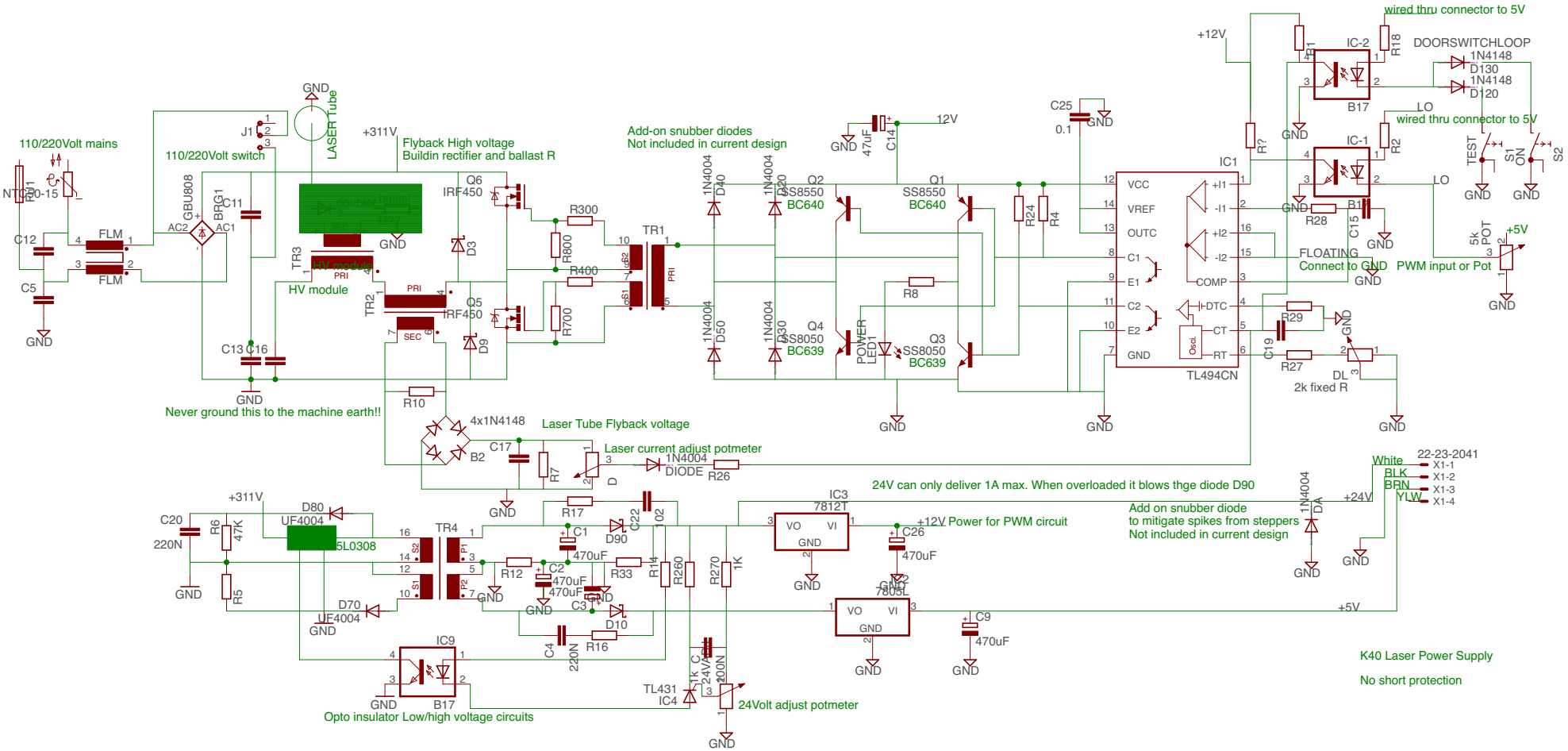
110/220Volt mains
110/220Volt switch
LASER Tube
+311V
Flyback High voltage
Buildin rectifier and ballast R
Add-on snubber diodes
Not included in current design
wired thru connector to 5V
DOORSWITCHLOOP
1N4148
D130
1N4148
D120
LO
wired thru connector to 5V
TEST
S1
ON
S2
+12V
12V
C25
0.1
IC1
TL494CN
VCC
VREF
OUTC
C1
E1
C2
E2
GND
+I1
-I1
+I2
-I2
COMP
DTC
CT
RT
Osci.
IC-2
B17
IC-1
B1
R18
R1
R2
R28
C15
FLOATING
Connect to GND
PWM input or Pot
5k
POT
+5V
R29
C19
R27
DL
2k fixed R
Q1
SS8550
BC640
Q2
SS8550
BC640
Q3
SS8050
BC639
Q4
SS8050
BC639
Q5
IRF450
Q6
IRF450
TR1
TR2
TR3
HV module
PRI
SEC
R300
R400
R800
R700
R8
R24
R4
POWER
LED1
47uF
C14
1N4004
D40
D20
D50
D30
D3
D9
FLM
NTC
R50-15
C12
C5
GBU808
BRG1
C11
C13
C16
J1
R10
Never ground this to the machine earth!!
4x1N4148
B2
C17
R7
Laser Tube Flyback voltage
Laser current adjust potmeter
1N4004
DIODE
R26
D
24V can only deliver 1A max. When overloaded it blows thge diode D90
Add on snubber diode
to mitigate spikes from steppers
Not included in current design
1N4004
DA
+24V
White
BLK
BRN
YLW
22-23-2041
X1-1
X1-2
X1-3
X1-4
C20
220N
R6
47K
R5
D80
UF4004
5L0308
TR4
D70
UF4004
R17
C1
470uF
C2
470uF
C3
470uF
D90
C22
102
R12
R33
R14
R260
R270
1K
D10
R16
C4
220N
IC3
7812T
VO
VI
+12V Power for PWM circuit
C26
470uF
IC2
7805L
C9
470uF
+5V
IC9
B17
Opto insulator Low/high voltage circuits
TL431
IC4
1k
C
24V
200N
24Volt adjust potmeter
K40 Laser Power Supply
No short protection