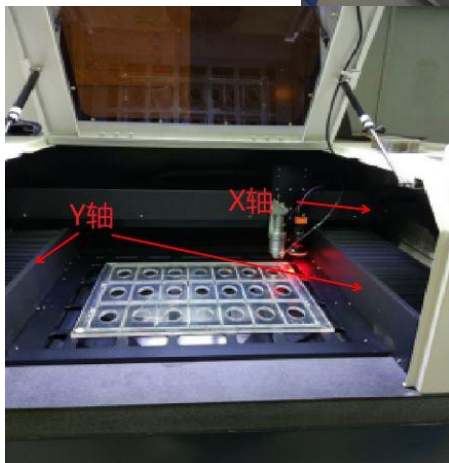
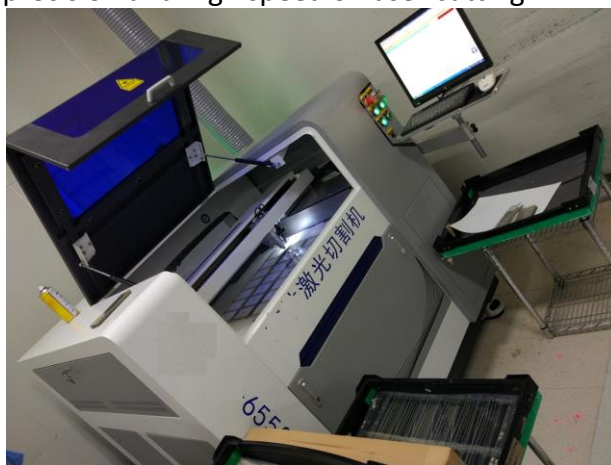


## FA successful application

Case name	Shihlin SDE on laser cutter				
Department	FA engineering group	Date	2018-04-01	page	2
product	SDE series	code	ANI00022	Ver.	V1

### 1. Introduction

Laser cutter replaces traditional mechanical cutters with invisible beams. It has high precision, fast cutting, is not blocked by cutting pattern limitation, saves materials by automatic typesetting, smooth cuts, low processing cost, etc., and will gradually improve or replace traditional metal cutting process equipment. The application of the servo on the laser cutting machine achieves high precision and high speed of laser cutting.



### 2. Requirements

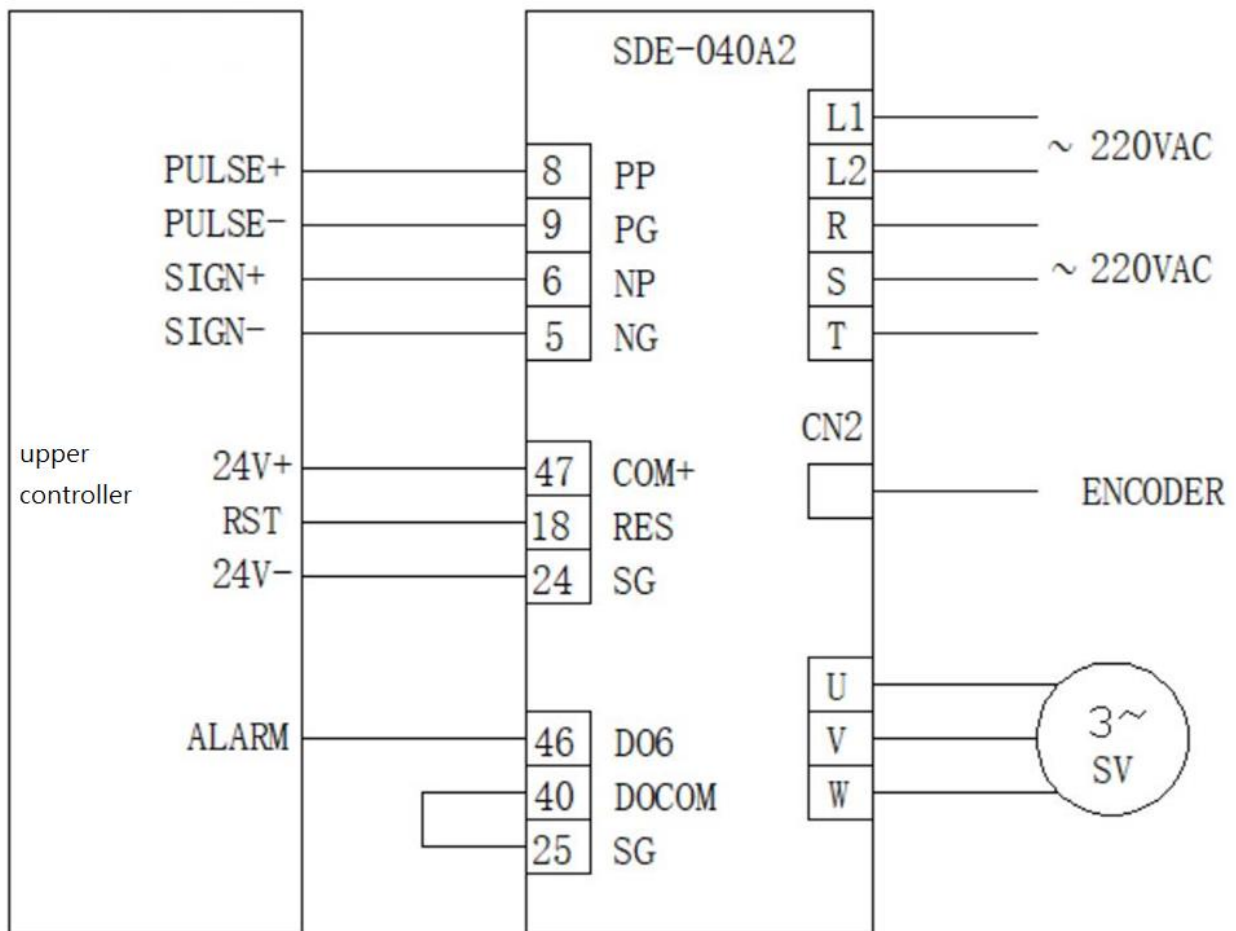
- The high speed and high responsiveness of the servo drive guarantees the production cycle with a maximum speed of 3000 rpm.
- Excellent compatibility of XY axes.
- The motor responds quickly when commutating.
- Accuracy meets customer requirements of 0.02mm.
- The servo should have excellent resonance suppression.

