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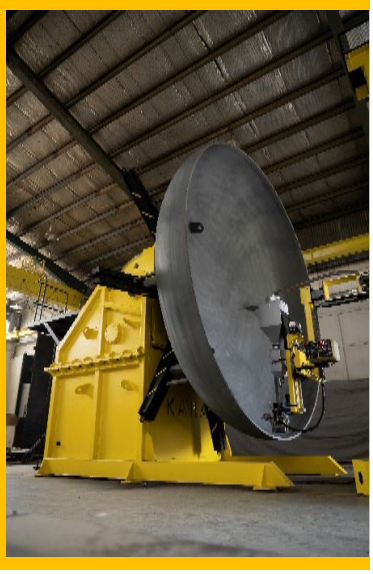
WELDING & CUTTING EQUIPMENT
KARA
KARA GROUP

CATALOGUE

Dish Cladding Machine




KARA

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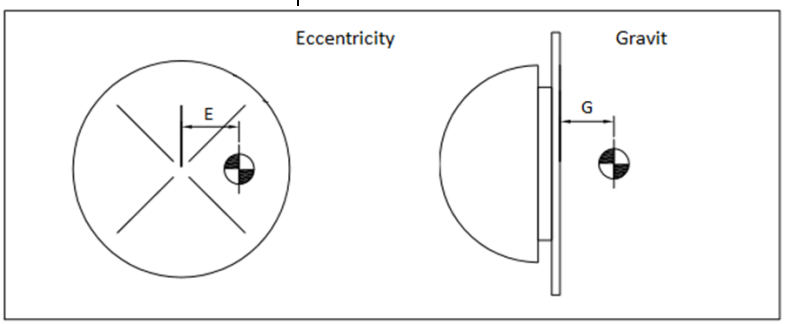
Main Technical Specifications (Positioner)

1	Type	Mechanical
2	Tilt Angle	0-90°
3	Tilt Motor	5.5 Kw AC 3Ph
4	Tilt Motor Brand	Electrogen
5	Rotation Motor	1 kW Servo Motor
6	Rotation Motor Brand	Estun
7	Rotation Speed (RPM)	0 - 0.12
8	Table Diameter (m)	5
9	Workpiece Clamp Type	T-Slot M24
10	Center Of Gravity (m)	1.5 (For 10 Ton)
11	Eccentricity (mm)	55 (For 10 Ton)
12	Tilt Angle Display	Mechanical + Atmek Slope Sensor
13	Protection classification	IP 52
14	Control System	PLC
14	Power Supply	380V – 50Hz – 3PH – 16A
15	Safety System	Pneumatic Lock
16	Installation	Anchor bolt
17	Overall Dimension (mm) (A,B,C)	5710,5080,5500
18	Overall Weight (kg)	11380



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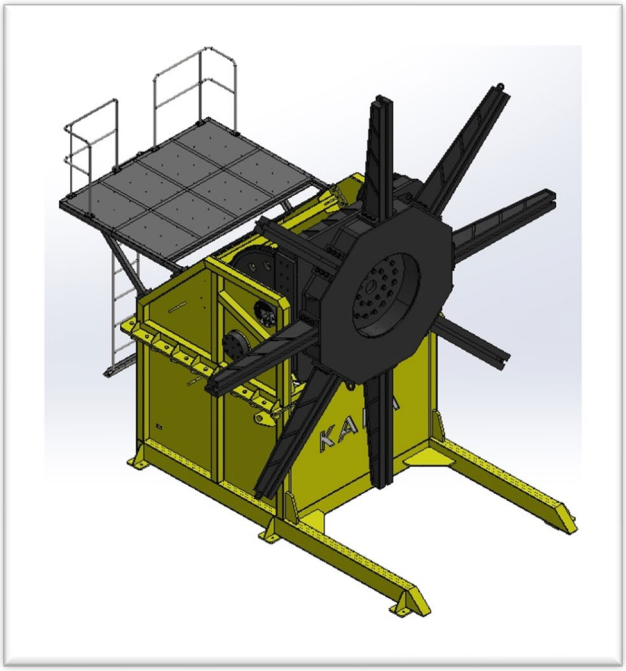

