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Centennial
BT-1 Computer

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Centennial
BT-1 Computer

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<th>MAIN PUMP</th>
<th>AUX PUMP</th>
<th>MOTOR</th>
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<tbody>
<tr>
<td>LH (CCW)</td>
<td>PIN 6603433 (SPEES)</td>
<td>PIN 6603432</td>
<td>PIN 6603157</td>
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<tr>
<td></td>
<td>PIN 6603243 (AND SPEEDS)</td>
<td></td>
<td>25 cc (1.53 oz)</td>
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<td></td>
<td>71 cc (4.51 in)</td>
<td></td>
<td>LOOP FLOWS</td>
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<tr>
<td></td>
<td>441 cc (3006 cu in)</td>
<td></td>
<td>0.65 GPM @ 95 PSI</td>
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<td></td>
<td>15 bar (220 psi)</td>
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<tr>
<td>RH (CW)</td>
<td>PIN 6603437 (SPEES)</td>
<td>PIN 6603436</td>
<td>PIN 6603219</td>
</tr>
<tr>
<td></td>
<td>PIN 6603242 (AND SPEEDS)</td>
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<td>15 cc (0.94 oz)</td>
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<tr>
<td>LH (CCW)</td>
<td>PIN 6603460 (SPEES)</td>
<td>PIN 6603432</td>
<td>PIN 6603173</td>
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<tr>
<td></td>
<td>PIN 6603759 (AND SPEEDS)</td>
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<td>25 cc (1.53 oz)</td>
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<tr>
<td>RH (CW)</td>
<td>PIN 6603459 (SPEES)</td>
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<td>PIN 6603310</td>
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<td>PIN 6603738 (AND SPEEDS)</td>
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<tr>
<td>LH (CCW)</td>
<td>PIN 6603435 (SPEES)</td>
<td>PIN 6603432</td>
<td>PIN 6603173</td>
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<td></td>
<td>PIN 6603701 (AND SPEEDS)</td>
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<tr>
<td>RH (CW)</td>
<td>PIN 6603434 (SPEES)</td>
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<td>PIN 6603740 (AND SPEEDS)</td>
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**Diagram Notes:**

- P/N 660223 BREATHER
- P/N 6602214 FILTER ASM 10 MICRON (405)
- P/N 660205571 FILTER ASM 10 MICRON (405)
- P/N 6410079 GEAR BOX 4.5 TO 1 NOMINAL, 4.59 TO 1 ACTUAL
- P/N 6602223 HYD OIL TEXACO RED CO #46
<table>
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<tr>
<th>PTO ROTATION</th>
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<tr>
<td>LH (CCW)</td>
<td>PIN 6603243&lt;br&gt; TWO SPEEDS 42 GPM (159 L/min) 345 bar (5040 psi) CHARGE PUMP 15 L (0.5 cu ft) 205 bar (3000 psi)</td>
<td>PIN 6603432&lt;br&gt; 23 cc (1.44 cu in)</td>
<td>PIN 6603157&lt;br&gt; 25 cc (1.53 cu in)&lt;br&gt; 0.45 GPM @ 290 PSI</td>
</tr>
<tr>
<td>RH (CW)</td>
<td>PIN 6603242&lt;br&gt; TWO SPEEDS 42 GPM (159 L/min) 345 bar (5040 psi) CHARGE PUMP 15 L (0.5 cu ft) 205 bar (3000 psi)</td>
<td>PIN 6603436&lt;br&gt; 23 cc (1.44 cu in)</td>
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<tr>
<td>LH (CCW)</td>
<td>PIN 6603759&lt;br&gt; TWO SPEEDS 90 GPM (341 L/min) 350 bar (5000 psi) CHARGE PUMP 20 cc (1.24 cu in) 205 bar (3000 psi)</td>
<td>PIN 6603432&lt;br&gt; 23 cc (1.44 cu in)</td>
<td>PIN 6603219&lt;br&gt; 15 L (0.5 cu ft)&lt;br&gt; 0.6 GPM @ 290 PSI</td>
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<tr>
<td>RH (CW)</td>
<td>PIN 6603756&lt;br&gt; TWO SPEEDS 90 GPM (341 L/min) 350 bar (5000 psi) CHARGE PUMP 20 cc (1.24 cu in) 205 bar (3000 psi)</td>
<td>PIN 6603436&lt;br&gt; 23 cc (1.44 cu in)</td>
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<tr>
<td>LH (CCW)</td>
<td>PIN 6603761&lt;br&gt; TWO SPEEDS 90 GPM (341 L/min) 350 bar (5000 psi) CHARGE PUMP 20 cc (1.24 cu in) 205 bar (3000 psi)</td>
<td>PIN 6603432&lt;br&gt; 23 cc (1.44 cu in)</td>
<td>PIN 6603173&lt;br&gt; 44 cc (2.73 cu in)&lt;br&gt; 1.05 GPM @ 290 PSI</td>
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<td>RH (CW)</td>
<td>PIN 6603760&lt;br&gt; TWO SPEEDS 90 GPM (341 L/min) 350 bar (5000 psi) CHARGE PUMP 20 cc (1.24 cu in) 205 bar (3000 psi)</td>
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</table>
THE COMPUTER GROUND (BK) MUST BE IN THE SAME GROUNDING LEVER CONNECTOR AS BOTH SMART CYLINDER (BL) GROUNDS AS WELL AS ONE OF THE TWO MAIN 14 AWG GROUND LINES. EACH END OF THE GROUND TERMINAL STRING NEEDS TO HAVE ONE OF THE TWO MAIN 14 AWG GROUNDS.

