X/Y MACHINE INTERFACE

NOTE: ARC VOLTAGE CONTROL IS DISABLED WHEN CORNER CONTACTS ARE CLOSED.

NOTE: CONTACT CLOSURE WHEN ARC TRANSFERS TO PLATE.

NOTE: SYSTEM #1 BEGINS SEQUENCE WHEN START CONTACTS ARE CLOSED.

NOTE: IN AUTO, CONTACTS ARE CLOSED WHEN CYCLE IS COMPLETE. CONTACTS ARE ALWAYS CLOSED WHILE IN MANUAL.

NOTE: PARTIAL RAISE IS DISABLED WHEN CONTACTS ARE OPEN.

NOTE: SYSTEM #2 BEGINS SEQUENCE WHEN START CONTACTS ARE CLOSED.

CORNER RELAY CONTACTS LOAD: 12VDC, 5mA

MOTION OUTPUT

SYSTEM #1 START LOAD: 12VDC, 5mA

CYCLE COMPLETE OUTPUT

PARTIAL RAISE ENABLE LOAD: 12VDC, 5mA

SYSTEM #2 START LOAD: 12VDC, 5mA

INOVA CONTROL CONSOLE #2

P6: KEY 8, GND 5, T* 4, T 3, R* 2, R 1

X/Y RS422 PORT

T, T*, R, R*, COMM GND

PLASMA POWER SUPPLY

POWER SUPPLY START INPUT

POWER SUPPLY MOTION SIGNAL OUTPUT

POWER SUPPLY ARC HOLD INPUT

INOVA VOLTAGE DIVIDER

CONNECT TO NEGATIVE OUTPUT OF POWER SUPPLY — P.S.− — SIGNAL −

CONNECT TO CHASSIS OF POWER SUPPLY — SIGNAL +

CONNECT TO POSITIVE OUTPUT OF POWER SUPPLY — P.S.+ — LOGIC −

LOGIC +

CONNECT TO IHS WIRE OR TO TORCH NOZZLE (AT PILOT ARC RELAY) — PILOT ARC — 120 VAC — 120V SUPPLIED BY POWER SUPPLY

INOVA CONTROL CONSOLE

INOVA MICROPROCESSOR CONTROL PCB

P4(24 POS) KEY 17

"F" CABLE

1	P18 12	CORNER FREEZE IN
2	P18 11	GND
3	P19 7	MOTION OUT
4	P19 8	MOTION OUT
5	P18 2	CYCLE START
6	P18 1	GND
7	P19 3	CYCLE COMP OUT
8	P19 4	CYCLE COMP OUT
9	P18 14	PARTIAL ENABLE IN
10	P18 13	GND
11	P18 20	IHS COMP IN
12	P18 19	GND
13	P19 9	IHS COMP OUT
14	P19 10	IHS COMP OUT

CONTACT RATING: 125VAC / .6A 30 VDC / 2A

P8(24 POS) KEY 11

"J" CABLE

MOTION OUT 3		
MOTION OUT 4		
CYCLE START IN 5		
GND 6		
IHS COMPLETE OUT 15		
IHS COMPLETE OUT 16		
IHS COMPLETE IN 13		
GND 14		
CORNER FREEZE IN 1	P19 12	AUXRELAY1/CNR OUT
GND 2	P19 13	AUXRELAY1/CNR OUT
CYCLE COMPLETE OUT 7	P19 22	AUXIN1/CYC COMP IN
CYCLE COMPLETE OUT 8	P18 21	GND
PARTIAL RAISE ENABLE IN 9	P19 14	AUXRELAY2/PART OUT
GND 10	P19 15	AUXRELAY2/PART OUT
NC		
NC		
NC		
NC		
	P18 24	AUXIN2
	P18 23	GND

P6(9 POS) KEY 8

"G" CABLE

T 1	P14 3	R
T* 2	P14 2	R*
R 3	P14 5	T
R* 4	P14 4	T*
COMM GND 5	P14 1	GND

"H" CABLE P7(7 POS)

P3(9 POS) KEY 9

"C" CABLE

1	P19 1	PLASMA START
2	P18 2	PLASMA START
3	P18 4	MOTION IN
4	P18 3	GND
5	P19 5	ARC HOLD
6	P19 6	ARC HOLD

CONTACT RATING: 125VAC / .6A 30 VDC / 2A

P2(9 POS) KEY 2

"D" CABLE

V.D. FILTER PCB: 270Ω, TVS

4	P9 13	SIG−
5	P9 13	SIG+
1	P9 18	GND
2	P9 18	PLATE SENSE
3	P9	

GND, OVER CURRENT, GND, MOTOR VOLTAGE, PWMDN, DOWN, PWMUP, UP, GND, +12V

TR1(DP-241-8-20): 1, 2, 4, 5, 6, 10, 20VAC, 6A

POWER ENTRY MODULE: 3A

230VAC 50/60 Hz — HOT, NEUTRAL, GROUND

TB1: 1 TO P23-1, 2, 3 TO P23-3, 4

P25 3	20V	
P25 4	20V	
P25 5	115/230V	
P25 6	115/230V	

OC−, OC+, MOTOR VOLT−, MOTOR VOLT+, PWM DOWN, DOWN, PWM UP, UP, EXT GND, 12V EXT — H-BRIDGE PCB

PROX PWR+ 15	P24	
PROX PWR− 16	P24	
MOTOR+ 2	P25	
MOTOR− 1	P25	

POWER DISTRIBUTION PCB

P5 (14 POS) — "A" CABLE — P20(14 POS)