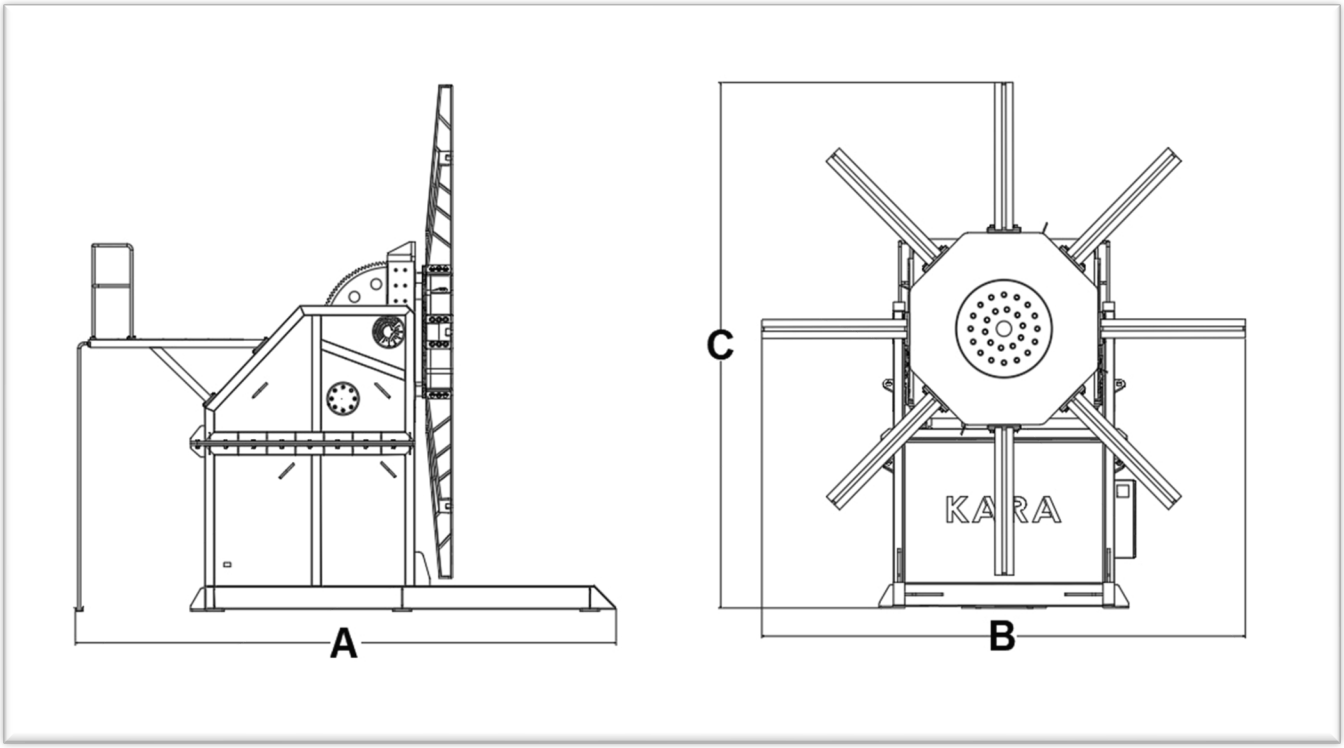

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Main Technical Specifications (Boom & Column 6x4)

1	Boom Vertical Stroke	4000 mm
2	Boom Horizontal Stroke	6000 mm
3	Column Rotation Stroke	360°
4	Safety and Fall Protection System	Triple Strand 20B-Safety Lock-Counterbalance
5	Boom Vertical Mechanism	Worm Gear & Strand – Electromotor & Worm Gearbox
6	Boom Horizontal Mechanism	Rack & Pinion – Servo Motor & Worm Gearbox
7	Column Rotation Mechanism	Idler Ring - Electromotor & Worm Gearbox
8	Control System	PLC
9	IP Classification	IP 52
10	Power Supply	380V-50Hz 3PH – 120A
11	Power Source	KARA Tcr 1600 A
12	Suction Machine	Kara Suction Machine
13	Control Box	KARA PEG1 Control Box
14	Chasis Overall Dimensions	2400mm x 2600mm
15	Boom Overall Dimensions	5300 mm
16	Column Overall Dimensions	6950 mm
17	Welding Head	Strip Clad & Electro Slag
18	Vertical Slider	500 mm Powered by Stepp Motor And Worm Gearbox
19	Horizontal Slider	300 mm Powered by Stepp Motor And Worm Gearbox
20	Strip Width	30-100 mm

