

**SOLARIS INFRASUPPORT CORPORATION**



**PEB BEAM WELDING  
MACHINE CATALOGUE**



**WELDING  
&  
CUTTING**



**INNOVATIVE  
SOLUTIONS**

## PEB BEAM WELDING LINE

**SOLARIS PEB Beam** welding systems are used to automatically weld the Flange plates to a web plate to form a Pre-fabricated Beam. The beam line equipment comprising of conveyors, Web Splice welders. Tack welder, Pull through welder (Auto Welder), Twin wire SAW welding machine (Power source, wire feed head and controller), Pre settable welding heads and flux recovery units.

**SOLARIS** offers total solution for Automatic and Manual welding of beams. Invert beam line for PEB includes CNC Plasma/Flame head cutting machine, Web/Flange Splice welder, Flange to Web Tack welder, Pull through Welder (Auto welder), Twin Wire SAW welding machines, Conveyors, etc. Invert provide comprehensive material handling system to support beam welding line.

**SOLARIS** offers PEB Beam Welding line to customers based on production capacities which helps customer to start producing beams with lesser investment and can be enhanced at later stage based on the volume increase. This will be more helpful for the start up companies. We offer equipments from the range of 250 tons to 1000 tons per month productivity.

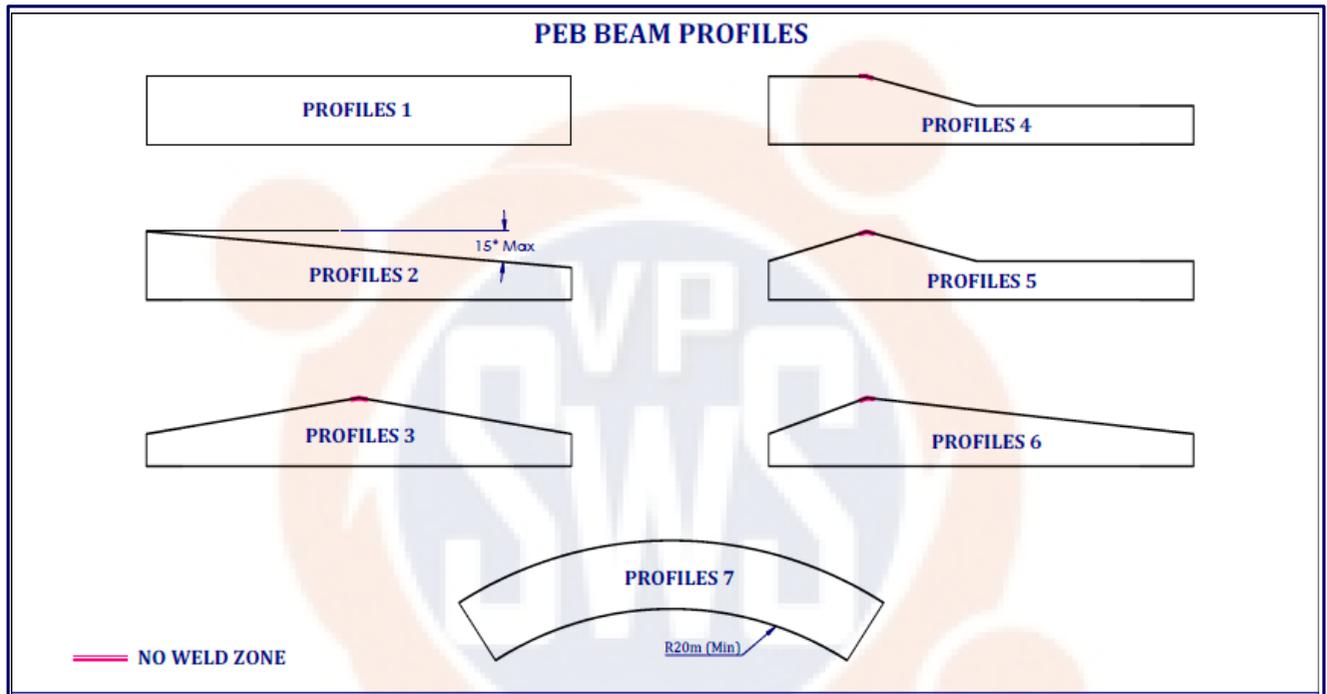
Our Beam Welding Line (PEB) comprising of following equipments,

