Wiring Procedure

# Soldering components to the Radio Shack Universal Component PC Board

Soldering the Mosfet IRF510 (1)

Solder Mosfet Source Pin to GROUND of the PCB

Solder Mosfet Drain Pin to Pin 14 of the PCB

Solder Mosfet Gate Pin to Pin 15 of the PCB

Also, Solder Mosfet Gate Pin to 10k then from the 10k to GROUND of the PCB

Soldering the Mosfet IRF510 (2)

Solder Mosfet Source Pin to GROUND of the PCB

Solder Mosfet Drain Pin to Pin 12 of the PCB

Solder Mosfet Gate Pin to Pin 13 of the PCB

Also, Solder Mosfet Gate Pin to 10k then from the 10k to GROUND of the PCB

Soldering the Mosfet IRF510 (3)

Solder Mosfet Source Pin to GROUND of the PCB

Solder Mosfet Drain Pin to Pin 10 of the PCB

Solder Mosfet Gate Pin to Pin 11 of the PCB

Also, Solder Mosfet Gate Pin to 10k then from the 10k to GROUND of the PCB

Soldering the Op-Amp LM747CH (1)

Op-Amp Pin# 10 is Not Connected

Solder Op-Amp Pin# 1 to Pin 8 of the PCB

Solder Op-Amp Pin# 2 to V+ of the PCB

Solder Op-Amp Pin# 3 to Op-Amp Pin# 1

Solder Op-Amp Pin# 4 to 18k then from the 18k to Pin 9 of the PCB

Solder at the 18k and Op-Amp Pin# 4 Junction to 12k then to a 1k then to Ground

Solder Op-Amp Pin# 5 to V- of the PCB

Solder Op-Amp Pin# 6 to 18k then from the 18k to Pin 6 of the PCB

Solder at the 18k and Op-Amp Pin# 6 Junction to 12k then to a 1k then to Ground

Solder Op-Amp Pin# 7 to Op-Amp Pin# 9

Solder Op-Amp Pin# 8 to V+ of the PCB

Solder Op-Amp Pin# 9 to Pin 7 of the PCB

Soldering the Op-Amp LM747CH (2)

Solder Op-Amp Pin# 5 to V- of the PCB

Solder Op-Amp Pin# 6 to 18k then from the 18k to Pin 5 of the PCB

Solder at the 18k and Op-Amp Pin# 6 Junction to 12k then to a 1k then to Ground

Solder Op-Amp Pin# 7 to Op-Amp Pin# 9

Solder Op-Amp Pin# 8 to V+ of the PCB

Solder Op-Amp Pin# 9 to Pin 4 of the PCB

# Connecting to the Radio Shack Universal Component PC Board

Connecting the Power Supply to the PCB

Connect the yellow +12Volt wire of the Power Supply to V+

Connect the Blue -12Volt wire of the Power Supply to V-

Connect the Black Ground wire of the Power Supply to Ground

Connecting to the Arduino Mega for Switching

Connect Digital Pin# 3 to Pin 15

Connect Ethanol Output to Pin 14

Connect Digital Pin# 4 to Pin 13

Connect Charge Controller Output to Pin 12

Connect Digital Pin# 5 to Pin 11

Connect Battery Output to Pin 10

Connecting the Arduino Mega to the Voltage Divider

Connect Solar Panel Output to Pin 9

Connect Analog Pin# 1 to Pin 8

Connect Analog Pin# 2 to Pin 7

Connect Wind Turbine Output to Pin 6

Connect Battery Output to Pin 5

Connect Analog Pin# 3 to Pin 4

Pin 3 not connected

Pin 2 not connected

Pin 1 not connected

# Connecting the Arduino Uno to the IR Receiver

Connecting the IR Receiver

Connect G to the Ground

Connect R to the +5V

Connect Y to Digital Pin# 11

# Connecting the Arduino Uno to the Stepper Motor

Connecting the Stepper Motor Driver

Connect DIRECTION to Digital Pin# 3

Connect STEP to Digital Pin# 4

Connect ENABLE to Digital Pin# 2

Connect SLEEP to +5V

Connect RESET to +5V

Connect MS3 to +5V

Connect MS2 to +5V

Connect MS1 to +5V

Connect VDD to +5V

Connect GND to GROUND

Connect 1B to GRN (Stepper Motor)

Connect 1A to BLK (Stepper Motor)

Connect 2A to RED (Stepper Motor)

Connect 2B to BLUE (Stepper Motor)

Connect GND to GND (Stepper Motor)

Connect VMOT to PWR (Stepper Motor)