### 3. SDE series servo drive features

- Accurate and fast automatic load inertia estimation.
- Excellent speed response, greatly shortening the setting time up to 1ms, fast response, high response and positioning accuracy.
- High-resolution Encoder, 4,194,304 pulse wave with single-turn resolution, more accurate positioning, and effectively improve low-speed stability. With Japanese encoders.
- SDE high and low frequency resonance suppression.
- Motor miniaturization, motor wire direction can be selected.
- Complete servo tuning software for on-site engineers.
- Speed response bandwidth 1.2kHz, the minimum settling time is only 1ms.

### 4. Wiring diagram

X/Y1/Y2 axis



## 5. Parameter

### X axis

parameter	abbr	set value	default	unit
PA-02	ATUM	00000000	00000002	/
PA-03	ATUL	6	10	/
PA-13	PLSS	00000001	00000000	/
PA-44	EGM	00000001	00000000	/
PB-01	NHF1	947	1000	Hz
PB-02	NHD1	23	0	dB
PB-03	NLP	12	10	0.1ms
PB-04	PST	2	3	ms
PB-07	PG1	73	45	rad/s
PB-08	VG1	354	183	rad/s
PB-09	VIC	24	34	ms
PB-27	ANCF	00000000	00000001	/
PB-44	PPD	120	0	/
PB-49	DST	60	0	/
PC-24	DMD	00000106	00000000	/
PD-01	DIA1	00001111	00000000	/

### Y1 axis

parameter	abbr	set value	default	unit
PA-02	ATUM	00000000	00000002	/
PA-03	ATUL	6	10	/
PA-10	RES1	16	100	Ohm
PA-11	RES2	120	20	Watt
PA-13	PLSS	00000001	00000000	/
PA-18	OVS	6000	6300	rpm
PA-44	EGM	00000001	00000000	/
PB-01	NHF1	2000	1000	Hz
PB-03	NLP	12	10	0.1ms
PB-04	PST	2	3	ms
PB-06	GD1	10	70	0.1 times
PB-07	PG1	83	45	rad/s
PB-08	VG1	602	183	rad/s
PB-27	ANCF	00000000	00000001	/
PB-44	PPD	120	0	/
PB-49	DST	60	0	/
PC-24	DMD	00000106	00000000	/
PD-01	DIA1	00001111	00000000	/

### Y2 axis

parameter	abbr	set value	default	unit
PA-02	ATUM	00000000	00000002	/
PA-03	ATUL	6	10	/
PA-10	RES1	16	100	Ohm
PA-11	RES2	120	20	Watt
PA-13	PLSS	00000001	00000000	/
PA-44	EGM	00000001	00000000	/
PB-03	NLP	12	10	0.1ms
PB-04	PST	2	3	ms
PB-06	GD1	100	70	0.1倍
PB-07	PG1	83	45	rad/s
PB-08	VG1	261	183	rad/s
PB-27	ANCF	00000000	00000001	/
PB-44	PPD	120	0	/
PB-49	DST	60	0	/
PC-24	DMD	00000106	00000000	/
PD-01	DIA1	00001111	00000000	/