- ❖ CNC Plasma / Flame Cutting Machine
- ❖ Web/Flange Splice Welding Machine
- ❖ Beam Tack Welder
- ❖ PTW-Pull Through Welder(Auto Welder)
- ❖ Conveyors
- ❖ Twin Wire SAW Welding Machine
- ❖ Beam Handling Equipment's- Optional

## STANDARD PEB BEAM LINE SPECIFICATION

Model →	PEBWL-1000	PEBWL-1200	PEBWL-1500	PEBWL-1850	PEBWL-2100
Web Thickness	4 to 10mm	4 to 12mm	4 to 12mm	4 to 16mm	4 to 16mm
Web Min. Width	200mm	200mm	200mm	200mm	200mm
Beam Overall Width	1000mm	1200mm	1500mm	1850mm	2100mm
Web Taper	15° Max.				
Flange Thickness	5 to 12mm	5 to 16mm	5 to 20mm	5 to 25mm	5 to 25mm
Flange Width	150 to 400mm	150 to 400mm	150 to 500mm	150 to 500mm	150 to 500mm
Beam Length	2400mm Min.				
Weld Fillet Size	4 to 8mm				
Conveyor speed	10 M/Min				

## PEB BEAM PROFILE



# CNC FLAME & PLASMA CUTTING MACHINE

## TECHNICAL SPECIFICATION:

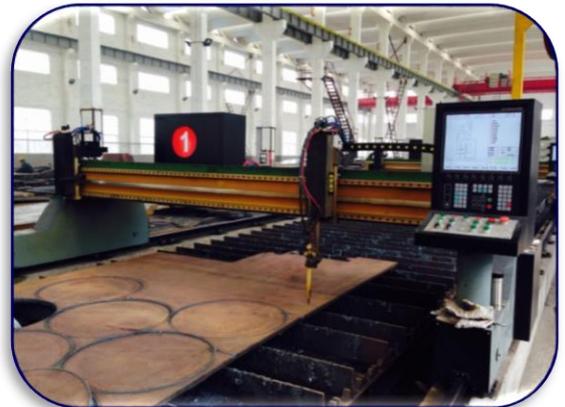
DESCRIPTIONS	SPECIFICATION
*Effective Cutting width	2.5 to 5 M
*Effective Cutting length	3M onwards
*No of Heads	1 Plasma, 1 Flame Head
Plasma Cutting	Depends on selection of plasma source based on plate thickness
*Plasma Cutting Speed Range	0 to 6 m/min
*Flame Cutting	6 -100 mm
Flame Cutting Speed	0 to 0.9 m/min
*Strip Cutting torch	2 - 10 Nos.
*Vertical slide for torch Up/Down	2 - 10 Nos.
*Strip Cutting Thickness	10 - 50 mm
Transverse torch	1 CNC Flame
Driving Mode	Dual Drive
CNC Controller	Start Micro Step, Hypertherm, Victor or Equivalent
Transmission	Rack & Pinion
AVC for Plasma	1 No
<i>Optional:</i> THC for Flame – Capacitance Type	1 No
Transverse & Longitudinal Drive: AC Servo System	Panasonic / Yaskawa or Equivalent
Speed Control	Stepless Speed control
Power Supply	AC 220 V / 50 Hz
Cable and hose management	Cable Drag Chain
Nesting Software	Hypertherm, Fast CAM or Equivalent

**Note:** \*Plasma Cutting Thickness depends on selection of Plasma Source.  
\*Recommended cutting thickness for Strip cutting is above 10mm

