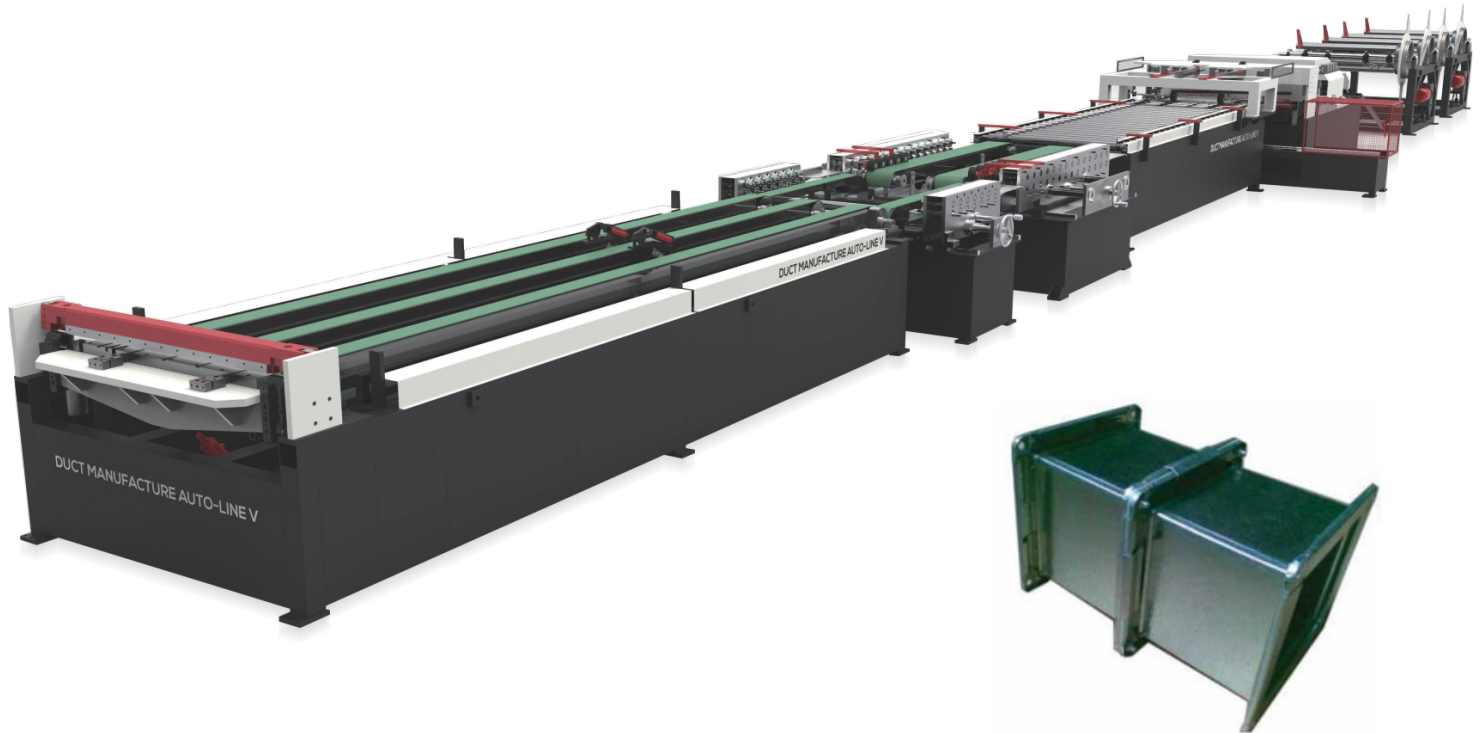




## DUCT MANUFACTURE - AUTO LINE V

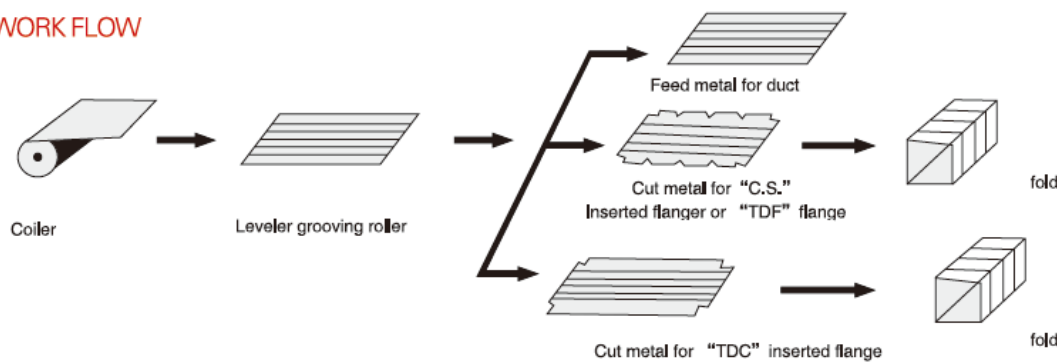
Model: AML-V (Straight Type)



### A. BRIEF INTRODUCTION :

RF-V duct manufacture auto line is the technical personnel of our company sheet metal work according to domestic and international similar production line and the development of a new type automatic air pipe production line. It integrates multiple functions:

#### WORK FLOW



Is currently the complete functions, excellent performance, high degree of automation of a new automatic duct manufacture line, the production line running speeds of up to 9m/min, the production efficiency is greatly improved than other similar devices, from the plate material uncoiling until the last wind ruffled automation to achieve full.



