PIPELINER MACHINE SCHEMATIC L12020 REV: A

IDLER / ENGINE PROTECTION PC BOARD

LOCATED BEHIND UPPER PORTION OF CONTROL PANEL

SCHEMATIC L10826

J2 CONNECTOR IS NOT USED ON THIS MACHINE

J2-1, J2-2: UNUSED

J2-3, J2-4: USED FOR TOROID IN AC AUXILIARY MACHINES

J1-3

J1-4 — 61 — RED ENGINE PROTECTION LIGHT — 12 VOLT - NORMALLY OFF

J1-9 — 58 — INJECTION PUMP SOLENOID — TYPICAL CURRENT DRAW IS .98 AMPS

58H — FUEL PUMP — TYPICAL CURRENT DRAW IS .56 AMPS

NO OVER CURRENT PROTECTION

J1-10 — 58A — HOUR METER

J1-5

ENGINE SHUTDOWN

N.C. — CR1

N.O. — CR1 — ENGINE RUNNING

FLYBACK DIODE

J1-8, J1-2, J1-1

ENGINE PROTECTION AND ALTERNATOR FLASHING DELAY TIMER (SEE BELOW FOR LOGIC)

Q2

IDLER DELAY TIMER CIRUITS Q2 ON FOR HIGH IDLE

J1-6

J1-7

R — 70 — IDLER SWITCH — SHOWN IN "AUTO IDLE" POSITION

ENGINE PROTECTION AND ALTERNATOR FLASHING DELAY TIMER LOGIC

UPON RECIEVEING POWER, CIRCUIT TO FLASH ALTERNATOR IS OPENED AND ENGINE PROTECTION IS BYPASSED. AFTER TIME DELAY, ALTERNATOR FLASHING CIRCUIT IS CLOSED AND ENGINE PORECTION IS ENABLED. NOTE: AFTER TIME DELAY WHEN ENGINE PROTECTION IS ENABLED, IF THE ENGINE IS NOT STARTED THE OIL PRESSURE WILL BE LOW AND THE MACHINE WILL SHUT DOWN BECAUSE OF THE ENGINE PROTECTION CIRCUIT.

LEFT SIDE OF ENGINE (AS VIEWED FROM CONTROL PANEL)

ALTERNATOR — 55 AMP / 12 VOLT — FLASH, BAT, BAT

59 — 3 AMP CURRENT LIMIT — IDLE SOLENOID — 57 — 56 — 56A — 53B

8.8+/-.88 OHMS TYPICAL CURRENT DRAW IS 1.25 AMPS

51 — 51G — 51A

IGNITION SWITCH — SHOWN IN "OFF" POSITION

212A — 54B — 54D — TEMPERATURE GAUGE

TEMPERATURE SWITCH / SENDER

SWITCH CLOSES AT 230+/-6F

SENDER OPERATION:
140 F -> 134+/-13.5 OHMS
194 F -> 51.2+/-4.3 OHMS
212 F -> 38.5+/-3 OHMS

SENDER IS APPROX. 500 OHMS AT 70F

212B — 54 — 200 — OIL PRESSURE GAUGE

OIL PRESSURE SWITCH / SENDER

SWITCH CLOSES AT 6+/-2 PSI

SENDER OPERATION:
0 PSI -> 10+/-5 OHMS
40PSI -> 105+/-5 OHMS
80 PSI -> 187+/-5 OHMS

GLOW PLUG SWITCH — 53 — GLOW PLUGS

AMMETER SHOWS FULL DISCHARGE WHILE PRESSING GLOW PLUG SWITCH

50B — -40 TO 40 AMPS AMMETER +/-

TYPICAL CURRENT DRAW IS 40 +/- 3 AMPS

50 — 50A — START SWITCH — 52 — STARTER SOLENOID — STARTER MOTOR

BACK OF MACHINE (AS VIEWED FROM CONTROL PANEL)