T 5	P15	
T* 4	P15	
R 3	P15	
R* 2	P15	
GND 1	P15	
12V REM LCD 14	P22	
12V REM LCD 15	P22	
6V REM MCU 6	P22	
6V REM MCU 7	P22	
6V REM COMM 8	P22	
6V REM COMM 9	P22	
115/230V 1	P23	TO TB1-1
115/230V 3	P23	TO TB1-3
6V ENCODER 1	P22	
6V ENCODER 2	P22	
24V BRAKE 16	P22	
24V BRAKE 17	P22	
12V MCU 12	P22	
12V MCU 13	P22	
6V COMM 10	P22	
6V COMM 11	P22	
14V ANALOG 3	P22	
14V ANALOG 5	P22	
GND 4	P22	
GND 7	P17	
14A 9	P17	
14A 8	P17	
6C 6	P17	
6C 5	P17	
12P 2	P17	
12P 1	P17	
24V 2	P12	
24V 1	P12	
6E 4	P17	
6E 3	P17	
UPPER LIMIT 8	P18	
LOWER LIMIT 6	P18	
+5 3	P16	
GND 4	P16	
A 2	P16	
A* 1	P16	
B 6	P16	
B* 5	P16	
BRAKE 3	P12	
BRAKE 4	P12	

"E" CABLE — GROUND LUG — CONNECT TO STAR GROUND

"B" CABLE — P1(24 POS) KEY 7 — P10(16 POS)

3		WHT
4		BLK
17		
5		GRN
6		BLK
8		BLU
9		BLK
14		
10		YEL
11		BLK
12		BRN
13		BLK
21		
15		ORN
16		BLK
1		RED
2		BLK
22		
23		RED NC, WHT NC
24		RED NC, GRN NC

INOVA REMOTE CONTROL UNIT

"A" CABLE — P5 (14 POS) — P20(14 POS)

1		RED
2		BLK
KEY 12		
3		WHT
4		BLK
5		GRN
13		
6		BLU
7		BLK
8		YEL
9		BLK
14		
10		BRN
11		BLK

"I" CABLE (SEE NOTE BELOW)

POWER SUPPLY RS-422 PORT — P21(9 POS) KEY 1

T 3		RED
T* 2		BLK
R 5		WHT
R* 4		BLK
GND 1		GRN
		BLK

COMM PCB: TOUCHSCREEN, LCD, BACKLIGHT

	P30 P33 P34	
DOWN	P35 1	DWN
	P35 2	GND
UP	P35 3	UP
	P35 4	GND
	P31 1	12VAC
	P31 2	12VAC
	P31 3	6VAC
	P31 4	6VAC

REMOTE MICROPROCESSOR PCB

TX2 1	P32	P27 1 RX2
RX2 2	P32	P27 2 TX2
TX1 3	P32	P27 3 RX1
RX1 4	P32	P27 4 TX1
+5V 5	P32	P27 5 +5V
GND 6	P32	P27 6 GND
	P29 1	6VAC
	P29 3	6VAC
	P28 3	RX1
	P28 4	RX1*
	P28 1	TX1
	P28 2	TX1*
	P28 5	GND

NOTE: WHEN THE INOVA SYSTEM IS OPERATED WITHOUT A REMOTE CONTROL UNIT, CONNECT THE PLASMA POWER SUPPLY DIRECTLY TO P5 ON THE CONTROL CONSOLE USING THE "K" CABLE (PROVIDED THAT THE POWER SUPPLY IS COMMUNICATING VIA RS-422 SERIAL COMMUNICATION).

INOVA POSITIONER

UPPER LIMIT SWITCH FILTER PCB: P1 RED 1, RED 2, BLK 2 — UPPER LIMIT SWITCH (ULS) — P2 RED 1, BLK 2, WHT 3, GRN 4

LOWER LIMIT SWITCH FILTER PCB: P1 RED 1, BLK 2, WHT 3 — LOWER LIMIT SWITCH (LLS)

ENCODER: +5V, GND, A, A*, B, B*

BRAKE(S)

MOTOR

1		RED
2		BLK
22		
23		RED NC, WHT NC
24		RED NC, GRN NC

KALIBURN

SCALE: NONE	APPROVED BY:	DRAWN BY: JTH
DATE: 5/10/07		REVISION: 3

INOVA SYSTEM SCHEMATIC (230VAC)

TOLERANCE: .XX .XXX ANGLE — DRAWING NUMBER: D-111504