

External Cladding Head

Issued Aug. 2016 • Index No. AY/52.0

Submerged Arc
Welding 

Quick Specs

Applications

Pressure vessel
Pipe
Petrochemical
Off shore
Subsea
Paper pulp plants

Processes

Submerged arc (SAW)
Electroslag (ESW)

Rated Current

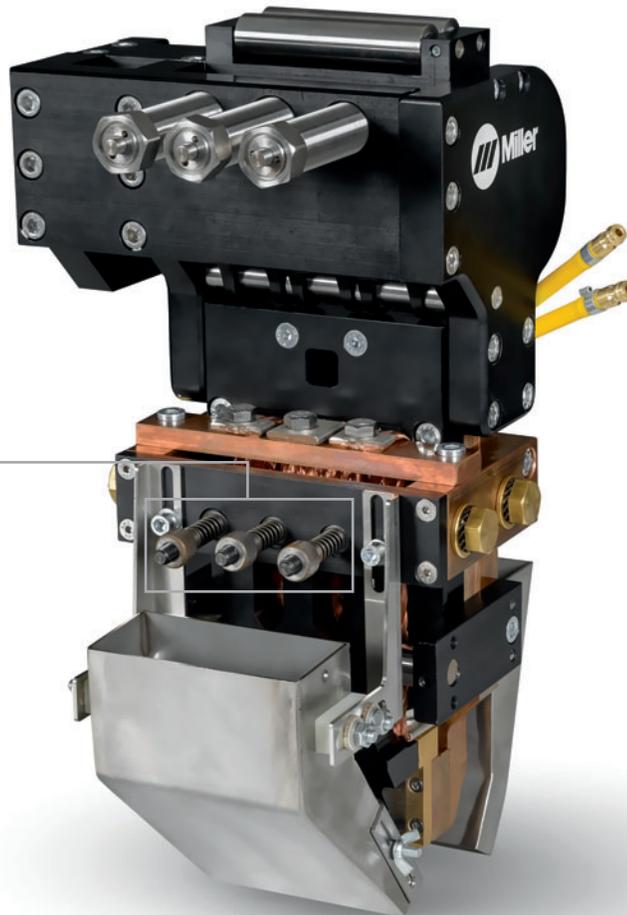
30–90 mm: 3,000 A at 100% duty cycle

Cladding solutions by Miller and Hobart Filler Metals provide cost-efficient means of depositing stainless steel and Ni-alloy materials to create corrosion- or wear-resistant overlays on large non- or low-alloyed steel components.

Cladding heads are designed for both submerged arc and electroslag strip cladding applications.

Individually adjustable spring-loaded contact jaws provide optimal current transfer, reducing risk of cladding failures.

Flexible external cladding head accommodates strip widths from 30 to 90 mm.



Full-width strip drive roller includes independent adjustments for each 30 mm increment to optimize strip feeding with trouble-free operation.

Water-cooled body extends contact tip life and provides trouble-free operation at high duty cycle.

Flexible configuration offers multi-direction travel with adjustable strip guide for precise strip positioning.

Adjustable flux delivery chute optimizes flux coverage for each 30 mm strip width.

Miller recommends



TRUE BLUE
1 YR. WARRANTY

Warranted for 90 days, parts only.



Miller Electric Mfg. Co.
An ITW Welding Company
1635 West Spencer Street
P.O. Box 1079
Appleton, WI 54912-1079 USA

Equipment Sales US and Canada
Phone: 866-931-9730
FAX: 800-637-2315
International Phone: 920-735-4554
International FAX: 920-735-4125

