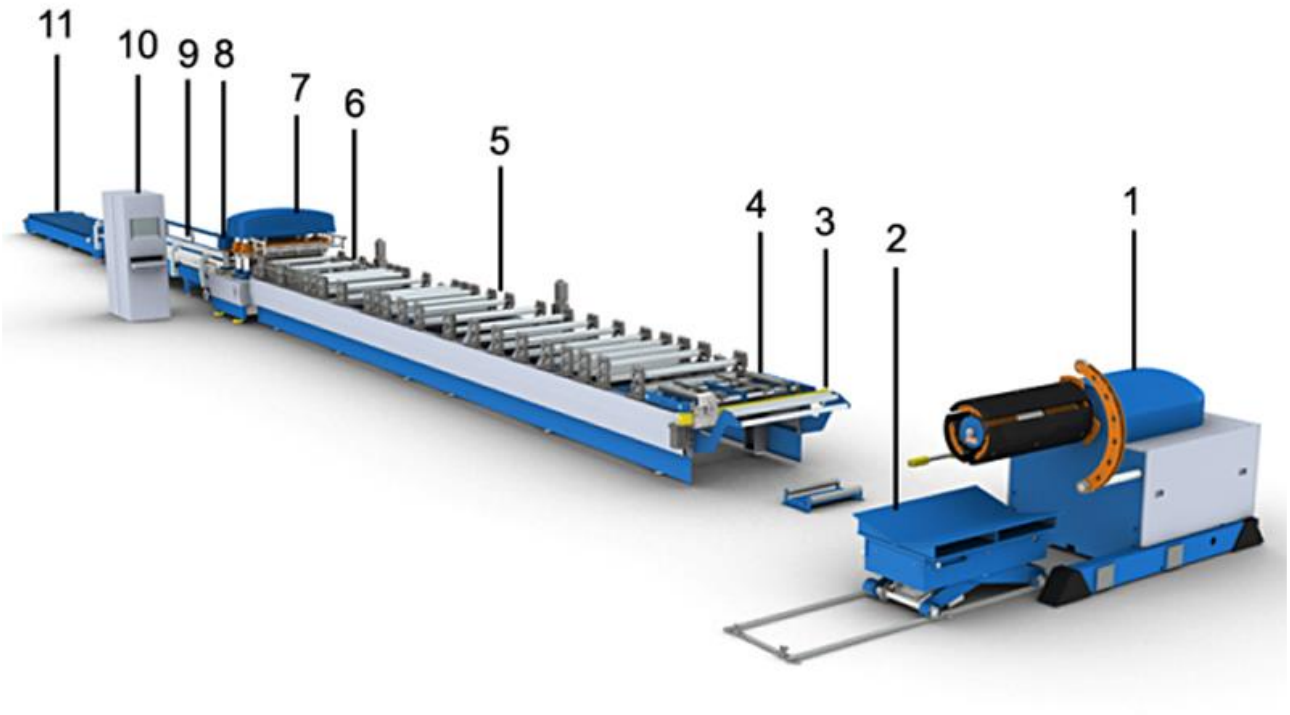
Technical Plan For Single Servo Tile Sheet Line TE 23/1100

SPECIFICATION:

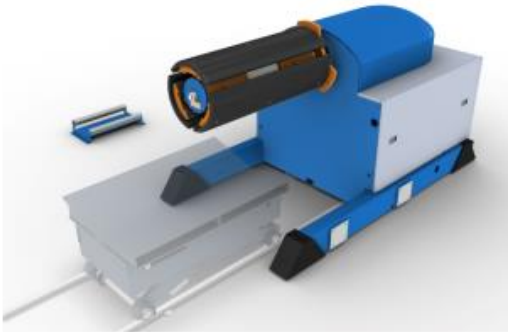


Main parts		Technical information	
1.	Decoiler	Production speed	**About 10m/min**
2.	Coil car	Profile	TE23/1100 (Monterey)
3.	Disc cutter	Raw material	0,40-0,55 mm / 1250 mm
4.	Feeding table	Length	Approx. 27m
5.	Roll forming section		
6.	Hydraulic unit		
7.	Single press		
8.	Post-cutting (static type)		
9.	6m Stacking table		
10.	Electric cabin and AMS operator's console		
11	8m lamella conveyor		