REAR CONTROL BOX
ALL WIRE 18 AWG UNLESS NOTED

E.D. ETNYRE & CO.
OREGON, IL. 61061

DRAWING TITLE: ELECTRICAL SCHEMATIC-VWSB.16
DRAWING NO.: 9306416
REV: A

DATE: 6/24/16
SHEET: 2 OF 3

COLOR CODE
BE = BLACK
BR = BROWN
GR = GREEN
OR = ORANGE
PE = PINE
RD = RED
WH = WHITE
Y = YELLOW

TOLERANCE (UNLESS SPECIFIED)
FRAC TOL: +3/4
DEC TOL: ± 0.015 ANG TOL: ± 30°
OUTSIDE OF UNIT
ORDER OF LEDS

FLAME (RED) = ON WHEN COMMAND APPLIED, NO FAULTS AND FLAME DETECTED BY CAD CELL
POWER (GREEN) = ON WHEN POWER APPLIED TO CONTROL
MOTOR (GREEN) = ON WHEN MOTOR OUTPUT ON
VALVE (GREEN) = ON WHEN VALVE OUTPUT ON
IGNITOR (GREEN) = ON WHEN IGNITOR OUTPUT ON

FAULT FLASH PATTERNS OF RED LED (SHORT = ½ SECOND, LONG = 2 SECOND)

1. SHORT, 1 LONG = CAD > 20K ON POWER UP
2. SHORT, 1 LONG = IGNITOR OUTPUT SHORTED TO 12V
3. SHORT, 1 LONG = VALVE OUTPUT SHORTED TO 12V
4. SHORT, 1 LONG = MOTOR OUTPUT SHORTED TO 12V
5. SHORT, 1 LONG = NO IGNITION DETECTED AFTER 15 SECONDS THROUGH CAD CELL
6. SHORT, 1 LONG = VALVE OUTPUT OVER CURRENT OR SHORTED TO GND
7. SHORT, 1 LONG = IGNITOR OUTPUT OVER CURRENT OR SHORTED TO GND
8. SHORT, 1 LONG = MOTOR OUTPUT OVER CURRENT OR SHORTED TO GND

FAULTS CLEARED WITH COMMAND INPUT
ORDER OF LEDS

FLAME (RED) - ON WHEN COMMAND APPLIED, NO FAULTS AND FLAME DETECTED BY CAD CELL
POWER (GREEN) - ON WHEN POWER APPLIED TO CONTROL
VALVE (GREEN) - ON WHEN VALVE OUTPUT ON
IGNITER (GREEN) - ON WHEN IGNITER OUTPUT ON

