

# Metal Coil Tension Levelling Rotary Shear Line

## 鋼卷張力整平飛剪線



MODEL 機型	
Coil Width 鋼卷寬度 (mm)	600 / 800 / 1250 / 1550 / 1830 / 2000 mm
Coil Thickness 鋼卷厚度 (mm)	0.3 ~ 12 mm
Coil Weight 鋼卷重量 (Tons)	10 / 15 / 20 / 25 / 30 / 35 Tons
<ul style="list-style-type: none"> <li>The specification is available to customer's requirement .</li> <li>可依客戶使用需求，製造特殊規格。</li> </ul>	

### FEATURE 特性

#### NO.2 PRECISION LEVELER 4Hi/6Hi

##### (4) ROLLS FEED ROLL

- Servo motor driven feed roll system, synchronizing with rotary shear to provide stable coil feeding.
- Feed roll surface special treatment, protecting sheet surface under high speed feeding.
- Measuring wheel device constantly cross checking with rotary shear encoder system for precision feeding.

##### DUAL CRANK-SHAFT ROTARY SHEAR

- High rigidity Dual crank-shaft type design, for high precision shearing performance, and long machine life time than conventional rotary shear.
- Constant monitoring both rotary encoder and feed roll encoder provide precision cutting.
- Motorized knife clearance adjustment, setting can be manage in data bank according to coil thickness.
- Hydraulic fixture Shearing knife sets, enable quick knife change and easy maintenance procedure.

##### PRODUCT INSPECTION CONVEYOR

- To carry out the process blanks after cutting, conveyor flat surface enable operator to check blank flatness online.
- Operator side pull out support roller, helps operator to pull out blanks on the surface machined inspection platform.

##### SCRAP CART WITH STACKING FUNCTION

- Scrap cart to collect defective parts
- Equipped with side guide for better scrap stacking.

##### ELECTRO-MAGNETIC/ROLLER/AIR CUSHION STACKING/PILING SYSTEM

- Fully automated stacking/piling system
- Auto motorized adjustments on the stoppers, parameter management on data bank.
- Single station can stack 2 piles of blanks, flexible usage and minimize production down time.

##### NO.1 ROLL TABLE

##### NO.2 ROLL TABLE

- Blank stack exit platform, auto line centering function.
- Full blank auto exit function.
- Equipped with side guide for better scrap stacking.

### 特性

#### NO.2 精密整平機4Hi/6Hi

##### 四輪式送料機

- 伺服驅動送料輪系統，全時和飛剪機角度同步比對，確保穩定送料。
- 送料輪面特殊塗層處理，高速送料時可保護鋼材的表面。
- 送料計長輪與飛剪控制採用動態旋轉比對，確保準確定位裁切，並降低刀座迴旋時之慣性損耗。

##### 雙曲軸飛剪機

- 高剛性雙曲軸驅動結構設計，提供高精度裁切能力，設備使用週期相較於傳統飛剪大幅提升
- 全時比對送料長度和迴旋角度，確保裁切精度
- 電動裁刀間隙量調整，可由數據庫中存取不同板厚所需之刀縫角度，並進行自動調整。
- 上下裁刀刀具模組化，透過油壓固定系統，能進行快速換刀或保養。