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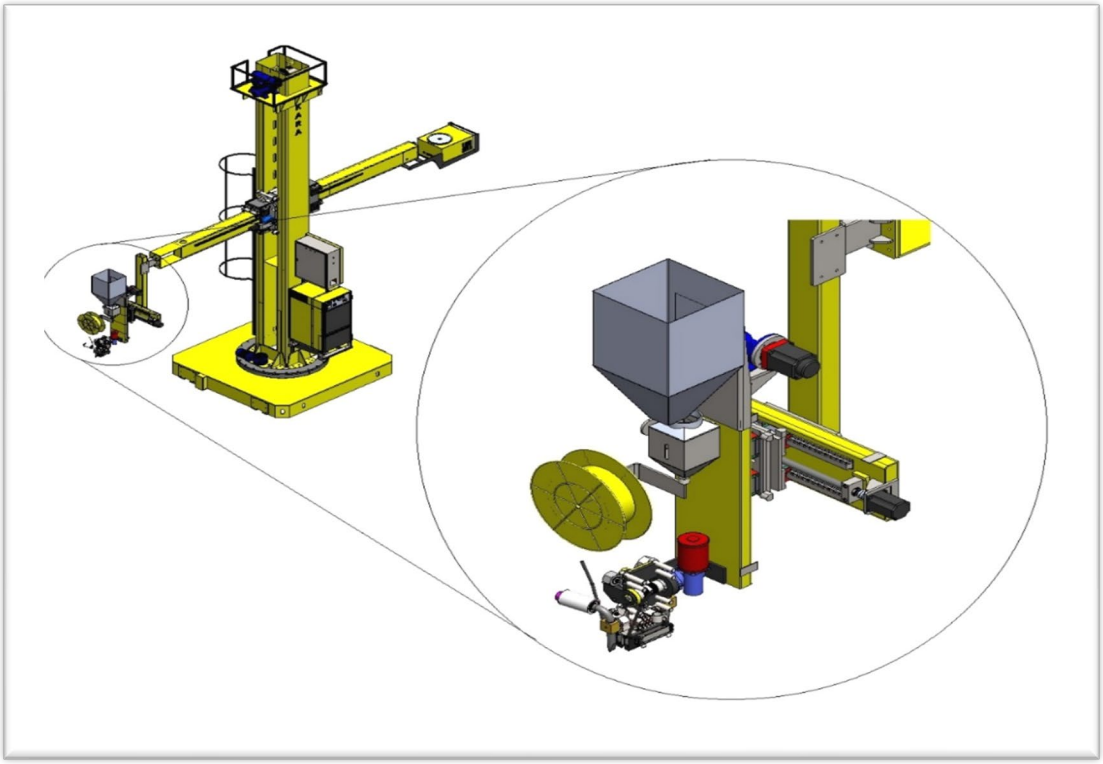
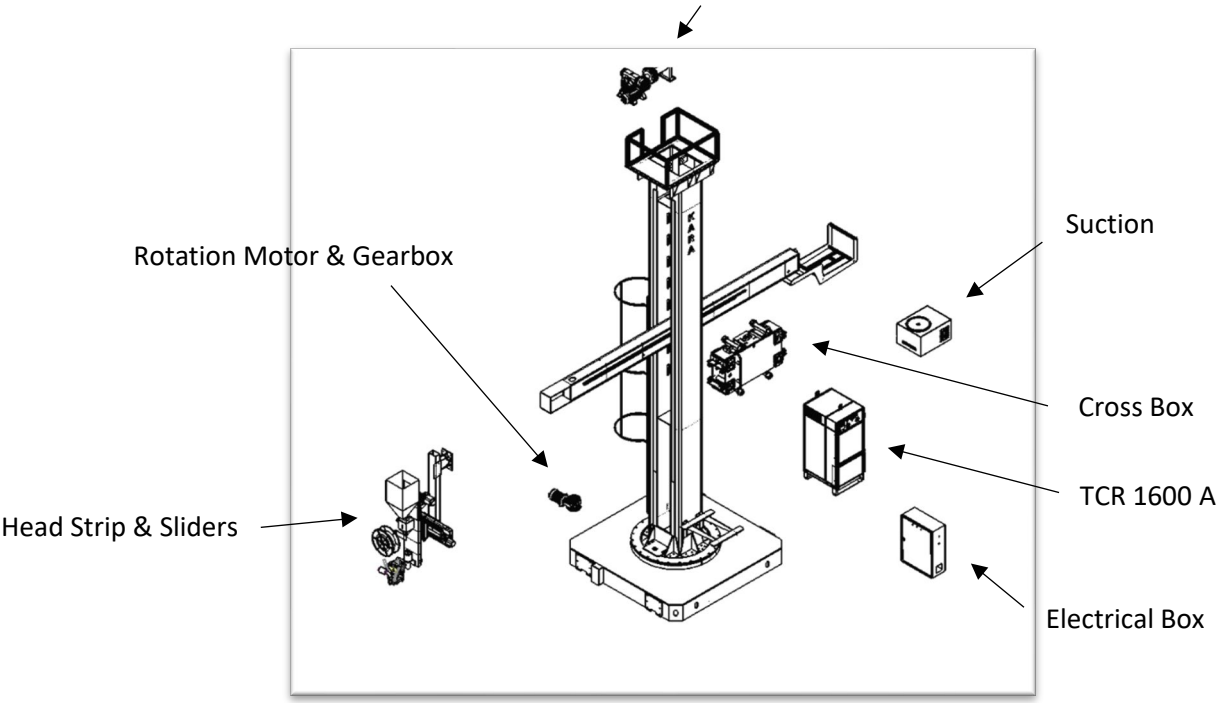