RAW MATERIAL

- the line can profile the following raw materials:
- material thickness without coating 0,40 - 0,55 mm coated steel sheet
- raw material yield strength (Rp0,2) 280-360 N/mm2 (after coating, tested according to EN 10147).
- raw material width according to the profile, max 1250 mm

ELECTRICAL DECOILER



* frequency inverter drive, axle can be rotated in both direction, silent function
* hydraulic expansion / contraction of the axle, hydraulics functions only when needed (in expansion / contraction or when operating coil car (option))
* max decoiling speed 40 m/min
* in the automatic function the size of a loop is controlled by ultra sound sensor
* three wings which facilitates coil handling, wedge mechanism
* supported on one side
* coil dimensions:

inner diameter	480 - 620 mm
width	max 1250 mm
weight	max 10 tons

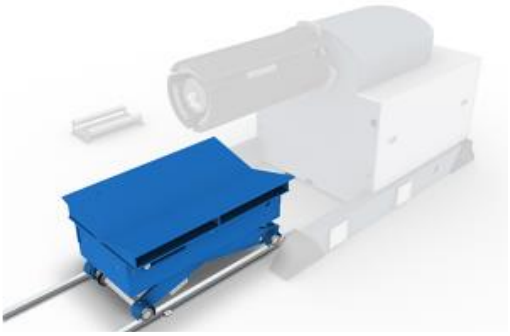
* decoiler dimensions:

length	3,2 m
width	1,3 m
height	1,6 m

* possible decoiler options:
  - hydraulic holding arm
  - sideways shift by rails
  - two-sided operation

COIL CAR

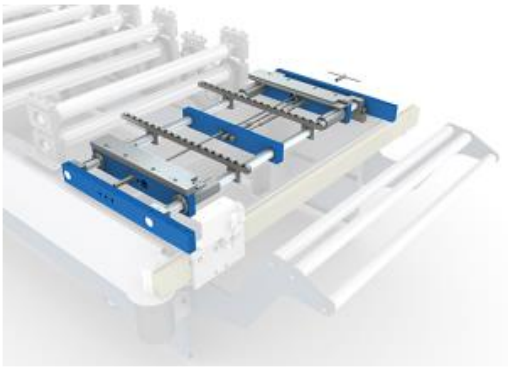
* facilitates coil handling and loading
* lifting by a powerful scissors mechanism
* movement on rails by hydraulic motor
* manual control by the control panel of the decoiler



ROLLFORMING MACHINE:

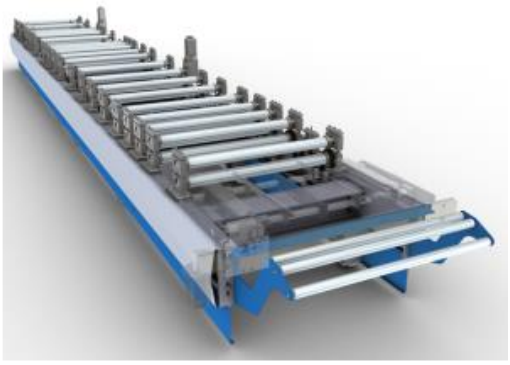
- FEEDING TABLE

* guides sheet metal from the decoiler into the roll forming section through two guides, thus sideways adjustment of the decoiler is not necessary
* quick sideways adjustment and width adjustment of the sheet
* guides move easily on linear guide bars
* rollers in guides for protection of reel edge



- ROLLFORMING SECTION

* profiles a longitudinal corrugated shape
* stable welded frame made of robust steel profile
* profiling stations are mounted on the accurately machined upper surface of frame beams
* consists of 18 stands
* shafts are mounted in bearings with high quality ball bearings installed in bearing blocks with adjustment to top roll shaft
* fixed lower shafts which are driving, upper shafts are adjustable and freely rotating
* own gear motors in both frame blocks
* bearing block of upper shaft moves on linear guide bars with a help of an adjusting screw making it easy to adjust the gap of the shafts