##### 成品檢驗輸送帶

- 搬送裁切後的板材，操作者可於線上進行板材質量檢驗。
- 操作側附有板件拉出輔助輪，方便操作者移動板件至加工檢驗平台作平整度檢測。

##### 次料堆垛台車

- 可將次級品進行堆垛
- 台車帶有側邊擋板，可作整齊堆垛。

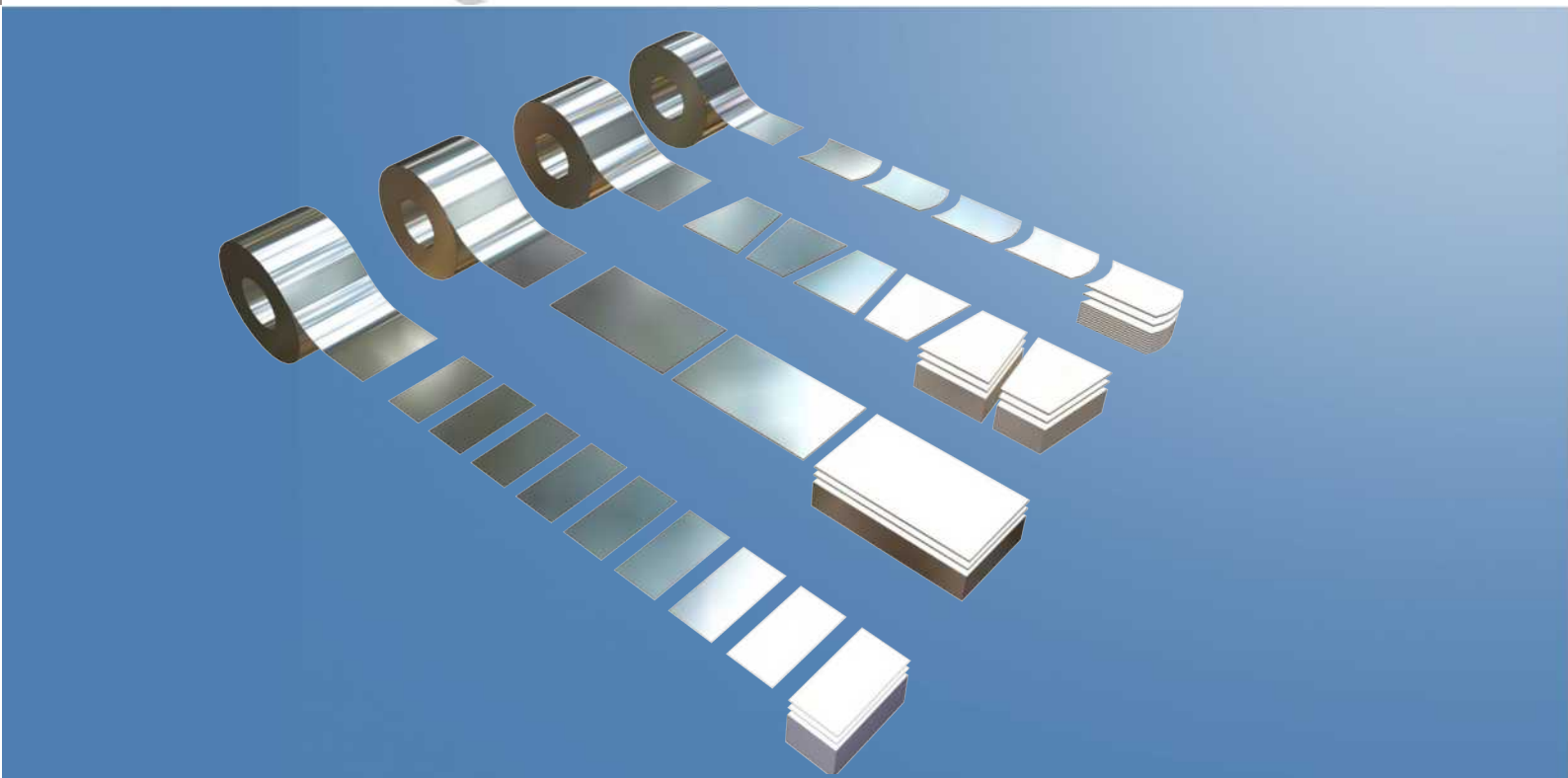
##### 電磁性/承料輪/氣墊式 堆垛系統

- 高度自動化鋼板堆垛系統
- 鋼板拍打系統電動馬達驅動，能依板件參數自動定位，相關透過產線數據庫管理存取。
- 單站可做雙堆堆疊，有效提升產能，降低打包停機時間。