Boom Vertical Motor & Gearbo



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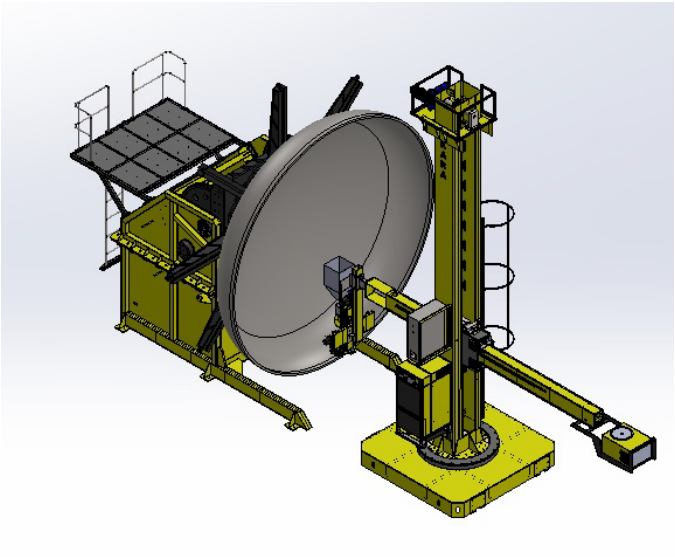
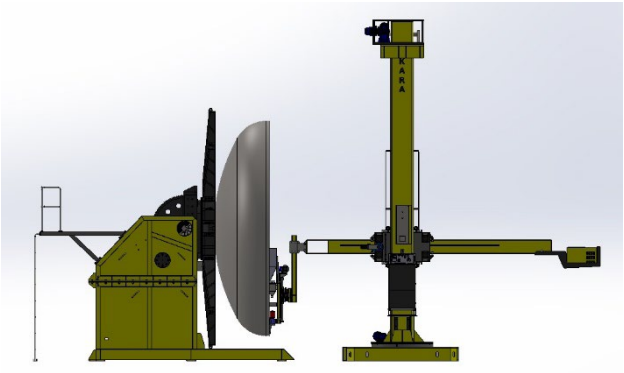
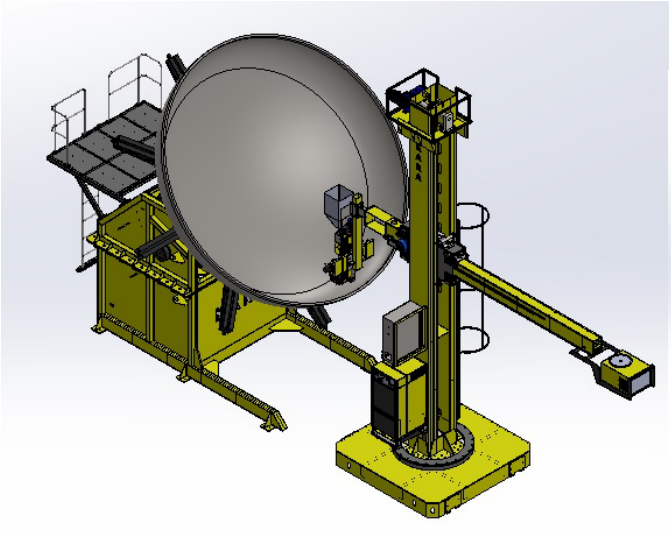
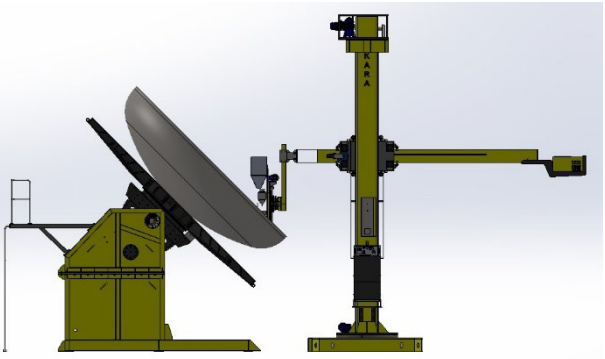




90° Position





45° Position

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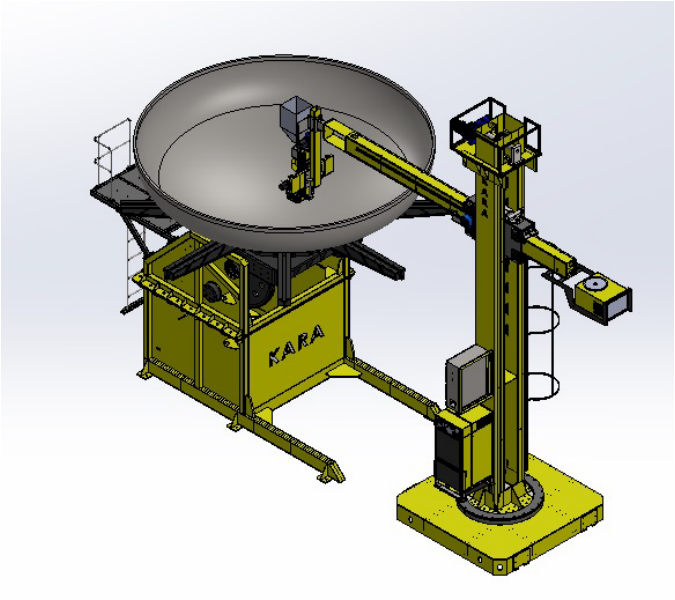

