

Spindle Servo Drive CN3			
Function	Name	Pin	
A Phase Encoder Feedback Output	OA+	9	TB3-7
	OA-	18	TB3-8
B Phase Encoder Feedback Output	OB+	17	TB3-10
	OB-	8	TB3-11
Z Phase Encoder Feedback Output	OZ+	7	TB3-13
	OZ-	16	TB3-14
	0V	25	
	5V	26	
Shield GND	E	27	

Spindle Servo Drive CN1			
Function	Name	Pin	
Alarm Ready Relay Output	E	1	
C Axis Ready Relay Output	MIC	2	
Relay Output	M1B	3	
Speed in Position Digital Output	O3P	4	
Zero Stop in Position Digital Output	O2N	5	
Servo Ready Output Digital Output	O0N	6	
Digital Input Correct Stop	I2	7	
Digital Input Rigid Tapping	I3	8	
Digital Input Position Mode	I4	9	
Digital Input Scram/Zero Speed	I5	10	
Digital Input Swing	I6	11	
Connect +24v = NPN or COM = PNP	SEL	12	COM
Analog +/- 10v Input	A0	14	
Analog 0-10V Input	A1	15	TB4-2
Alarm Relay Output	Er	16	
Alarm Relay Output	E	17	
Relay Output	M1A	18	
Speed in Position	O3N	20	
Correct Stop in Position	O1N	21	
Digital Input CW	I0	22	TB4-6
Digital Input CCW	I1	23	TB4-8
Digital Input Jog	I8	24	
Digital Input 2nd Correct Stop	I9	25	
Digital Input Fault Reset	I7	26	
Analog Ground	GND	29	TB4-1
12v Analog Power	I2V	30	TB4-3
Correct Stop in Position Relay Output	MOC	31	
Relay Output	M0A	32	
Relay Output	M0B	33	
Zero Stop in Position Digital Output	O2P	34	
Correct Stop in Postn Digital Output	O1P	35	
Servo Ready Digital Output	OOP	36	
From 24v power supply	2	39	TB1-1
From 24v power supply	COM	40	TB1-8
Shield Gnd	E	45	

X Axis SN04-P2 Home Sw			
PNP-NC	24v+	X-BK	TB5-1
Com	0v	X-BL	
24v	24v	X-BR	

Y Axis SN04-P2 Home Sw			
PNP-NC	24v+	Y-BK	TB5-2
Com	0v	X-BL	
24v	24v	X-BR	

Z Axis SN04-P2 Home Sw			
PNP-NC	24v+	Z-BK	TB5-3
Com	0v	X-BL	
24v	24v+	X-BR	

Touch Probe			
24v	TP-1	TB5-4	
24v	TP-2		

Tool Setter			
24v	TS-1	TB5-5	
24v	TS-2		

E-Stop			
24v	ES-1	TB6-1	
24v	ES-2		

24v Relay Power Supply			
L	V+	24v+	
N	V-	0v-	
G	V+	24v+	
	V-	0v-	

RELAY KA0 NC/NO SWITCH			
Field	TB6-17	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA1 Z AXIS BRAKE			
Field	TB6-18	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA2 LAMP			
Field	TB6-19	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA3 UNCLAMP TOOL			
Field	TB6-20	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA4 COOLANT PUMP			
Field	TB6-21	24 Vdc	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA5 ATC FWD			
Field	TB6-22	24 Vdc	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

TB2 Mesa 7176																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
GND	STEP0-	STEP0+	DIR0-	DIR0+	SVP+	GND	STEP1-	STEP1+	DIR1-	DIR1+	SVP+	GND	STEP2-	STEP2+	DIR2-	DIR2+	SVP+	GND	STEP3-	STEP3+	DIR3-	DIR3+	SVP+

TB3 Mesa 7176																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
GND	STEP4-	STEP4+	DIR4-	DIR4+	SVP+	GND	ENCA+	ENCA-	GND	ENCB+	ENCB-	SVP+	IDX+	IDX-	GND	RX+	RX-	TX+	TX-	SVP	5V	5V	GND