##### NO.1 升降機/滾輪台

##### NO.2 升降機/滾輪台

- 鋼板移出滾輪台，能自動對中產線中心
- 堆垛滿料可自動移出產線，並進行下一堆垛流程。



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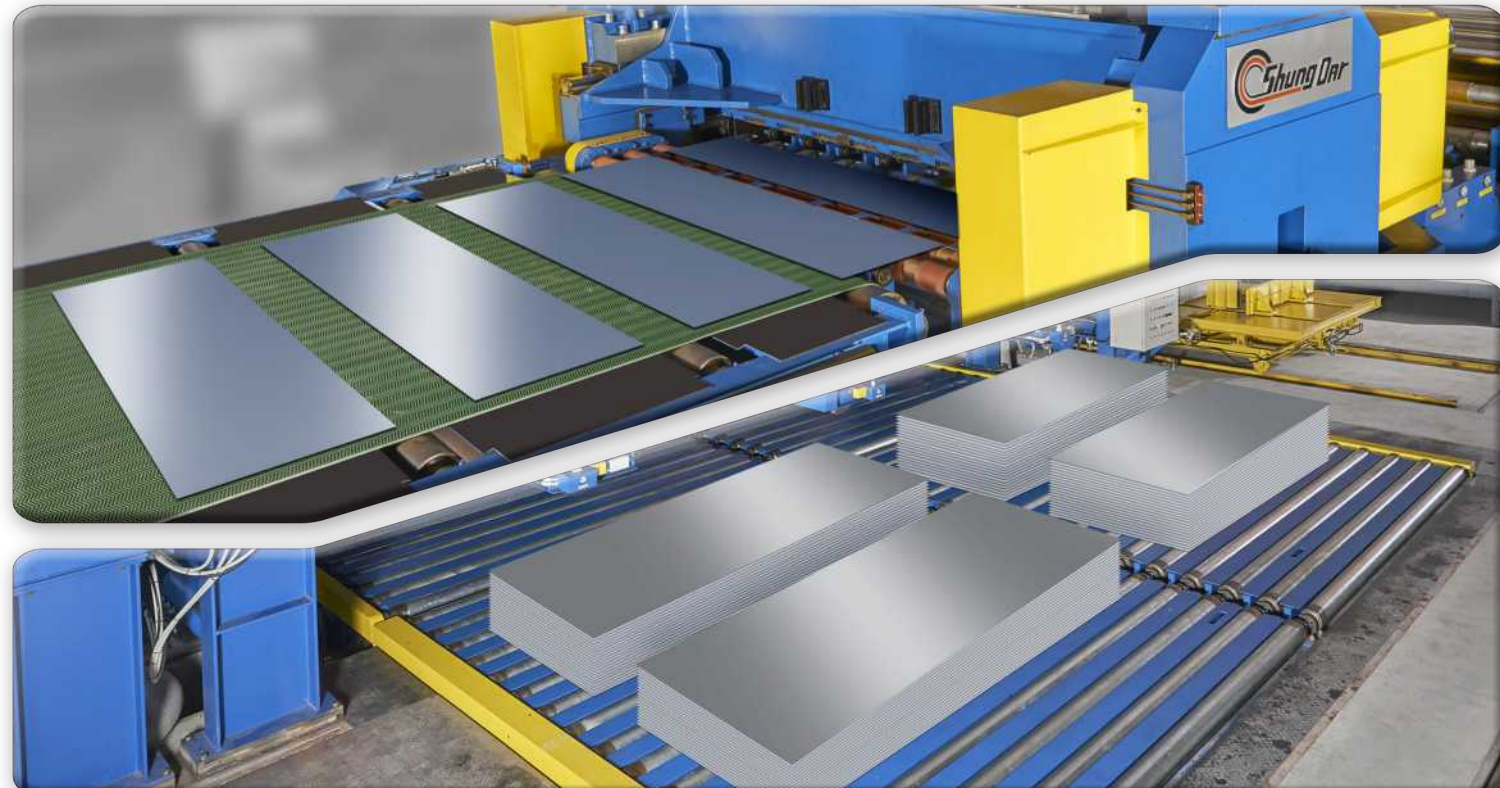
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### FEATURE 特性

#### ENTRY COIL CAR

- Loading coil to Uncoiler mandrel, equipped with self-centering device.
- Speed adjustable Motor driven, ensure coil loading safety.
- Auto coil loading function enabled.

#### UNCOILER

- Coil ID  $\phi 508$  mm,  $\phi 610$  mm &  $\phi 760$  mm, true circle for inner layer protection.
- The mandrel driven by ACV motor for threading/rewinding.
- Constant Tension control uncoiling.

#### THREADING SYSTEM

- Thread and guide the coil head material to next machine process.

#### (4) ROLLS PINCH ROLL

- Maintaining the tension inbetween uncoiler, reducing partial inner tensile.

#### SCRAP SHEAR

- To remove head material or end scrap material
- Counter mode enabled .

#### TENSION LEVELING UNIT

- Special designed roller structure for elongating strip material beyond yield point enable later leveling performance to permanently flatness.

#### NO.1 PRECISION LEVELER 4Hi/6Hi

- Precision correction for the coil strips.
- Motorized backup roll sets can adjust automatically according the data system, and easy control on HMI.
- Motorized exchangeable cassette type work roll sets, can work with different thickness on the same unit.
- Heavy duty housing structure enable rigid support for the roller sets.
- Auto lubrication system for Gearboxuniversal joints, minimized the maintainance and machine down time.

