Murphy)

Engine Speed

TB1

P17

A

B

C

D

E

F

J97351008NTS

Electrical Schematic 24V

Super Claw Model D

Revision History
Located on Last Sheet

△ S/N350622 to 350647

△
ECO 001696
REV C
DRAWN BY: CHECKED BY: APPROVED BY:
CP DH 9-NOV-2015 02DEC15

SHEET CHANGE
WIRE 841 REMOVED BETWEEN T8D & CR4C
CR4C TO D9@THATODE, WIRE 841 REPLACED WITH WIRE 44.
WIRE 44 ADDED BETWEEN CR4A & S1-ACC.
WIRE 1, TO SOLENOID POS WAS CONNECTED TO 124.
IT 124 CONNECTION BACK TO STANDARD.
WIRE 44 REMOVED FROM S1-BAT.
CB65, 85 AMP ADDED.

10 WIRED 22 REMOVED FROM P77-A TO T8B
AND FROM T8B TO P81-B.
WIRE 44 ADDED FROM T8B TO P81-B.

ECO 001696
REV D
DRAWN BY: CHECKED BY: APPROVED BY:
CP DH 9-JUN-2015 03DEC15

SHEET CHANGE
WIRE 22 REMOVED FROM S1-BAT.
CB12 CONNECTION BACK TO STANDARD.
TO (+).
WIRE 44 ADDED BETWEEN CR40 & S1-ACC.
CR40 TO D1@CATHODE, WIRE 841 REPLACED WITH WIRE 44.
WIRE 44 REMOVED BETWEEN TB3 & CR40.
WIRE 841 REMOVED BETWEEN TB3 & CR40.
WIRE 841 ADDED BETWEEN TB3 & S1-ACC.
CR40 TO D1@CATHODE, WIRE 841 REPLACED WITH WIRE 44.

6 HYDRAULIC OIL MONITOR, M05, ADDED
7 WORK HOUR METER, M06, ADDED
8 Hydrauic Oil Monitor, M05, ADDED
9 WORK HOUR METER, M06, ADDED
10 HYDRAULIC TEMPERATURE GAUGE ADDED

EXAMPLE:

SHEET 1

SHEET 2

SHEET 3

FLIP CHART PRINTING INSTRUCTIONS:
ALL PAGES IN THIS DOCUMENT (WITH THE EXCEPTION OF THIS ONE) ARE TO BE PRINTED IN BLACK AND WHITE ON 11x17 SIZE PAPER. PRINT ON BOTH SIDES, LAMINATE, AND SPIRAL BIND AS SHOWN IN EXAMPLE. DO NOT PRINT, LAMINATE OR BIND THIS SHEET.
### SUPERCLAWS MODEL D LOGIC BOX CONFIGURATION

<table>
<thead>
<tr>
<th>NORDCO P/N</th>
<th>CUSTOMER</th>
<th>M01</th>
<th>M02</th>
<th>M03</th>
<th>M04</th>
<th>M05</th>
<th>M06</th>
<th>M07</th>
<th>M08</th>
<th>M09</th>
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<tr>
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<td>X</td>
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<td>31443515</td>
<td>KCS</td>
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<td>31443516</td>
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</tbody>
</table>

**NOTES:**
1. REFERENCE SCHEMATIC 97351008.
2. USE CABLE TIES ITEM 50 AS REQUIRED.
3. ALL WIRES TO BE IDENTIFIED WITH WIRE MARKERS AT BOTH ENDS. MARKERS ARE TO BE APPLIED ON WIRE, NOT ON TERMINALS.
4. APPLY HEAT SHRINK MATERIAL OVER ALL RESISTORS, DIODES AND CAPACITORS (INDIVIDUAL).
5. ALL WIRE SIZES AND CONNECTORS TO BE PER WIRE CONNECTION LIST.
6. ALL COMPONENT IDENTIFICATIONS SHOWN BOXED ARE TO BE LABELED WITH TEXT SHOWN.
7. WIRES TO BE STRANDED COPPER OF THE INDICATED GAUGE, SXL TYPE OR APPROVED EQUIVALENT.

### HISTORY NOTES:
1. LOGIC BOX 31443516 FOR S/N350637 TO S/N350647.
2. S/N350622 TO 350636, UPRR LOGIC BOX WAS 31443515.
3. S/N350600 TO 350621, LOGIC BOX WAS 31443505.
4. MOD M09 STANDARD ON ALL LOGIC BOXES STARTING S/N350648.
M01
HOUSTON STREET CONTROLLER

INSIDE VIEW

OUTSIDE VIEW

HOUSTON STREET CONTROLLER PAIRED WITH JOHN DEERE TIER 3 ENGINE
USED ON S/N 350600 THRU 350621.