### **\*OPTIONAL:**

- 2.5Mx4M - Light Duty / Above 3.1M X6M - Heavy Duty Machines
- Single Head CNC Flame (or) Plasma
- Double Head Flame & Plasma
- Strip Flame cutting Heads
- Extended Rail length is feasible as per customer cutting envelope

**\*\*SOLARIS offers customized machine range to suit customer's requirement.**



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## WEB SPLICE WELDER- WEB PLATE TO PLATE BUTT WELDING STATION



### *SUB MODULES OF SPLICE WELDER:*

<i>Sl.No</i>	<i>DESCRIPTION</i>
<i>1</i>	<i>A Hydraulically operated edge aligner is provided to ensure repeatability of weld position.</i>
<i>2</i>	<i>The Splice welder is provided with a set of multiple copper clamping fingers, which are operated pneumatically to clamp the plates.</i>
<i>3</i>	<i>A hydraulically operated web lifter is provided to ease the exit of the web after welding</i>
<i>4</i>	<i>Powered Pushers to align Web against reference Side rollers which will be mounted on the Reference side of the conveyor.</i>
<i>5</i>	<i>Motorized Welding Traverse carriage with variable speed control</i>
<i>6</i>	<i>Welding Head positioning slide unit in radial, Cross and Vertical directions</i>
<i>7</i>	<i>Hopper Mounted Flux recycling unit.</i>
<i>8</i>	<i>Control Panel &amp; Operator Pendant unit.</i>
<i>9</i>	<i>Single Wire SAW Welding Machine.</i>



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## TACK WELDER- BEAM ASSEMBLY & TACK WELDING



### *SUB MODULES OF TACK WELDER:*

<i>Sl.No</i>	<i>DESCRIPTION</i>
<i>1</i>	<i>Hydraulically operated web lifters for lifting the web to the centre line of the flange.</i>
<i>2</i>	<i>Hydraulically operated Edge aligners to align the face of the web and flanges.</i>
<i>3</i>	<i>Hydraulically operated web/flange clamping assembly.</i>
<i>4</i>	<i>The web and the flanges are aligned and clamped with the help of the above and tack welding is done in the leading edge. After tack welding, the beam is conveyed to the Pull through welder (Auto Welder).</i>
<i>5</i>	<i>Control Panel &amp; Operator Pendant unit.</i>
<i>6</i>	<i>GMAW/SMAW welding machine for manual tack welding</i>



## PULL THROUGH WELDER - BEAM FULL WELDING



### *SUB MODULES OF PULL THROUGH WELDER (AUTO WELDER)*

<i>Sl.No</i>	<i>DESCRIPTION</i>
1	<i>Vertical Flange Guide Roller Assembly with Web lifter at the entry.</i>
2	<i>Fixed bottom roller and movable top roller for flange guiding at the entry.</i>
3	<i>Pull through welder with fixed and moving drive wheels with electric drive</i>
4	<i>Powered Web lifter</i>
5	<i>Hydraulically operated web clamp unit.</i>
6	<i>Hydraulically operated web/flange clamp assembly with adjustable clamping pressure.</i>
7	<i>Hydraulically operated web and flange guide unit for the welding torch</i>
8	<i>Welding Torches</i>
9	<i>Flux recovery units</i>
10	<i>Fixed bottom roller and movable top roller for flange guiding at the exit.</i>
11	<i>Hydraulic power pack,</i>
12	<i>Current collector in both fixed and moving sides attached to the pull through rollers.</i>
13	<i>PLC controlled panel.</i>
14	<i>Fully integrated user friendly Operator Pendant (welding parameters to be controlled by welding machine Controller)</i>
15	<i>SAW Welding Power Source + Wire feeder for Twin wire.</i>
16	<i>Top platform for placement of, flux recovery units, control panel, wire spools (4 nos for 2 twin wire) etc. Power source will be placed in the bottom.</i>