#### 上卷台車

- 移動鋼卷至開卷機，具自動對中側擋。
- 速度可調式馬達驅動，確保上下料安全性。
- 自動鋼卷上料功能。

#### 開卷機

- 鋼卷內徑 $\phi 508$  mm,  $\phi 610$  mm &  $\phi 760$  mm，輪葉面真圓加工，有效保護鋼卷內圈。
- 主軸正轉/逆轉採用向量馬達驅動。
- 恆張力控制放料。
- 自動鋼卷通鼓功能。

#### 入料機構

- 人性化操作引導鋼卷穿料至後端設備。

#### 四輪式壓料輪

- 輔助入料，並維持於開卷機間之鋼卷張力，能有效消除部分鋼卷內應力。

#### 料頭剪床

- 切去不良的料頭或尾料廢料。
- 可使用計數模式自動計算料頭裁切片數。

#### 張力整平機

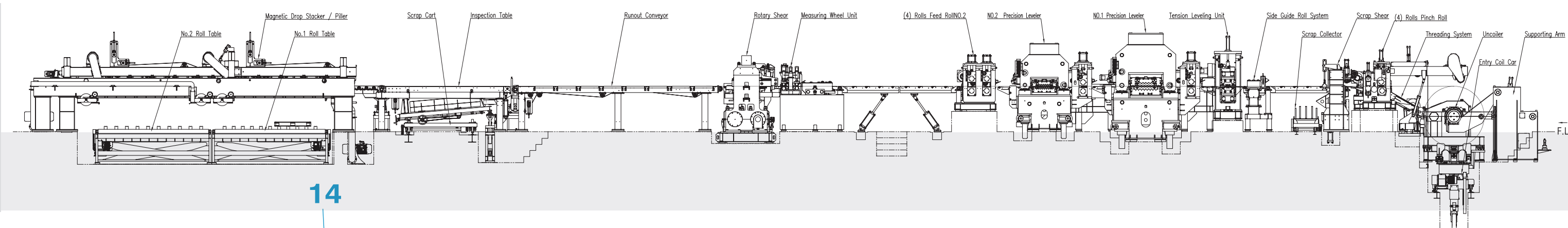
- 應力破壞專用設計之張力整平滾輪機構，藉由特製整平輪機構拉伸鋼料使其延伸超過屈服點，進而達到板型之矯正，並能大幅提升精密整平後之板件平坦度和穩定度。

#### NO.1 精密整平機4Hi/6Hi

- 鋼卷板形精密整平，能針對各種不良翹曲，做矯正對應。
- 電動可調式背壓輪，能藉由觸控人機作整平數據存取管理，有效提升產能效率。
- 電動可交換式整平滾輪組，提高整平單機可對應之厚度範圍，並簡易化滾輪清潔保養程序。
- 高強度屋型整平機頂設計，確保整平輪組作動時，頂座底座支撐所需之結構剛性。
- 齒輪傳動系統採用自動潤滑設計，大幅降低設備維護流程和停機保養時間。
- 搭載羊毛氈滾輪清潔裝置。



www.shungdar.com.tw



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## 鋼卷張力整平飛剪線

**Shung Dar Industrial Co., Ltd.** Latest development high speed rotary shear line, which is commonly used in mass coil service center production, showcasing the technology of high efficiency and high precision of automation production.

The compact line includes the functions of auto coil loading, auto coil threading, and leveling auto adjustment, cutting the rectangular, trapezoid and parallelogram sheet shapes, as well as stacking. The system adopts the uninterrupted cutting method, and omits some devices such as feed rolls which may indent the steel sheet, and arc guide device which may collide and leaves marks on the steel sheet.

Compared with traditional shearing lines, **Shung Dar** rotary shear line utilizes an arithmetic unit, which are supplied with the cutting length and the average feed rate of the sheet stock, to calculate a synchronous speed and a synchronization length, and makes the feeder to feed the sheet stock to a rotary shear for fly cutting by its rotating cutting edges.

By using servo motor, the shears can continuously cut and stack steel sheets at a maximum speed of 90M per minute. This feature will be applied to realize the increase of productivity, reduce of production time and cost.

And with the adoption of dual levelling system, integrated with tension levelling unit, enable the leveling plasticity up to 95%, creating high precision leveling for better usage of the processed blanks.