TB4 Mesa 7176							
1	2	3	4	5	6	7	8
SPINDLE-	SPIN 0-10V	SPINDLE+	NC	SPIN ENA+	SPIN ENA-	SPIN DIR-	SPIN DIR+

TB1 Mesa 7176							
1	2	3	4	5	6	7	8
V Field	V Field	V Field	V Field	VIN	NC	NC	Ground

TB5 Mesa 7176																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Output	Output	Output	Output	Output	Output	Output	Output

TB6 Mesa 7176																							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Output	Output	Output	Output	Output	Output	Output	Output

Typical Connections for Axis Servo Drive CN3			
Pin	Name	Function	
TB2-21	1	APULS+	Reference pulse input
TB2-20	2	APULSE-	Reference pulse input
TB2-23	3	ASIGN+	Reference signal input
TB2-22	4	ASIGN-	Reference signal input
5	AV-REF	Speed reference input	
6	GND	Signal Ground	
7	OUT1+	Output port 1, which can be reallocated (Factory setting: ALM)	
8	OUT1-	Output port 1, which can be reallocated (Factory setting: ALM)	
9	OUT2+	Output port 2, which can be reallocated (Factory setting:/COIN)	
10	OUT2-	Output port 2, which can be reallocated (Factory setting:/COIN)	
11	OUT3+	Output port 3, which can be reallocated (Factory setting:/TGON)	
12	OUT3-	Output port 3, which can be reallocated (Factory setting:/TGON)	
13	DICOM	Common port of input signal	
14	IN1	Input port 1, which can be reallocated (Factory setting:/S-ON)	
15	IN2	Input port 2, which can be reallocated (Factory setting:/P-COM)	
16	IN3	Input port 3, which can be reallocated (Factory setting: POT)	
17	IN4	Input port 4, which can be reallocated (Factory setting: NOT)	
18	AT-REF	Torque reference input	
19	APAO+	Phase A of PG frequency dividing output	
20	APAO-	Phase A of PG frequency dividing output	
21	APBO+	Phase B of PG frequency dividing output	
22	APBP-	Phase B of PG frequency dividing output	
23	APCO+	Phase C of PG frequency dividing output	
24	APCO-	Phase C of PG frequency dividing output	
25	GND	Signal Ground	

5v Power Supply			
TB3-23	V-	5v	L
TB3-22	V+		N
			G

24v Field Power Supply			
TB1-8	V-	24v	L
TB1-1	V+		N
			G

ATC Motor Overload			
TB6-13	DI12	24V	
		24V	

Coolant Pump Overload			
TB6-11	DI10	24V	
		24V	

Pressure Alarm			
TB6-10	DI09	24V	
		24V	

Tool Clamp Sensor			
TB6-9	DI08	24V	
		24V	

Manual Tool Unclamp Button			
TB6-8	DI07	24V	
		24V	

Tool Release Sensor			
TB6-7	DI06	24V	
		24V	

ATC Home Sensor NPN-NO			
TB6-6	DI04	NO	NPN-NO
		0v	24v+
		24v	Com

ATC Counter Sensor PNP-NO			
TB6-4	DI03	NO	PNP-NO
		0v	Com
		24v	24v+

ATC Extend(In) Sensor NPN-NO			
TB6-3	DI02	NO	PNP-NO
		0v	Com
		24v	24v+

ATC Retract(Out) Sensor NPN-NO			
TB6-2	DI01	NO	PNP-NO
		0v	Com
		24v	24v+

305 24Vac to 220vac Transfr			
0	24Vac	220vac	L1
			L2
			G

RELAY KA6 ATC REV			
Field	TB6-23	24 Vdc	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA7 ATC EXTEND			
Field	TB6-24	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA8 ATC RETRACT			
Field	TB5-17	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA9 RED LAMP			
Field	TB5-18	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA10 YELLOW LAMP			
Field	TB5-19	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA11 GREEN LAMP			
Field	TB5-20	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA12 ATC FWD			
Field	TB6-22	24 Vdc	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA13 ATC REV			
Field	TB6-23	24 Vdc	
13	14	5	8
C-	C+	NO	NC
IN	IN	NC	NC
1	4	9	12

RELAY KA14 ATC EXTEND			
Field	TB6-24	24v+	
13	14	5	8
C-	C+	NO	NC
IN	IN</		