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<b>FEATURES</b>	
1	<i>The Pull thro welding station operates automatically on a Single push button operation.</i>
2	<i>The speeds of the Infeed conveyor, out feed conveyor and the pull thro rolls are synchronized automatically.</i>
3	<i>The conveyors, Pull thro rollers, welding equipment and the flux recovery units are all operated automatically in the programmed sequence.</i>
4	<i>A digital programmer unit is provided wherein all the essential process variables are stored. Based on the selected program the weld parameters and the speed parameters will be chosen as per the stored values.</i>
5	<i>The equipment is designed to weld beams with one side taper upto a maximum taper angle of 15 deg.</i>
6	<i>The equipment is provided with an independent hydraulic power unit to clamp the web and flange assembly rigidly while welding.</i>
7	<i>The equipment is provided with sweep correction rollers. The position of the rollers is adjustable to accommodate different flange heights.</i>
8	<i>Copper shoes assist in current collection from the flanges thereby avoiding damage to the machine elements.</i>
9	<i>The welded beam is moved into the out feed conveyor automatically.</i>



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## CONVEYORS:

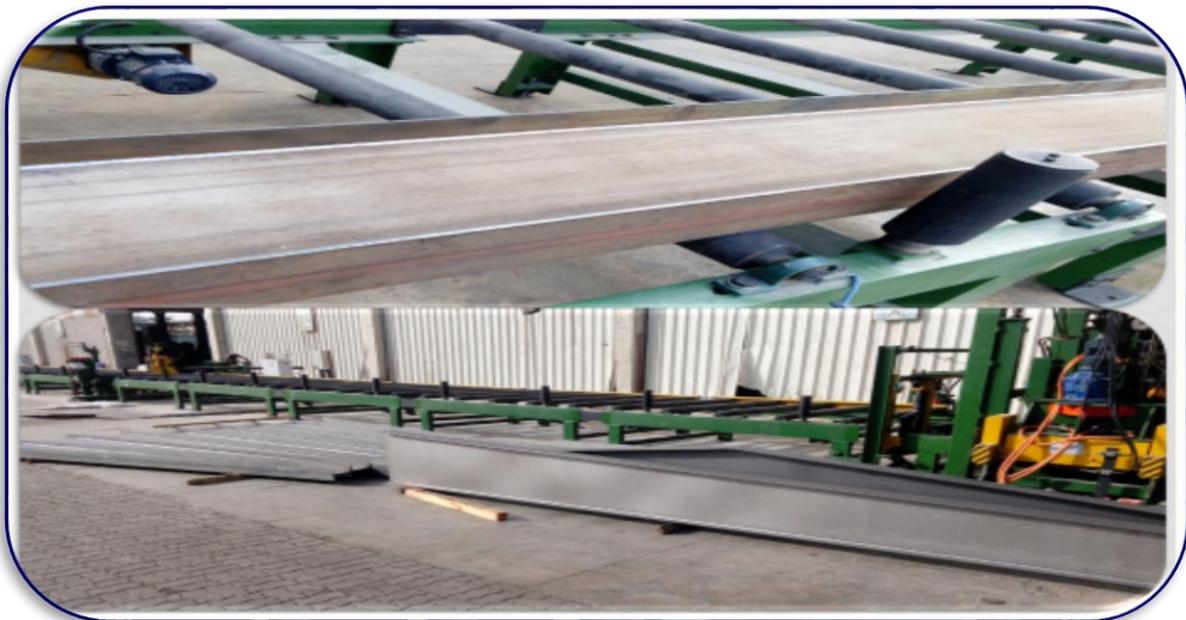


### *SUB MODULES OF CONVEYORS*

<i>Sl.No</i>	<i>DESCRIPTION</i>
<i>1</i>	<i>In feed Conveyor with Web Pushers to Splice welder (1Module-3M)</i>
<i>2</i>	<i>Out feed Conveyor with Web Pushers at Splice welder (1Module-3M)</i>
<i>3</i>	<i>In feed Conveyor to Tack welder (1Module-3M)</i>
<i>4</i>	<i>In feed Conveyor with Beam guide rolls to PTW (1Module-3M)</i>
<i>5</i>	<i>Out feed Conveyor with Beam guide rolls at PTW (1Module-3M)</i>
<b>FEATURES</b>	
<i>1</i>	<i>All conveyors are placed as drive &amp; driven modules in the layout. Conveyors are motorized with chain drives.</i>
<i>2</i>	<i>Closer roller spacing ensures smooth job movement.</i>
<i>3</i>	<i>Speed control facility for the In feed conveyor &amp; Out feed conveyor of Main machine controls.</i>
<i>4</i>	<i>Automatic electronic speed synchronization of conveyors with Pull thro rolls.</i>



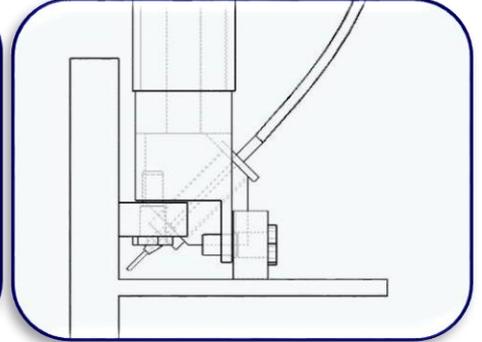
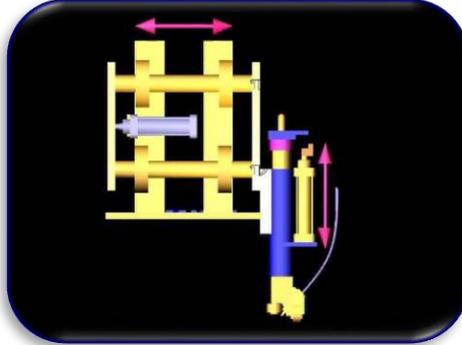
PEB WELDED BEAMS



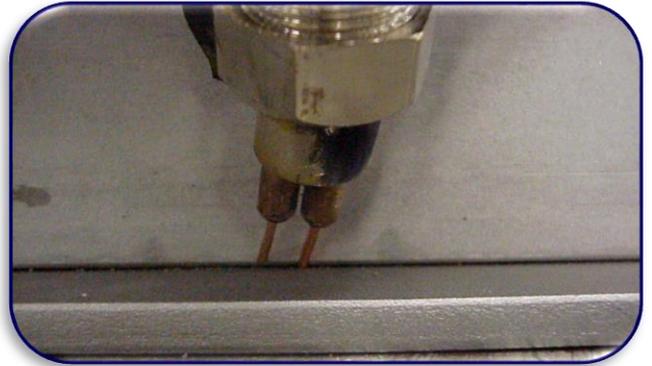
## FEATURES OF PEB BEAM WELDING LINE

### TORCH GUIDANCE SYSTEM

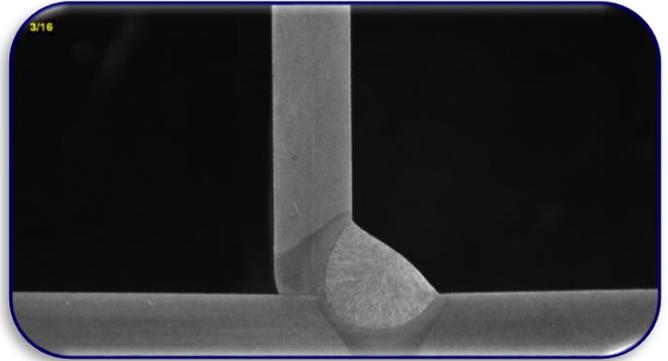
THE WELDING TORCH AND ITS HYDRAULIC GUIDANCE SYSTEM TO POSITION THE TORCH WITH THE HELP OF POSITIVELY LOADED WEB AND FLANGE GUIDE ROLLERS