* profiling rolls/shafts are machined with CNC machine tool to reach perfect quality of surface and accuracy of measurement
* shafts and profile rolls are manufactured of steel 45#
* controlled line acceleration and precise, quick positioning for pressing and cutting
* transmission by maintenance free duplex roller chain

- HYDRAULIC PRESS

* makes a transverse step to corrugated sheet metal coming from the roll former either in height of 14 mm or 20 mm (change with additional piece in pressing tool)
* 2-column press construction
* stable welded frame, designed for continuous heavy use
* the press is electrically controlled and hydraulically operated

* durable pressing tool accurately manufactured according to the profile by CNC machine centre
* adjustable hydraulic sheet metal holding beams in pressing tool
* connected with the hydraulic press there is an equipment that spreads coating-protecting liquid to the pressing place
* **<u>profiling speed in TE model varies between 0-10 m/min and reaches about Max. 10 m/min when producing 6000 mm sheets with 20 mm step height and 350mm step length(including pressing, but not including cutting time).</u>**

- DIMENSIONS OF THE ROLLFORMING MACHINE:

* length 13,5 m
* width 2,0 m
* height 1,1 m

- CUTTERS

* roll former is equipped with hydraulic guillotine type form cutter as well as with a disc cutter for automatic rear cut
* blades made of depth hardened tool steel to be long-lasting and sharpened several times

DISC CUTTER

* situated between decoiler and roll forming machine, used for example when changing raw material coil to another
* raw material saving
* the control unit calculates automatically the right position of the last cut. The electric motor moves the cutter on linear guide bars and the rear cut is done automatically.
* blades made of hardened tool steel can be sharpened several times

HYDRAULICS

* hydraulic unit consists of oil tank, axial piston pump as well as oil cooling which operates as its own system
* hydraulic unit is integrated inside the roll forming machine
* hydraulic system is equipped with pressure accumulator balancing the load

CONTROL

* the line is equipped with AMS control unit developed according to the experience of roll forming line operators
* allows automatic control but the line can also be controlled manually, if necessary
* easy line control, the whole order can be programmed in one go. Order programming is possible also during the operation; several orders can be saved in memory.
* unlike general-purpose controllers, AMS controls were designed specifically for the needs of the roll forming industry.
* the XL200 has Speed Compensation - an AMS exclusive. It continually monitors position, speed, and velocity and automatically compensates for any changes.

The result is significantly better accuracy at much higher speeds.

* the machine equipped with AMS control doesn't press or cut sheet metal if it hasn't placed itself exactly in the right place. The unit controls that ready plates are manufactured according to required tolerances.
* easy control of different peripheral equipment by built in PLC

STACKING TABLE

* receives the ready sheets shaped by the roll forming machine and stacks them neatly and gently in bundles on the belt conveyor
* consists of guides which direct the profiled sheet along the rods placed longitudinally
* when the cutter has cut off the sheet, the rods move apart and the sheet falls on the belt conveyor under the rods
* pneumatically controlled pusher pushes the sheet towards the press in order to pack the sheets tightly
* fully automatic operation by control unit
* stacking is done gently with only a short drop, coating of the sheet remains undamaged
* receiving mechanism is mounted on belt conveyor with drum motor ensuring quiet and material saving operation
* dimensions of automatically stacked sheets 1 – 6 m
* dimensions of the stacking table: length 6,0 m
  width 1,5 m

height	1,5 m
capacity of the conveyor	500 kg/m

POWER SUPPLY 380V 50HZ REQUIRED FOR THE LINE

The Seller reserves the right to technical changes owing to normal product development.

The lowest operating temperature for the line is +5ºC.

ALLMAC INDUSTRIES CO., LTD.
Room 801, Building A, New Century Plaza,
288 East Zhongshan Road, Nanjing 210002, China
Tel: 0086-25-66671868
Mobile: +86 13905165687
Fax: 0086-25-84703382
Website: www.allmacrollforming.com
E-mail: wanggun@allmacindustries.com