



HIGH PERFORMANCE SAW



Submerged Arc System

Increase Productivity, Quality and Flexibility

Submerged Arc Systems

		DC series	XD series	AC/DC series
System		SUBARC-1000DC SUBARC-1250DC	SUBARC-1000XD SUBARC-1250XD	SUBARC-1000AC/DC SUBARC-1250AC/DC
Output		DC	DC	AC/DC
Process	SAW surfacing	No	Yes	No
	Various position wedling	Yes	Yes	Yes
Material		Mild Steel	Mild Steel Nikel-based alloys Stainless steel	Mild Steel
Welding thickness		Thick plates	Thin(4mm) to thick plates	Thick plates
Efficiency welding		Multi-layer multi-pass welding	Multi-layer multi-pass welding	Twin wire welding High efficiency

SubArc-1000DC/1250DC SubArc-1000XD/1250XD

Three-phase, CC/CV DC power sources are designed to semiautomatic and automatic welding, the precise control of the SubArc-1000DC/1250DC, SubArc-1000XD/1250XD delivers superior arc for Submerged Arc (SAW) and Electroslag (ESW) welding processes, as well as MIG, MAG, MMA, CAG and OAC which require high current and high duty cycle, with(Dia 1.2-6.0mm) wires and CAG(Dia 6-12mm) carbons.

Moreover, the SubArc-1000XD/1250XD are capable to Nickel-based Alloys and have excellent performance on very thin plates.



TOP Features

- Ability to preset the current;
- 100% duty cycle with a maximum output capacity;
- Reduced heat affected zone, minimized distortion and increased mechanical properties;
- Overloading, over current, loss of phase and short circuit protection ensure long-lasting performance;
- Use the mode switch to select the desired output characteristics for the process being used—CC and CV;
- Versatile power source is capable to MMA, MIG/MAG and Carbon Arc Gouging;
- Precise output control results in a stable arc;
- Modular parallel to enhance reliability;
- User-friendly operation panel.



Technical Data

Product Name	Input Voltage	Rated Output Current/Voltage/Duty Cycle	Output Range	Dimension H x W x D in. (mm)
SubArc-1000DC	3 phase 380V+/-15%	1000A/50V/100%	CC Mode: 100-1000A	960x420x1100
			CV Mode: 10-50V	
SubArc-1250DC	3 phase 380V+/-15%	1250A/50V/100%	CC Mode: 100-1250A	960x420x1100
			CV Mode: 10-50V	
SubArc-1000XD	3 phase 380V+/-15%	1000A/50V/100%	CC Mode: 100-1000A	960x420x1100
			CV Mode: 10-50V	
SubArc-1250XD	3 phase 380V+/-15%	1250A/50V/100%	CC Mode: 100-1250A	960x420x1100
			CV Mode: 10-50V	

AT-1 SubArc Tractor

The superb welding tractor for linear, circular or curve welding

Quick Specs



◆ Applications

Ship and barge building
Storage tank erection
Beam
Girder or column fabrication
Bridge deck installation
Long seams on heavy weldments

◆ Process

Submerged Arc

◆ Recommended Power Supply

SubArc-1000XD/1250XD

◆ Net Weight

110lb.(50kg) without flux or wire

◆ Wire Feed Speed

1-11mpm for ϕ 1.2-4.0mm
0.5-7mpm for ϕ 2.0-6.0mm

Features:

- ◆ Compact and efficient design allows for easy movement between work pieces.
- ◆ Self-propelled, 3-wheeled drive provides stable, accurate and constant operation.
- ◆ Arc Tractor Process Control with digital display, allows presetting and control of welding parameters.

X-axis is the travel direction, 0.1-1.3mpm(3.9-51 IPM)

+Y-axis (vertical) 0-70mm \pm 100mm(Vertical head lift and slide)

R y \pm 90°. Weld angle is up to 90°from vertical to either side

R z 45°. Angle forward or backwards by up to 45 degrees

R x 45°. Drag angle is up to 45°from vertical



- ◆ Easily accommodates a 55-pound (25kg) wire reel for fewer wire changeovers.
- ◆ Horizontal, vertical and rotary slides allow for quick adjustment of weld nozzle into various
- ◆ The rugged design ensures a long life span in harsh conditions.
- ◆ Manual clutch enables freewheeling movement of the tractor.
- ◆ Can upgrade to 4-wheel tractor.