### TWIN WIRE ADVANTAGE



### DESIRED PENETRATION



### CUTTING EDGE TECHNOLOGY:



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## WELDING MACHINES

Sl.No	Welding Machine	Type	Description
1	Splice welder	Single wire SAW	600/1000 Amps single wire saw welding package for wire size 3.2mm- 1 Set
2	Tack welder	Mig/Smarw	350/400 amps Mig/Mag or smaw manual tack welding machine- 1 Set
3	PTW (Auto) Welder	Twin Wire SAW	1000amps twin wire saw welding package for wire 1.6mm*2 – 2 set

## CHOICE OF WELDING MACHINES



### ESAB MAKE

1. SINGLE WIRE SAW – LAF 630 WITH A2 HEAD & PEK CONTROLLER PACKAGE
2. TWIN WIRE SAW – LAF 1001 WITH A6 HEAD & PEK CONTROLLER PACKAGE



### LINCOLN MAKE

1. SINGLE WIRE SAW – DC 600 WITH NA3/NA5 HEAD & CONTROLLER PACKAGE
2. TWIN WIRE SAW – DC1000 WITH NAS/NA5 HEAD & CONTROLLER PACKAGE

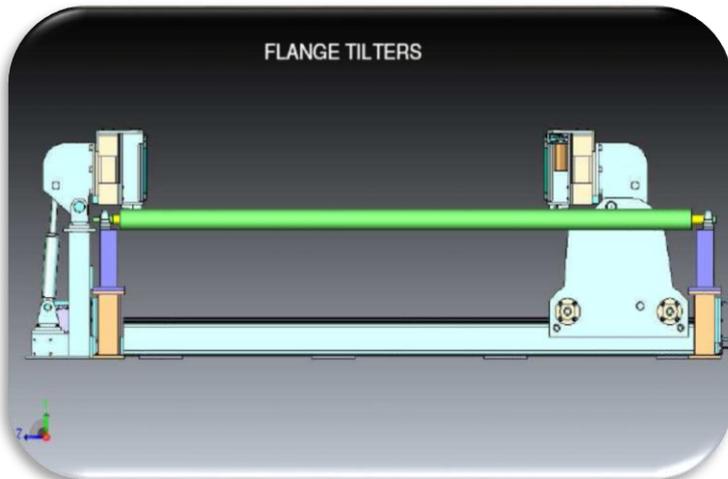


### KAIYUAN MAKE

1. SINGLE WIRE SAW – ZD5-1200EJ WITH HEAD & MZ9-1200B11 CONTROLLER PACKAGE
2. TWIN WIRE SAW – ZD5-1200EJ WITH CRU6800 HEAD & KMU4440 CONTROLLER PACKAGE