BILL OF MATERIALS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>QTY.</th>
<th>REQ.</th>
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<tbody>
<tr>
<td>1</td>
<td>CONTROLLER, ENGINE</td>
<td>M01</td>
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</tr>
<tr>
<td>2</td>
<td>CONVEXER</td>
<td></td>
<td>01.7</td>
</tr>
<tr>
<td>3</td>
<td>BUCKET STAMPED &amp; FORMED</td>
<td></td>
<td>01.8</td>
</tr>
<tr>
<td>4</td>
<td>BUCKET LOCKING PLUG 1/4&quot;</td>
<td></td>
<td>01.9</td>
</tr>
<tr>
<td>5</td>
<td>LIGHT, WARNING &amp; BUZZER 24V</td>
<td></td>
<td>01.10</td>
</tr>
<tr>
<td>6</td>
<td>RESISTOR, 360 OHM</td>
<td></td>
<td>01.11</td>
</tr>
<tr>
<td>7</td>
<td>BREAKER 5A</td>
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<tr>
<td>8</td>
<td>RESISTOR, 510 OHM</td>
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<td>01.13</td>
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<tr>
<td>9</td>
<td>RESISTOR, 4700 OHM</td>
<td></td>
<td>01.14</td>
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</tbody>
</table>

HOUSTON STREET CONTROLLER TYP

S/N 350600 & UP

CUSTOMARY
SHEET 6 OF 11

REVISION HISTORY
LOCATED ON LAST SHEET

LOGIC BOX ASSEMBLY

PART NUMBER OR MATERIAL

BILL OF MATERIALS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>COMPONENT</th>
<th>BOX</th>
<th>WIRE</th>
<th>WIRE</th>
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</thead>
<tbody>
<tr>
<td>MOD. NEEDS</td>
<td>ADD</td>
<td>SUBTRACT</td>
<td>MOD</td>
<td>SUBTRACT</td>
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</table>
M02
MURPHY POWERVIEW DISPLAY

BIL OF MATERIAL

<table>
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<th>REV</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
<th>MOD</th>
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<tr>
<td></td>
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<td>#</td>
<td>NAME</td>
<td>CODE</td>
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</tr>
<tr>
<td>D</td>
<td>2.1</td>
<td>53110039</td>
<td>PANEL, MURPHY MOUNT</td>
<td>D</td>
<td>2.9</td>
<td>61200055</td>
</tr>
<tr>
<td>D</td>
<td>2.8</td>
<td>51401003</td>
<td>PANEL, MURPHY DISPLAY</td>
<td>D</td>
<td>2.7</td>
<td>53110039</td>
</tr>
<tr>
<td>D</td>
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<td>61000048</td>
<td>RESISTOR, 390 OHM, 1/2 WATT R10</td>
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<tr>
<td>D</td>
<td>2.10</td>
<td>5125579</td>
<td>SWITCH, TOGGLE ON-ON DPST TGS8</td>
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<tr>
<td>D</td>
<td>2.11</td>
<td>7072117</td>
<td>GAUGE, FUEL CHROME, 240-33 OHM RANGE</td>
<td></td>
<td></td>
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<tr>
<td>D</td>
<td>2.12</td>
<td>5166796</td>
<td>AR SOCKET, 14 - 16 GA P110</td>
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<td>D</td>
<td>2.13</td>
<td>5112936</td>
<td>LOCKING WEDGE, FOR 6-SOCKET PLUG</td>
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<tr>
<td>D</td>
<td>2.14</td>
<td>7050060</td>
<td>GAUGE, HYD OIL TEMP, 12V J</td>
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<tr>
<td>D</td>
<td>2.15</td>
<td>5270228</td>
<td>13 FT CORD, #16-2 SOOW #10 STUD</td>
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<tr>
<td>D</td>
<td>2.16</td>
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<td>1 DEVICE CODE</td>
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<tr>
<td>D</td>
<td>2.17</td>
<td>5166816</td>
<td>1 PLUG, 6-SOCKET</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: ITEM 02.7 (PANEL 53110039) NOT USED IF BOTH MODS M02 AND M03 ARE REQUIRED.

HYDRAULIC OIL TEMPERATURE GAUGE - GA7 ADD STANDARD.

MURPHY DISPLAY PAIRED WITH JOHN DEERE TIER 3 ENGINE USED ON S/N350602 & ABOVE.

