

## Laser Perforating Machine for tipping paper

HANS\*GS—D400P cigarette tipping paper laser perforating machine is mainly composed of five parts : laser generator, optical splitting system, control system, form feeding system, water –chilling unit ( optional accessory: zero meter mechanism).

HAN\*SGS



2 years warranty



### 1、 Main components introduction of HANS\*GS—D400P cigarette tipping paper laser perforating machine

#### Laser generator

HANS\*GS—D400P laser perforating machine equips OEM40iX totally metal enclosed CO2 laser generator of German ROFIN-SINAR company, and OEM40iX laser generator adopts the latest power feedback technology and the power output of closed-loop control laser generator, its power output can be adjusted continuously by the feedback signals of sampling power, in order that the power output instability would be controlled within  $\pm 2\%$  and the long-running beam pattern would keep stable, the continuous running time without fault would reach over 10000 hours, besides, the beam quality is very good, and the function is reliable, so the overall lifetime is more than 10 years.

#### Principal Performance Parameters of OEM40iX laser generator

Item	Power	Stability	Peak power	Diameter of beam	Beam quality factor	Divergence angle	Frequency	Power feedback
OEM40iX	20—400W	$< \pm 2\%$	1000W	12.4 $\pm$ 1mm	K $>$ 0.8	2mrad	0—130Hz	With

Regarding OEM40iX laser generator, the operation is very simple, using the menu selection type, you can set and select power output, frequency, beam pattern directly in the control box of laser generator.

Owing to the connection between the laser generator and PLC of control cabinet, PLC can be responsible to start the generator, stop the generator, have interlocking control, and debug according to

the received operation signals. When the generator or exterior circuit meets with the faults, you can stop the generator in time and on the touch screen, it will show the faults reason and positions.

Only when the generator can satisfy the certain condition of interlocking, you can start it, in this way, even if it occurs to the mistake operation, it won't destroy the laser generator or other parts of equipment.

### Zero meter mechanism (optional accessory)

When the winding motor starts working, the paper feeding speed doesn't reach the setting speed, which phase is the accelerating phase of paper, in this phase, the laser generator doesn't start working, no need to punch for paper. If without Zero meter mechanism, the non-porous parts only can be eliminated manually after rewinding, and the customer needs to increase the equipment and operator. The working time of Zero meter mechanism can be set freely by the touch screen. The length of eliminating non perforating parts paper is relative to the working time, generally, the length of eliminating non-porous parts paper is no more than 15 meters.

## 2、Performance and characteristics of HANS\*GS—D400P cigarette tipping paper laser perforating machine

- The host adopts the whole piece stainless steel panel of 16 thickness and high strength welded steel frame, which can ensure that the perforating machine can operate with high speed, low noise, little vibration, stable operation. The general performance is reliable and stable, with no less than 10 years lifetime.
- It adopts Germany winding control technology of SIEMENS company, servo driving system and 10.4" TFT touch screen, and has the parameters setting, parameters and condition display, faults diagnosis and on-line assistance etc functions, with high level of automation of Man-machine dialogue, as well as simple and intuitive operation.
- You can adjust freely the perforating permeability within the range of 100 ~ 2000. After perforating, the instability of permeability is less than 5%, and the surface of winding keeps neat and flat.
- The water chilling system can be controlled freely by temperature, in order to keep constant temperature, and offer the good working temperature for laser generator.
- The optical shutter of optical circuits, gas valve and the instruments are arrayed in the host panel in order to facilitate operation and warning.
- 15、Productivity power : when it produces 500 cu double row holes tipping papers, the perforating speed is no less than 550m/min, and it needs about five minutes to process a plate paper, when it produces 300 cu double row holes tipping papers, the perforating speed can reach 600m/min, and it needs about 4-6 minutes to process a plate paper.

### General performance and parameters of HANS\*GS—D400P perforating machine

<b>Laser power</b>	400W
<b>PLC control type</b>	closed-loop
<b>Controller</b>	Germany SIEMENS servo system
<b>Form feeding control</b>	Biaxial linkage control
<b>Indicator setting method</b>	Independent, simple
<b>Spectrophotometric method</b>	by polygon prism
<b>Permeability range</b>	100—2000cu
<b>Permeability instability</b>	Less than 5% (relative error)
<b>Maximum perforating speed</b>	1920 thousand /min
<b>Maximum perforating density</b>	4pcs/mm
<b>Minimum perforating density</b>	1pc/10mm

<b>Hole diameter range</b>	0.05—0.25mm
<b>Hole shape</b>	oval or round
<b>Hole quality</b>	neat, without deckle edge or coking
<b>Maximum feeding speed</b>	650m/ min
<b>perforating row number</b>	2-8 rows
<b>Acceleration time (0-300m/min)</b>	3sec.
<b>Total system power</b>	35KW
<b>Width range of processing tipping paper tray</b>	40-80mm
<b>Maximum processing winding tray diameter</b>	520mm
<b>After perforate tipping paper tray, the front-end non-porous paper length and tail length of waste paper(feeding speed is 300m/min)</b>	15M ( front ) 、 2M ( tail )
<b>Environment requirments</b>	20—30℃ Constant temperature
<b>Machine lifetime</b>	10 years
<b>Chilling water hardness</b>	250mg/L
<b>Gas consumption of laser head</b>	2.8L/min
<b>Temperature of cooling machine, adjusting range</b>	10-30℃
<b>About the cooling machine temperature and adjusting precision, is there monitor display ?</b>	Yes, the adjusting precision is $\pm 0.1^{\circ}\text{C}$ .
<b>Chilling water flow speed</b>	25L/MIN
<b>Water storage capacity of chiller</b>	0.3M <sup>3</sup>