## OPTIONAL ATTACHMENTS:

### 1. FLANGE TILTERS



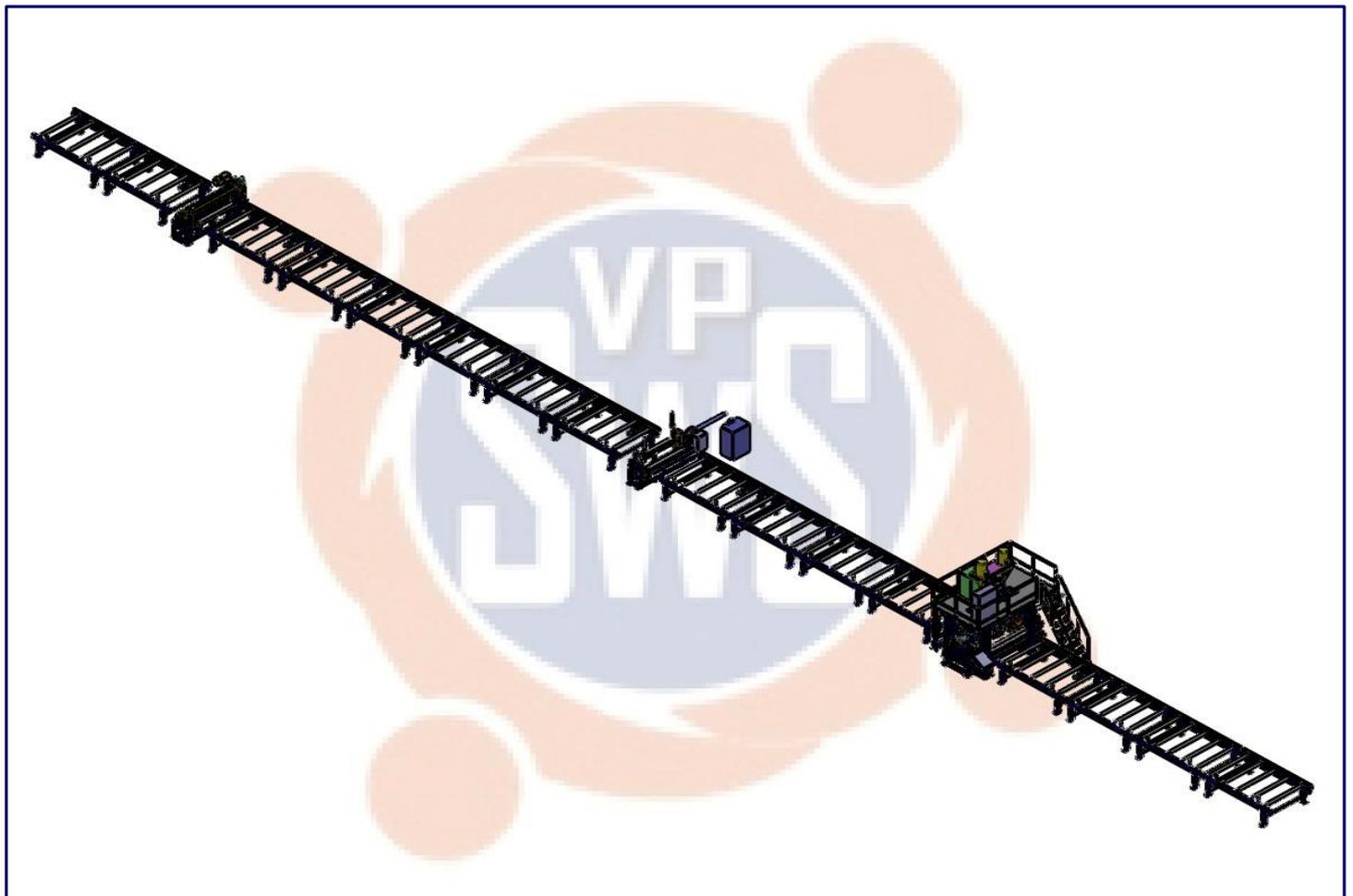
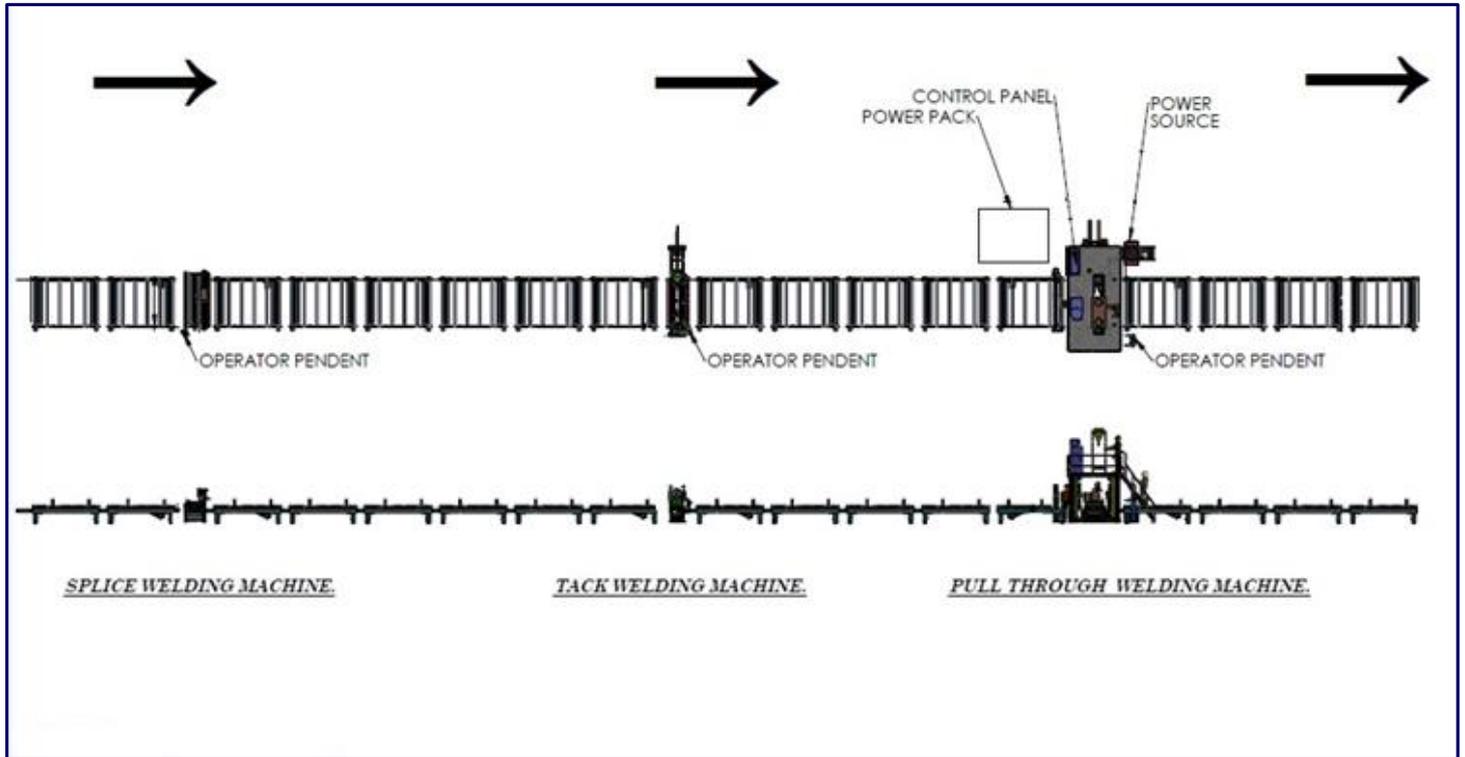
<i>SUB MODULES OF CONVEYORS</i>	
<i>Sl.No</i>	<i>Description</i>
<i>Flange Tilter unit is assembled to the infeed conveyor of tack welder which is used to hold &amp; flip the flange to vertical position.</i>	
1	<i>Hydraulic operated flange tilting unit to flip the flanges to vertical position</i>
2	<i>Hydraulic operated across movement of moving side flange tilting unit.</i>
3	<i>Rollers to hold the flanges</i>

### 2. Beam Flipper :



*Beam Flippers unit is assembled to the outfeed conveyor of Pull through welder which is used to flip the welded beam to other side for second side welding.*

PEB BEAM WELDING LINE- GA & LAYOUT DRAWING



# SOLARIS INFRASUPPORT CORPORATION

## WE ARE ASSOCIATED WITH



**Hypertherm**<sup>®</sup>

**LINCOLN**<sup>®</sup>  
**ELECTRIC**



**ABB**



**Fronius**  
SHIFTING THE LIMITS

**LORCH**  
smart welding

