

AN EXTENSIVE RANGE OF SEAM WELDERS LONGITUDINAL WELDING NEEDS

BODE HSW

The Bode HSW range of Seam Welding machines has been designed for welding longitudinal seams of cylindrical, conical and rectangular workpieces and, in addition, flat sheet or plate.

The robust construction of the machine and patented design of the clamping finger operation ensures the correct alignment for the welding on-gauge material in stainless steel, mild steel, titanium, copper or aluminium. The variable speed travelling carriage which traverses an accurately machined beam ensures the torch follows precisely the welding seam.

The Bode HSW range will produce uniformly strong welds and reduce welding costs using TIG (Argon Arc), MIG (Metal Inert Gas using Arcon, CO₂ or Gas mixtures) or Submerged Arc processes.



5 HSW 150-1600
5 HSW 150-1600 seam welder fitted with
Tig welding equipment.
Max clamping length 1600 mm
Max diameter of workpiece 800 mm
Min diameter of workpiece 150 mm

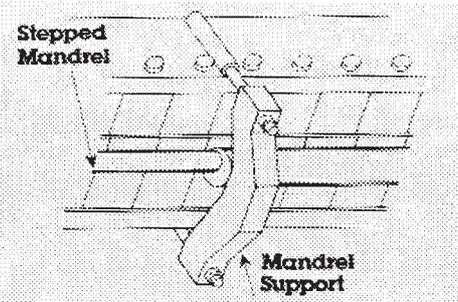
OPTIONS

- Travelling carriage tacho speed indicator.
- Interchangeable copper/copper chromium-plated/steel or stainless steel backing bar inserts drilled for inert gas backing – water cooling or heating.
- Shelves fitted underneath the clamp frame at each side of the mandrel for the welding of flat sheets.
- Step-type mandrel for the welding of small diameter workpieces.
- Work conveyor to facilitate handling and positioning of heavy workpieces.
- Foot operated air-valve for the operation of the clamping fingers, alternatively, touch-toe actuation control through control hoses located around the machine base.
- Extension of beam so that the travel carriage and torch can be traversed outside the clamp frame to work in conjunction with a Welding Positioner.
- Elevating Mandrel: The range of material thicknesses can be increased by incorporating a pneumatically operated elevating mandrel. The elevating mandrel has two advantages: when welding thick material damage can arise to the back-up insert caused by a large weld bead, by lowering the mandrel the clearance between clamping fingers and backing bar insert is increased thus permitting the workpiece to be more easily withdrawn, the range of material thicknesses can also be increased to approximately 15 mm. The mandrel is easily raised and lowered by an air valve which is put in a convenient place for the operator. By means of the elevating mandrel the travel of the clamping fingers is maintained at the same distance throughout the range of thicknesses, thus ensuring the maximum clamping pressure at all times.
- Walkways can be provided where machine controls and access are not easily within reach of the operator.

GENERAL SPECIFICATION

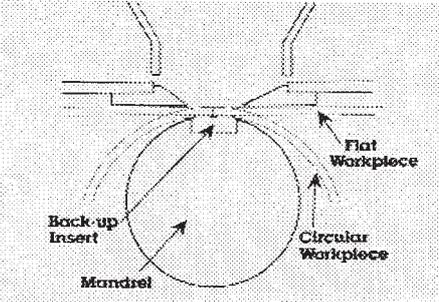
- Rigid construction ensuring accurate clamping and workpiece alignment.
- Accommodates conical, cylindrical, flat, rectangular workpieces.
- Patented finger clamping mechanism, fingers supported to give a „rock and roll“ movement, maximum clamp pressure 70 kg/cm each side of fingers.
- Ready horizontal adjustment of fingers to suit welding parameters.
- Replaceable finger tips.
- Clamping pressure readily adjustable by regulator positioned on machine pedestal.
- Backing bar insert designed to give uniform gas flow (optional).
- Precise seam alignment gauges.
- Precision variable speed drive for welding torch carriage.
- Automatic sequence of initiating and ending of weld cycle.
- Limit switches to prevent overrun at each end.
- Foot operated air controls for each row of clamping fingers.
- Backing bars readily interchangeable.
- Rotating mandrels can be provided which incorporate two or more backing bars to facilitate rapid changeover to handle various forms of workpieces.

DESIGNED TO MEET ALL COST-EFFECTIVELY



Stepped Type Back-up Mandrel

This optional extra is available for the welding of short smaller diameter workpieces that can normally not be handled on the standard mandrel.



Back-up Mandrel

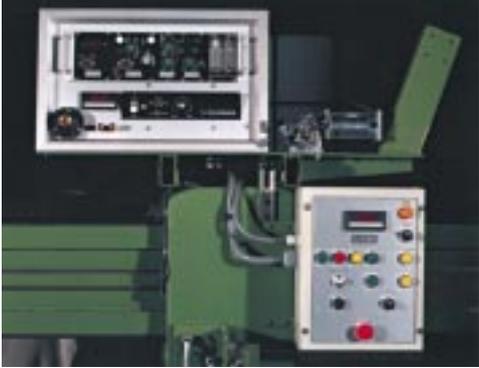
The work is supported by the mandrel which has a groove to accommodate interchangeable back-up bar inserts. Interchangeable mandrels can normally be supplied to handle non-standard diameter workpieces. Flat sheets, cylinders, cones, open-ended boxes can be welded on the same machine. Mandrels can incorporate inert gas backing to the underside of the welded joint. Alternatively, water cooling can also be incorporated.