## B. TECHNICAL PARAMETER

- Material : G.I, S.S
- Thickness : G.I (0.5~1.2mm, S.S Max=0.6mm)
- Coil width : 1250mm
- Coil weight : 6000kg(each one decoiler)
- Coil inside diameter :  $\phi 460 \sim \phi 630$ mm
- Coil outside diameter :  $\phi 1300$ mm (MAX)
- Run speed : 9m/min
- Max. length sheet : 4000mm
- Min. length sheet : 800mm
- Shearing : 9999mm
- Shearing tolerance :  $\pm 1$ mm/2000mm
- Bending tolerance :  $\pm 1$ mm/2000mm
- Grooving : Standard "V" type (Fixed type of the DIA : 210mm)
- Control system : computer control
- Voltage : 380V 50Hz 3相
- Total power : around 26KW
- Operation power : 220V 50Hz 3 phase
- Hydraulic pressure : Max. 14MPa
- Air pressure : 0.5MPa
- All Working type : left—right
- Total length : around 30M
- Width : Max. 4.2M

## C. CONFIGURATION LIST

- Motor drive decoiler : (4 coil) 1set
- AUTO LINE II : 1set
- Plate conveyor frame : 1set
- Pittsburg lock system : 1set
- Double drive TDF flange system : 1set
- Servo feeding frame : 1set
- Hydraulic bending system : 1set
- Hydraulic system : 2set
- Electrical control system : 1set

## D. THE PERFORMANCE CHARACTERISTICS OF THE PRODUCTION LINE

This production line can work continuously long-term stability under the following conditions :

1. 380V(220V) $\pm 10\%$ , 50/60Hz $\pm 10\%$  of the three-phase alternating current
2. Environmental temperature : 0~40°C
3. Relative humidity : 55~85%



## E. THE PRODUCTION LINE

### 1. ELECTRIC DECOILER

The decoiler can be loading four rolls of the material, one coil loading 6T. The coil shaft using 45# steel, after quenching and tempering process, with sufficient strength and rigidity. The frame and the chassis are square and channel steel welded. After aging treatment, so as to ensure the stability in the process of using. coil of material support for the adjustable structure, adjusting range of  $\Phi 460$  to  $\Phi 630$ mm. The coiler system is equipped with a 1.5KW motor and the reducer drive, through the control circuit, to realize the automatic control of feeding, return of material and inch feeding of the material, on the sheet surface plays a very good protection effect, To avoid the damage of material feeding machine edge phenomenon. As long as the user's refueling feeding shaft lifting the overall down from the discharge frame, into the coil material to be used in the inner core, artificial tension reel, is placed, material, simple operation, refueling ease. Put rack distributor used for a multi volume production of the occasion, the material conveying easier.

### 2. MAIN MACHINE (AUTOLINE II)

AUTOLINE II is mainly composed of a frame, leveling system, grooving roll, notching system, shearing system.

Leveling system adopts the structure design of leveling technique be current and distinctive form, work roll of five roll leveling, material 45# steel, Quenched and tempered, the electroplating and other reasonable process, good surface properties, its rigidity, deflection, surface roughness and other mechanical properties are greatly improved, which have an important role in the surface of the plate state and flat on flat after.

Notching system portion is located behind the leveling system, can be adjusted according to the sheet width, free, on lower mould replacement is very convenient, need to shear with different angles and shapes, only need to change, on the lower die can be. Powered by the hydraulic system. After the notching process is completed, the sheet to move to set the cut to length, beam clamp and cut the sheet. The hydraulic automatic shearing, the shearing use the blade made of Cr12MoV, cut the mouth without burr and long tool life, rapid change, adjust the shear gap is very convenient.

### 3. FEEDING FRAME

Is composed of a machine frame, a conveying roller, the material clamping mechanical hand and driving part. The conveying roller with power, when the sheet according to the required length is cut off, the sheet position by the mechanical manual clamp to the lock, and then pressing sheet, as the Pittsburgh forming ready.

### 4. LOCK FORMING (FORMING THE PITTSBURGH)

After the plate positioning in the machine frame, Pittsburgh system shifting cylinder action, promote the Pittsburgh system on the sheet, and sheet metal forming in their own power tail Pittsburgh system drive, then the cylinder drives the Pittsburgh system Backtracking.

### 5. DOUBLE DRIVE TDF FLANGE SYSTEM (STANDARD TDF PROFILE)

Double drive consists of two sets of the 14 group roller. Roll by GCr15 steel processing, heat treatment, CNC lathe and roller, surface hardness up to HRC58 ~ 60. Forming width is adjusted by hand wheel; the roller is driven by a motor through the transmission shaft, two sets of synchronous roll. The sheet through the conveying frame, into a roller through the guide plate at the front, forming complete of angle steel flange.



## 6. SERVO FEEDING FRAME

By the machine frame, linear guide rail, the mechanical hand and belt conveying device. Its role is to flange forming machine after forming transport into the folding machine. The manipulator clamping, controlled by a servo motor fixed length feeding.

## 7. HYDRAULIC BENDING SYSTEM

Bending system using under beam fixed, under pressure to complete the upper pressing, pressing and bending by the oil cylinder to complete the action, compact structure, good folding effect. Compression bending are controlled by electrical system.

## E. KEY COMPONENTS AND EQUIPMENT LIST

ITEM	NAME	COUNTRY OF ORIGIN
1	A full digital AC servo system	China
2	Full digital AC servo system	China
3	Human-computer interface	Shenzhen Samkoon
4	PLC	Panasonic
5	Low voltage circuit breaker	Japan
6	AC contactor	Japan
7	Rotary encoder	Japan
8	Air cylinder	Japan
9	Main motor	China
10	Hydraulic directional valve	Taiwan
11	Pneumatic solenoid valve	Japan
12	Linear guide rail	Taiwan HIWIN