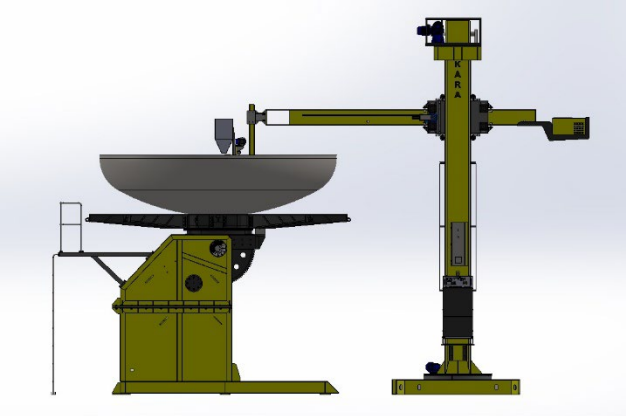

0° Position

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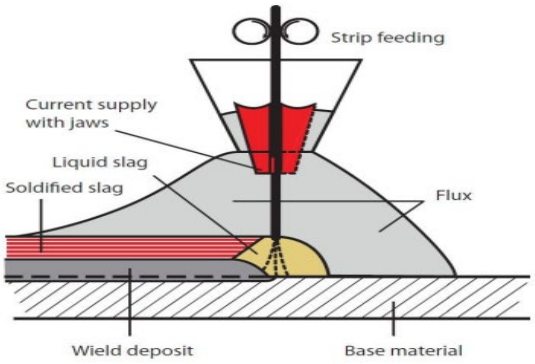
Strip Clad Head

SAW strip cladding

The well-known SAW method has been widely used with strip electrodes sincethe mid-1960s. A strip electrode, normally measuring 60 x 0.5 mm or 90 x 0.5 mm, is used as the (usually positive) electrode and an electric arc is formed between the strip and the workpiece. Flux is used to form a molten slag to protect the weld pool from the atmosphere and helps to form a smooth weld bead surface.



ESW strip cladding

Electroslag strip cladding is a development of submerged arc strip cladding which has quickly established itself as a reliable high deposition rate process. ESW strip cladding relates to the resistance welding processes and is based on the ohmic resistance heating of a molten electrically conductive slag.

There is no arc between the strip electrode and the parent material. The heat generated by the molten slag melts the surface of thebasematerial, and the edge of the strip electrode is submerged in the slag and flux.

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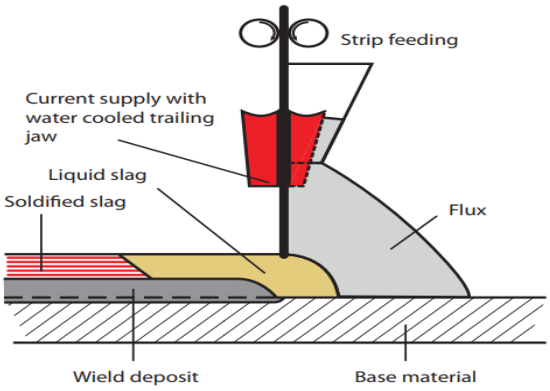

The penetration achieved with ESW is less than that with for SAW because the molten slag pool is used to melt the strip and some of the parent material. The temperature of the slag pool is about 2300°C, making it necessary to water-cool the contact jaws.

ESW uses higher welding currents than SAW strip cladding so the welding heads used are more heavy duty.

The following shows the features of ESW compared with the strip cladding process.

- Increased deposition rate of 60% to 80%.
- Only half of the dilution (10%-15%) from the base material due to less penetration.
- Lower arc voltage (24-26 V).
- Higher amperage and current density (About 1000-1250 A with strips of 60 mm width , corresponding to 33-42A/mm^2).Specially developed Fluxes for high productivity purposes can be welded with amperage in excess of 2000 A which corresponds to a current density about 70 A/mm^2 .
- Increased welding speed (50%-200%) , resulting in a higher area coverage in m^2/h.
- Comparable heat input.
- Lower flux consumption (about 0.5 kg/kg strip).

- The solidification rate of the ESW weld metal is lower , aids de-gassing and increases resistance to porosity. Oxides can rise easier out of the molten pool to the surface; resulting in a metallurgically cleaner weld metal which is less sensitive to hot cracking and corrosion.

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Fluxes for ESW

The ESW-process requires a slag pool with an ohmic resistance behavior. In comparison to SAW cladding the electrical conductance must be higher to avoid arc flash, which is a disturbance of the process .The composition of the welding flux

Influences the conductivity , the solidification range and the viscosity of the molten slag. To increase the cladding speed at corresponding high welding currents, it is necessary to use fluxes with high electrical conductivity and low viscosity.