Advantage

- ◆ Exceptional tracking control and self-steering in most applications leave the operator free for quality control, joint cleaning and flux handing;
- ◆ Welds butts, horizontal fillet and lap joints to the left or right side of the tractor frame for convenience;
- ◆ Close mechanical alignment between wire and joint maximizes weld quality with no fixturing costs;
- ◆ Using PWM control technology to ensure precise and stable traveling.

Technical Data

Wire dimensions,mm	Max wirefeed speed, m/min	Electrode weight, kg	Flux volume	Weight excl. wire and flux. Kg	Permissible load 100%, A	Input voltage V	Travel speed m/min
Steel(1.2-5.0mm)	11(7)	25	6	50	1000	15-115	0.1-1.3
Stainless(1.2-4.0mm)							
Cored wire(1.2-4.0mm)							

More Tractors Available

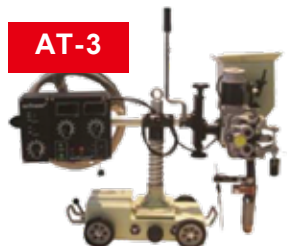
Twin arc welding involves feeding two wires in parallel through the same contact tip. It differs from tandem welding in using only one power unit and one wire feeder. In comparison with the use of a single wire, twin arc welding results in a higher rate of melt production and improved stability.

For Multi welding positions, especially fillet welding in horizontal fillet & slope position

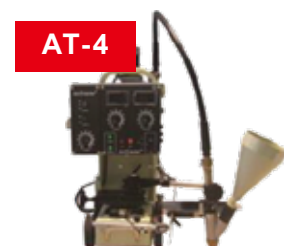
- ▶ Strengthen torque and stable wire feed thanks to 4-rolls with straightening mechanism
- ▶ Easy to adjust feed head and torch



For flat or fillet welding medium and thin plates



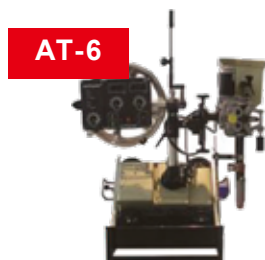
For various positions welding



For flat or fillet welding medium and thin plate, inside and outside circular



For Twin Wires Welding



For Twin Wires Welding

ArcTractor Controller

- ◆ With Arc Voltage Sensing Technology, heat input is reduced and deposition rate is increased by 30%. This technology also ensures stable welding arc over a wide range of parameters and precise output control
- ◆ Scratch and direct start methods

- | | |
|--|----------------------------------|
| 1.Auto/OFF/Manual
Travel Switch | 8. CC/CV Switch |
| 2.Travel direction- Forward/
Backward | 9.Power Switch1 |
| 3.Travel Speed Adjustment | 0.Circuit Breaker |
| 4.Inch Up Button | 11.Wire Feed Speed
Adjustment |
| 5.Inch Down Button | 12.Current/Voltage
Adjustment |
| 6.Start Button | 13.Amps Display |
| 7.Stop Button | 14.Voltage Display |
| | 15.Power Indicator Light |



Designed to work in conjunction with the SubArc-1000XD/1250XD power source. This controller is used to set the welding parameters & stop/start the welding process. This robust unit has two digital displays and allows presetting of all welding parameters prior to welding including travel speed of tractor. Real time welding parameters are also displayed during welding. The digital controller can be mounted onto our welding tractor column & boom or positioned wherever required. Manual moving of the wire up and down and the travel back and forward is also easily operated from the front of the controller.

Technical Parameter

Supply voltage from the power source	15-115VDC (Arc Voltage)	Welding speed	0.1-1.3mpm
Welding voltage control	10-50VDC	Operating temperature	-10°C- +40°C
Power consumption	max 200VA	Control cable max	max 100m
Speed control	PWM Control Technology	Wire feed speed, consumable wire	0.5-5.5mpm/1-11mpm (depending on wire feed unit)

Features

- ◆ CC/CV mode for CC/CV characteristic welding machine
- ◆ Preset of welding parameter
- ◆ Travel mode: manual and automatic
- ◆ Wire feed control box and tractor control box can be assembled separately
- ◆ User-friendly

AH-1 SubArc Welding Head

Quick Specs

Rotational Speed
4000RMP

DC Input Power
15-115V

Wire Feed Speed
1-11mpm for ϕ 1.2-4.0mm
0.5-7mpm for ϕ 2.0-6.0mm

AH-1 SubArc Welding Head

Designed for the SubArc-1000XD/1250XD power source, for boom mounting or tractor mounting. The AH-1 welding head consists of a heavy duty 4 roll wire drive system with large 40mm rollers & gears driven by a powerful 24V DC print motor to give the best possible feeding of welding wire. At the end of every weld the wire automatically retracts for perfect finished. The motor has free-maintenance brushes for a long life span. A height adjustment slide is fitted to the drive block to assist with positioning of the welding head. The welding head is ideal for tractor mounting, column & boom or a frame mounting etc.