FAULT FLASH PATTERNS OF RED LED (5 SECOND FLASH, 2 SECOND PAUSE BETWEEN FAULTS)
1. FLASHES = CAD = OK ON POWER UP
2. FLASHES = IGNITER OUTPUT SHORTED TO 12V
3. FLASHES = VALVE OUTPUT SHORTED TO 12V
4. FLASHES = MOTOR OUTPUT SHORTED TO 12V
5. FLASHES = NO FLAME DETECTED AFTER 15 SECONDS THROUGH CAD CELL
6. FLAHS = NO IGNITION DETECTED AFTER 15 SECONDS THROUGH CAD CELL
7. FLASHES = IGNITER OUTPUT OVER CURRENT OR SHORTED TO GND
8. FLASHES = MOTOR OUTPUT OVER CURRENT OR SHORTED TO GND

FAULTS CLEARED WITH COMMAND INPUT
**ORDER OF LEDS**

**POWER (GREEN)** = ON WHEN POWER IS APPLIED TO CONTROLLER
- **HI VALVE (GREEN)** = ON WHEN HI VALVE OUTPUT ON
- **SPARK (GREEN)** = ON WHEN SPARK OUTPUT IS PULSING
- **FLAME (RED)** = ON WHEN COMMAND APPLIED, NO FAULTS AND FLAME DETECTED
- **LO VALVE (GREEN)** = ON WHEN LO VALVE OUTPUT ON

FAULT FLASH PATTERNS OF RED LED (5 SECOND FLASH, 2 SECOND PAUSE BETWEEN FAULTS):
1. FLASHES + HI VALVE OUTPUT SHORTED TO GND
2. FLASHES + HI VALVE OUTPUT CIRCUIT SHORTED TO GND
3. FLASHES + LO VALVE OUTPUT SHORTED TO GND
4. FLASHES + LO VALVE OUTPUT CIRCUIT SHORTED TO GND
5. FLASHES + LOCKOUT (FAILURE TO GIVE 137 AFTER FOUR TIMES)
6. FLASHES + FLAME FAULT, FLAME PRESENT UPON START UP

FAULTS CLEARED WITH COMMAND INPUT

**IMPORTANT!**
ROUTE THE HIGH VOLTAGE WIRE AWAY FROM THE CONTROLLER, TERMINAL STRIP AND OTHER WIRING

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**GROUND SPEED AND PRODUCT DISCHARGE INTERLOCK CONTROL**

**NOTE:** IF POWER TO "B" AND "G" IS CYCLED DURING BURNER OPERATION, POWER TO "K" AND "O" MUST THEN BE CYCLED FOR FURTHER BURNER OPERATION.

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**THERMOSTATIC CONTROL**

- TEMPERATURE SETPOINT displayed in display

**SWITCH Wiring in Rear Control Box**
- CONNECTION TO POWER TERMINAL IN REAR CONTROL BOX
- **HARNESS PIN 3370500** (COMPUTER PIN 40)

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**HARNESS PIN 3370654**

**ORDER OF LEDS**

**POWER (GREEN)** = ON WHEN POWER IS APPLIED TO CONTROLLER
- **HI VALVE (GREEN)** = ON WHEN HI VALVE OUTPUT ON
- **SPARK (GREEN)** = ON WHEN SPARK OUTPUT IS PULSING
- **FLAME (RED)** = ON WHEN COMMAND APPLIED, NO FAULTS AND FLAME DETECTED
- **LO VALVE (GREEN)** = ON WHEN LO VALVE OUTPUT ON

FAULT FLASH PATTERNS OF RED LED (5 SECOND FLASH, 2 SECOND PAUSE BETWEEN FAULTS):
1. FLASHES + HI VALVE OUTPUT SHORTED TO GND
2. FLASHES + HI VALVE OUTPUT CIRCUIT SHORTED TO GND
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FAULTS CLEARED WITH COMMAND INPUT