In Use

The first half of the weld joint is positioned over the back-up insert until it locates behind the two workpiece centralising jigs which have previously been lowered. The rear set of clamping fingers are then brought into operation, thus forcing the weld joint to be clamped firmly against the mandrel insert. The other half of the weld joint is then positioned against the first half, the other set of clamping fingers are brought into operation, thus both edges of the workpiece are firmly clamped together. The workpiece centralising jig ensures that the joint is directly over the groove of the back-up insert. The welding operation is then carried out by traversing the torch.

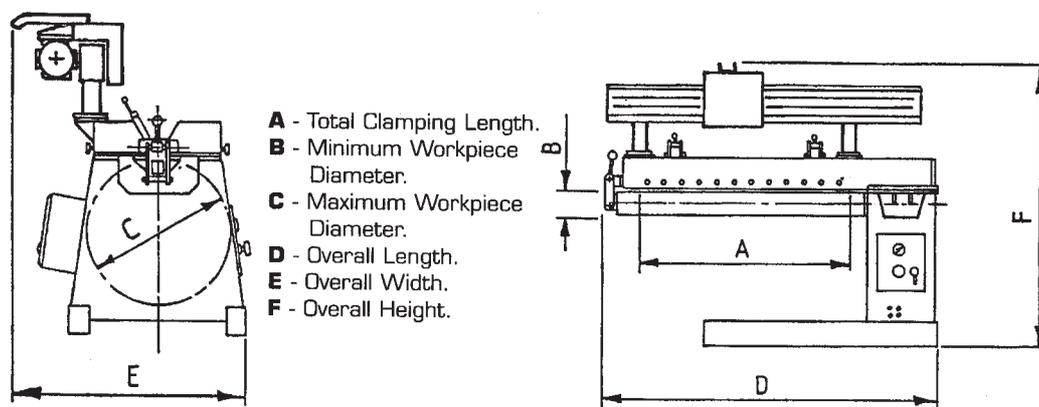
Weld travel follows the joint precisely are at a pre-determined constant speed.

Close up of welding and machine control panels on 2/HSW water-cooled model



9/HSW 2500 - 3000 Special model with manual elevation of the mandrel





A - Total Clamping Length.
B - Minimum Workpiece Diameter.
C - Maximum Workpiece Diameter.
D - Overall Length.
E - Overall Width.
F - Overall Height.

- Diagrams shown for reference only -

	MACHINE TYPE											
	2/HSW 17-108	2/HSW 17-120	2/HSW 17-132	2/HSW 17-144	2/HSW 17-148	5/HSW 100-600	5/HSW 100-700	5/HSW 100-800	5/HSW 100-900	5/HSW 125-1000	5/HSW 125-1100	
Total Clamping Length - mm (A)	2743	3048	3353	3658	3759	600	700	800	900	1000	1100	
Clamp Pressure on Airline 5.5 bar Kg/cm	70	70	70	70	70	35	35	35	35	35	35	
Material Thickness Capacity - mm	3-8	3-8	3-8	3-8	3-8	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	
Maximum Clamp Opening - mm	12	12	12	12	12	10	10	10	10	10	10	
Minimum Workpiece Internal Diameter -mm (B)	430	430	430	430	430	100	100	100	100	125	125	
Maximum Workpiece External Diameter - mm (C)	1220	1220	1220	1220	1220	800	800	800	800	800	800	
Carriage Travel Speeds - mm/min - (Note 1)	75/ 1500	75/ 1500	75/ 1500	75/ 1500	75/ 1500	100/ 2000	100/ 2000	100/ 2000	100/ 2000	100/ 2000	100/ 2000	
Overall Length (D)	4252	4557	4862	5167	5268	1400	1500	1600	1700	1800	1900	
Overall Width (E)	1500	1500	1500	1500	1500	1500	1190	1190	1190	1190	1190	
Overall Height (F)	2450	2450	2450	2450	2450	2450	1570	1570	1570	1570	1570	
Nett Weight - Kgs	3500	5500	6000	6900	7500	750	840	950	1000	1100	1200	

	MACHINE TYPE										
	5/HSW 125-1200	5/HSW 125-1300	5/HSW 150-1400	5/HSW 150-1500	5/HSW 150-1600	5/HSW 150-1800	5/HSW 200-1900	5/HSW 200-2000	5/HSW 200-2200	5/HSW 200-2500	7/HSW 75-1000
Total Clamping Length - mm (A)	1200	1300	1400	1500	1600	1800	1900	2000	2200	2500	1000
Clamp Pressure on Airline 5.5 bar Kg/cm	35	35	35	35	35	35	35	35	35	35	9
Material Thickness Capacity - mm	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.08	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	0.5-6.0	0.3-1.2
Maximum Clamp Opening - mm	10	10	10	10	10	10	10	10	10	10	4
Minimum Workpiece Internal Diameter -mm (B)	125	125	150	150	150	150	200	200	200	200	75
Maximum Workpiece External Diameter - mm (C)	800	800	800	800	800	800	1000	1000	1000	1000	752
Carriage Travel Speeds - mm/min - (Note 1)	100/ 2000	75/ 1500									
Overall Length (D)	2000	2100	2260	2360	2460	2660	2940	3040	3240	3540	1720
Overall Width (E)	1190	1190	1400	1400	1400	1400	1400	1400	1400	1400	870
Overall Height (F)	1570	1570	1620	1620	1620	1620	1820	1820	1820	1820	1730
Nett Weight - Kgs (Approx.)	1550	1600	1650	1700	1800	2250	2750	2900	3100	3300	750

Notes

1. Machine complete with beam and variable speed travel carriage through Inverter controlled AC motor and tachometer with 10 - turn potentiometer and digital speed indicator and control system protected from H.F.
2. Electrical supply for all models - 1 Phase, 50 Hz, 240 v - 1.3 amp or 220 v - 1.4 amp
3. Compressed air supply required - up to 5,5 bar.