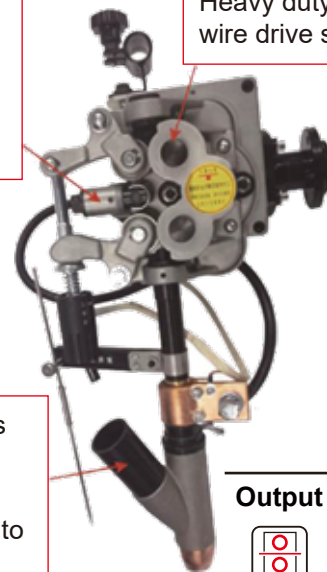
Feature

- ♦ The pre-selection of nominal values for welding current, arc voltage and speed in coordination with the SubArc-1000XD /1250XD power source ensures a high degree of automation.
- ♦ The AH-1 welding head has an automatic ignition and automatic burn-back with withdraw for an optimized welding process.
- ♦ The welding head also has adjustment to angle forward or backwards by up to 45 degrees & side to side by up to 45 degrees.
- ♦ All welding heads are equipped with a laser pointer and a mechanical pointer for visual seam tracking. Via a cross support, the AH-1 can be manually positioned with an effective adjusting range of 100mm each.

A built in wire straightener helps to ensure the wire drives consistently & minimizes contact tip wear.

Heavy duty 4 roll wire drive system

The welding torch end is positioned approx. 230mm below the wire drive (Can be extended to 270, 290, 330mm)



Output Input



24 VDC

Technical Specifications

Wire feeding range	1.6mm-6.0mm	Horizontal adjustment, mm	±100mm
Flux hopper capacity	6L	Swivel arrangement, Deg	360°
Drive system	4 roll 40 mm + wire straightener	Torch tilt, Deg	±45°
Wire feed range	1.0-11mpm/0.5-7mpm	Dimension, L*W*H	200*446*213mm
Motor spec	24V DC 150W	Vertical adjustment,	0-70mm ± 100mm
Welding current, A	1000A(continuous)		

More Welding Heads Available

AH-1S

The wires are normally small diameter
 $\phi 1.2-2.8$ (3.0)mm
Wire Feed Speed: 1-11mpm



AH-1S

Deposition rate: increase by 40%
Wire diameter: $\phi 2.0-6.0$ mm
Wire feed speed: 0.5-7mpm
By using the hot wire without arc, increase in heat input could be suppressed but the amount of weld deposit could be greatly increased.

AH-2 Twin Arc

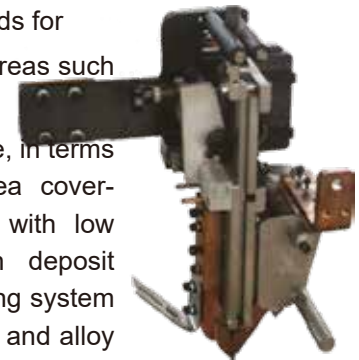
Higher Deposition Rates & Lower Heat
Wire diameter: $\phi 1.2-2.5$ mm
It offers up to 30% higher deposition rates and can be used at higher currents and speeds. Very high welding speeds can be achieved in fillet welding, but are also used successfully for butt welding. Cored wires can further enhance deposition rates.



AH-4 Strip Cladding

60*0.5mm(0.3mm)Strip cladding by submerged arc welding(SAW) is the preferred methods for cladding or for larger areas such as pressure vessels.

It of high deposition rate, in terms of both kg/h and area coverage(m^2/h), combined with low penetration and high deposit quality. The strip welding system is used to overlay mild and alloy steels usually with stainless steel.



AH-5 Open Arc Cladding

It is applied to the metal surface of deposited, corrosion and abrasion resistance material, and improves the wear-resisting property of the metal. The deposited metal surface has quality excellence, due to equal arc length and equal penetration; it is suitable for multi-pipe of boiler, pipes, wear-resistant plate, mining machinery and other metal repaired industry.

AH-6 Large Diameter MIG

Wire diameter: $\phi 2.4-3.0$ mm
Wire feed speed: 1-11mpm.

Increase deposition rate.
Increase welding speed and reduce heat input.
Suitable for huge metal structure and multi-core wires.



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