BATTERY +

12.6 VOLTS MIN AT REST
14-14.5 VOLTS WHILE RUNNING

K924-5 REMOTE CONTROL (OPTIONAL)

REMOTE CONTROL PLUG — G, Y, X, W

25+/-1.25 OHMS EACH

64+/-6.4 OHMS MAX

CCW

RHEOSTAT

REMOTE CONTROL BOX

DC EXCITER

SHUNT FIELD — SERIES FIELD

FDW-5M EXCITER COIL:
SHUNT COIL WINDINGS ARE 65+/-1.5 OHMS EACH
SERIES COIL WINDINGS ARE .143 +/-.005 OHMS EACH

DC EXCITER USES RESIDUAL MAGNETISM TO FLASH

BRUSH POSITION SHOWN AS VIEWED FROM CONTROL PANEL

DC AUXILIARY RECEPTACLE

JUMPER PLUG IS FOR CONNECTION TO WIRE FEED MODULE

P10 — J5 — 12 11 10 9 8 7 6 5 4 3 2 1

FLYBACK DIODE PREVENTS VOLTAGE SPIKES IN SHUNT FIELD FROM DAMAGING LOCAL/REMOTE TOGGLE SWITCH WHEN SWITCHED

JUMPER PLUG IS WIRE-TIED UP BEHIND LOCAL / REMOTE SWITCH ON RIGHT SIDE OF MACHINE (AS VIEWED FROM CONTROL PANEL)

RHEOSTAT — CCW — 64+/-6.4 OHMS MAX — 602B

J8 — P9 — 6 4 5 3 1 2

602

G, Y, X, W

REMOTE RECEPTACLE

JUMPER PLUG IS WIRE-TIED UP BEHIND LOCAL / REMOTE SWITCH ON RIGHT SIDE OF MACHINE (AS VIEWED FROM CONTROL PANEL)

LOCAL / REMOTE SWITCH — SHOWN IN LOCAL POSITION

130

U

N

841

844

761 — FUSE 15 AMP — 720

LOCATED BEHIND UPPER PORTION OF CONTROL PANEL

SENSOR GROUNDS LEAD TO IDLER / ENGINE PROTECTION BOARD ON SENSE OF WELD OR AUXILIARY LOAD

CURRENT SENSING PC BOARD

J3-4, J3-1, J3-3, J3-2 — DRIVER CIRCUITS

12 VOLT SUPPLY

1 TURN

3 TURNS

THESE LEADS MUST BE ROUTED THRU CURRENT SENSOR IN SAME (CURRENT FLOW) DIRECTION AS SHOWN

67

GENERATOR LEAD BLOCK SHOWN AS VIEWED WITH ENGINE IN THIS DIRECTION

SELECTOR SWITCH — 90-MIN, 130-80, 190-120, 240-160, 220-MAX

SERIES FIELD — SHUNT FIELD — INTERPOLE COILS

FJW-5AR COIL PAIR: 22.5+/-.5 OHMS EACH

BRUSH POSITION SHOWN AS VIEWED FROM CONTROL PANEL

WELDING GENERATOR

NEGATIVE OUTPUT TERMINAL — POSITIVE OUTPUT TERMINAL

TYPICAL OCV (WARM MACHINE):
88-98 VOLTS AT MAX RHEOSTAT
47-60 VOLTS AT MIN RHEOSTAT

LEAD COLOR CODE:
B-BLACK OR GRAY
G-GREEN
O-ORANGE
R-RED OR PINK
U-BLUE
W-WHITE
Y-YELLOW

LABELS:
COMMON
FRAME GROUND
EARTH GROUND

COMPONENT VALUE UNITS:
CAPACITOR: MFD/VOLTS
RESISTOR: OHMS/WATTS

CONNECTOR PIN NUMBERS:
EX. 12 PIN CONNECTOR
1 2 → 6
7 → 12 LATCH
VIEW OF CONNECTOR ON PC BOARD

12/21