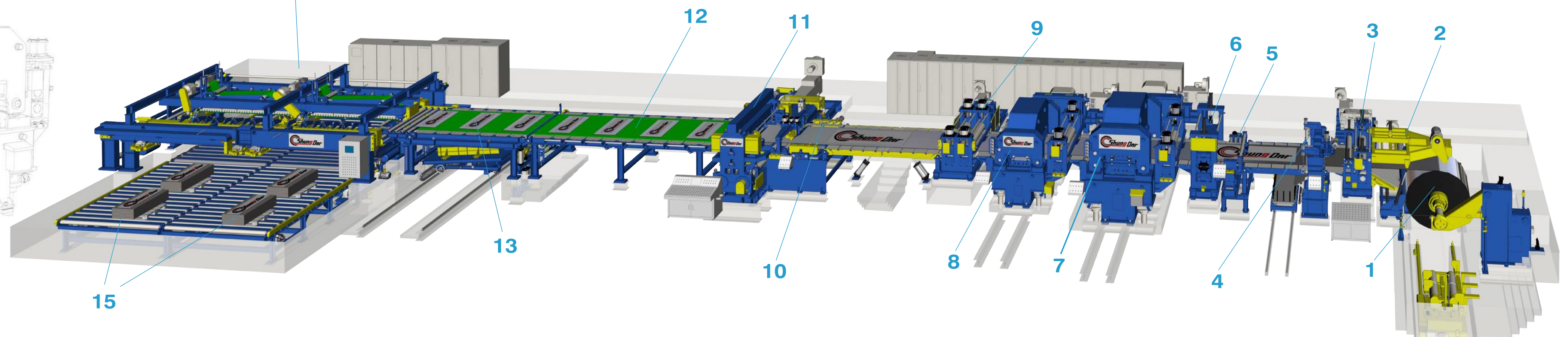
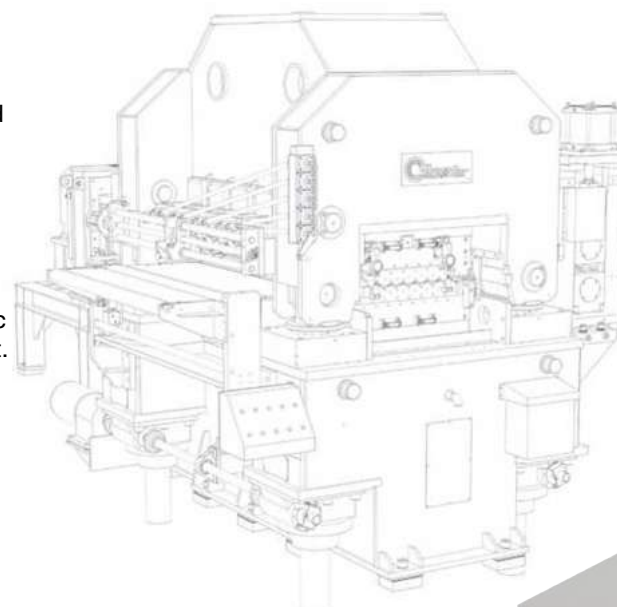
順達實業股份有限公司研發出高速型的剪切線，被廣泛用於大量生產，展現了自動化生產的高效率、高精準度科技。

此精實的生產業線包含了開卷、自動入料及通銜、整平、裁切矩形、梯形、平行四邊形板材，以及堆疊的功能。此系統採用了無間斷的裁切方法，並省略了部分裝置像是可能會造成板材壓痕的送料輪，和可能會碰撞到並造成板材刮傷的弧形導向裝置。

不同於傳統的裁切線，飛剪線利用算術裝置，提供裁切長度和平均送料速率，而計算出同步速度和同步長度，使送料機將板材送到飛剪機，依其旋轉裁切角度進行裁切。

藉由使用伺服馬達，裁切機可以以最大速度每分鐘90米連續裁切和堆疊板材。這個特色將用來實現增加產能、降低生產時間和成本。

採用雙整平機的設計，並配合張力整平裝置，使整平塑性高達95%，創造板材更高的精度及使用率。



**13** 檢查台/廢品台車  
Inspection Table / Scrap Cart



**11** 飛剪機  
Rotary Shear



**10** 計長輪  
Measuring Wheel Unit



**9** 四輪式送料機  
(4) Rolls Feed Roll



**7** NO.1 精密整平機  
NO.1 Precision Leveler



**5** 側邊擋料輪機構  
Side Guide Roll System



**4** 料頭剪床/廢料小車  
Scrap Shear / Scrap Collector



**3** 四輪式壓料輪  
(4) Rolls Pinch Roll



**2** 入料機構  
Threading System

**15** NO.1升降機/滾輪台  
NO.2升降機/滾輪台  
NO.1 Roll Table  
NO.2 Roll Table

**12** 成品輸送帶  
Runout Conveyor

**8** NO.2 精密整平機  
NO.2 Precision Leveler

**6** 張力整平機  
Tension Leveling Unit

**1** 上卷台車/支撐臂/開卷機  
Entry Coil Car / Supporting Arm / Uncoiler