GAUGE, FUEL, CHROME, 240-33 OHM RANGE VDO A201 125 PLUS RESISTOR #301 102

S/N 350600 & UP
M03 SPEEDOMETER

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER OR MATERIAL</th>
<th>PART NAME</th>
<th>DESIGNATION</th>
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<tbody>
<tr>
<td>03.1</td>
<td>7085930</td>
<td>GA8</td>
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M04 CYCLE COUNTERS

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<th>MOD.</th>
<th>COMPONENT</th>
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<td>03.1</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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</table>

S/N 350600 & UP

MACHINE FINISH UNLESS OTHERWISE STATED

CUSTOMARY FRACTION

1/8 0.06
.03 0.03
.01 0.01

THIRD ANGLE PROJECTION

LOGIC BOX ASSEMBLY

BILL OF MATERIAL

ADD/REMOVE

ITEM  #  PART NUMBER OR MATERIAL  QTY.  REQ. PART NAME DESIGNATION

03.1  7085930  1  GAGE, SPEEDOMETER, 0-85MPH, 24V  GA8

03.2  5120815  1  RECEPTACLE, P4 (03.2)  02837337  2  SCREW, MACH #6-32 X 1/2 LG

03.3  3048028  2  NUT, HEX #6-32

04.1  3064452  2  WASHER, LOCK #6

04.2  04.3  04.4

24 VOLT DC

SHEET 8 OF 11

ASSIGNMENT

LOGIC BOX ASSEMBLY

REVISION HISTORY LOCATED ON LAST SHEET

MOD. NEEDS

COMPONENT

ADD

SUBTRACT

BOX

WIRE

WIRE

CUSTOMARY

ALL DIMENSIONS IN INCHES

IMPLIED TOLERANCES

REFERENCES

BYPASS

CLEAN

CRITICAL

CAUTION

ENG SPEED

HIGH

LOW

DOWN

SET-OFF CYLINDER

UP

CASE DRAIN FILTER

PRESSURE FILTER

DIRT ALARM

RETURN FILTER

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**M05 HYD OIL MONITOR**

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<td>ADD 05.6</td>
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<td>FT CORD, #16</td>
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**M06 WORK HOUR METER**

**M07 PLAQUE ENGLISH VERSION**

**M08 PLAQUE SPANISH VERSION**

---

**TO WARN OPERATOR OF HIGH TEMPERATURE OR LOW OIL CONDITION IN HYDRAULIC OIL TANK.**

**NOTE: PARTS & WIRES IN COMMON WITH TURNTABLE WARNING**

**MOD. NEEDS**

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**MODIFICATION HISTORY**

- **M06 WORK HOUR METER**
  - MOD. NEEDS
- **M07 PLAQUE ENGLISH VERSION**
  - MOD. NEEDS
- **M08 PLAQUE SPANISH VERSION**
  - MOD. NEEDS
**M09 CUMMINS DIAGNOSTIC PLUG**

**BILL OF MATERIAL**

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<td>RESISTOR, 390 OHM 1/2 WATT</td>
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**REVISION HISTORY**

Located on last sheet

**LOGIC BOX ASSEMBLY**

**CUSTOMARY ALL DIMENSIONS IN INCHES**

**CUMMINS DIAGNOSTIC PLUG**

**ADD**

- 02.8 61000048 1 RESISTOR, 390 OHM 1/2 WATT R10
- 02.9 61200055 1 RESISTOR, 3k OHM 1/2 WATT R11

**SUBTRACT**

- 09.1 5166809
- 09.2 5166796
- 09.3 61200040 1 RESISTOR, 120 OHM 1/2 W R1
- 09.4 2837225
- 09.5 P81
- 09.6 P81
- 09.7 P81

**S/N 350648 & UP**
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NO. 31440122 SHEET NO. 1/1

LIST OF MATERIALS

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<td>CORD 16-4 AWG BLACK TYPE SOOW</td>
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INSIDE VIEW OF COVER

NORDCO Engineering Note:
- 97335035dwg must be revised when this Switch Box is revised.

CUSTOMARY:
ALL DIMENSIONS IN INCHES

ADDED WIRE COLORS & ENGINEERING NOTE:
- 02-JAN-13

REV
CHANGE

DESCRIPTION:
BOX, E-STOP/HORN, REMOTE

PRODUCT:
Grabber, Super Claw

INSIDE VIEW OF COVER

NORDCO Engineering Note:
- 97335035dwg must be revised when this Switch Box is revised.
NOTES:

1. E-Stop wiring VERSION 1 uses the N.O. contacts on switch. E-Stop wiring VERSION 2 uses the N.C. contacts on switch.

2. Remote E-Stop button in VERSION 1 is wired in PARALLEL to existing Logic Box E-Stop button. Remote E-Stop button in VERSION 2 is wired in SERIES to existing Logic Box E-Stop button per above diagrams.
NOTE:
Remote HORN button is wired in PARALLEL to existing Logic Box horn button as shown in diagram above.

SEE NEXT SHEET FOR SWITCH/WIRING LAYOUT.
△ S/N350600 TO S/N350621
HOUSTON STREET ENGINE CONTROLLER
SEE SHEET 2 FOR NEWER MACHINES
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PRODUCT:

S/N350622 & ABOVE
MURPHY ENGINE DIAGNOSTIC
SEE SHEET 1 FOR EARLIER MACHINES