

## Narrow Gap SAW

### Single Wire Automated Narrow Gap SAW System

Narrow Gap is an advanced welding technology used in Submerged Arc Welding (SAW) for thick plate welding applications, which require most stringent welding quality standards with high productivity. The complete system consists of Narrow Gap SAW Weld Head Assembly along with Motorized Slide and Tracking Unit, Air Drying and Flux Transport and Recovery Unit, Wire Reel, Wire Reel Support, SAW Power Source, Connection Cable Sets and the necessary custom-built fixture for the welding fit up.

Narrow Gap as the name suggests is used on very low root gap e.g.  $\leq 22\text{mm}$  in SAW and offers several advantages compared to conventional welding, some of them are reduced groove preparation cost, lesser number of passes, lower heat input, lesser distortion, reduced consumables cost and faster welding speed, which deliver significant quality and productivity improvements over the conventional welding process (different components of the above system are mentioned below, NAG – Narrow Gap).

1	<b>NAG SAW System Set Up</b>
2	<b>NAG SAW Head</b>
3	<b>Control Panel</b>
4	<b>NAG SAW Torch Position (job - inside groove)</b>
5	<b>NAG SAW Torch (before welding start)</b>
6	<b>NAG SAW Torch (during welding)</b>

## Single Wire Narrow Gap SAW System

The KAIYUAN Narrow Gap SAW System comes with specially designed KAIYUAN Narrow Gap Weld Head and a wide range of features listed below, which not only drives quality and productivity enhancement but also positions KAIYUAN as distinguished global player ahead of its counterparts.

### Salient Features

- Automatic height / stick-out tracking – this ensures consistency in the pre-set weld parameters e.g. the variation in the height due to uneven groove surface is taken care of automatically by the machine, which enhances the weld quality

- Automatic side wall tracking – this feature enables the system to track the side wall and ensures perfect side wall fusion by automatically compensating the torch movement with respect to the variation of side wall inside the groove, a critical factor for achieving desired weld quality

- Torch oscillation – the torch has an oscillating range of  $\pm 3.5$  Deg, a feature that enhances the side wall fusion, a must for high quality weld

- User-friendly control panel – the control panel is easy-to-operate and comes with digital meters for accurate parameter setting and observation

- Special options – the Narrow Gap SAW can also be equipped with Twin Wire / Tandem SAW systems depending on usage to deliver higher productivity

### Application Segments

- Nuclear Energy e. g. Reactor Components
- Oil and Gas
- Shipbuilding
- Power Plant Equipment e. g. Turbines, Boilers

Technical Details	Value
<b>Job / Welding Details</b>	
Groove thickness	350 mm, 1G (max)
Groove angle	1 ~ 2 Deg
Groove width	24 ~ 30 mm (top) 18 ~ 22 mm (bottom)
Deposition rate	5 ~ 8 Kgs/hr
Wire diameter	4.0 mm (standard) 3.2 mm (option)
Wire feed speed	40 ~ 80 m/hr
Pass per layer	One
Torch oscillating range (contact tip)	$\leq \pm 3.5$ Deg
Slide stroke	300 (Flat) x 400 mm (Vertical)
Flux hopper capacity	10L
Flux tank capacity	70L
Wire reel capacity	25 Kgs
SAW Power Source capacity / rating	1200A (full load) 1000A / 100% (continuous)



**NAG SAW (Turbine Rotor)**



**NAG SAW (Boiler Seam Tank)**

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