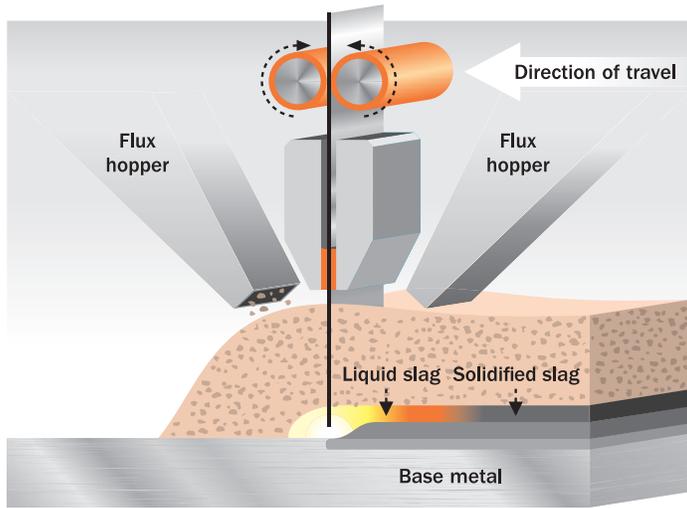
MillerWelds.com



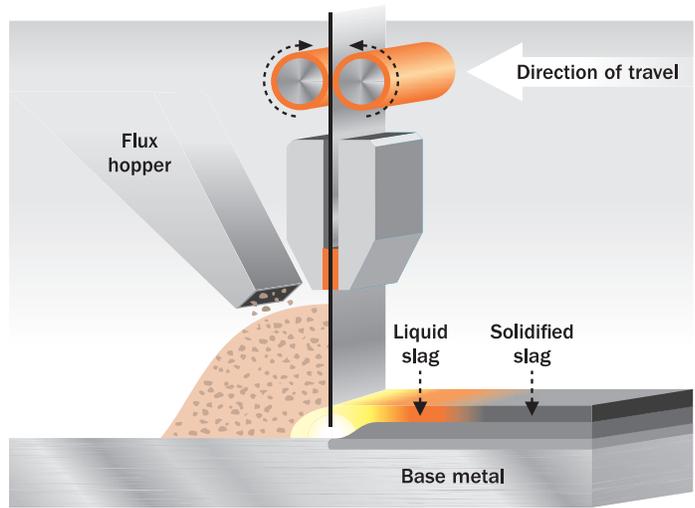

Specifications (Subject to change without notice.)

Model	Strip Capacity	Max. Rating	Cooling Method	Cooling Flow	Dimensions	Net Weight
External cladding head 30–90 mm	30 mm 60 mm 90 mm	3,000 A	Coolant	4.2 qt./min. (4 L/min.)	H: 14.92 in. (379 mm) W: 8.76 in. (223 mm) D: 8.9 in. (226 mm)	38.5 lb. (17.5 kg)

Submerged Arc and Electroslag Cladding



SAW Strip Cladding



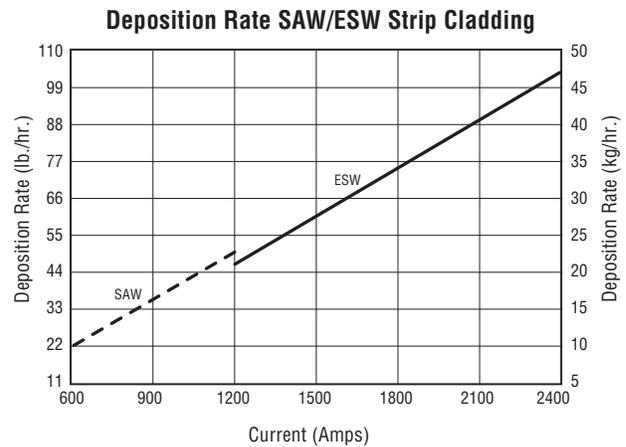
ESW Strip Cladding

SAW strip cladding is an arc welding process. The function of the flux is basically the same as in standard submerged arc welding. It forms a slag to protect the weld pool and supports the formation of the weld bead.

In ESW strip cladding there is no arc between the strip and the parent metal and the flux is fed from only one side. The molten slag is electrically conductive and the heat needed to melt the strip and the parent metal surface is generated by the electrical resistance in the weld pool. Because of this, penetration and thus dilution is lower than with SAW cladding.

ESW strip cladding has the following benefits over SAW strip cladding:

- Increased deposition rate
- High travel speed
- Low dilution
- Less penetration
- Comparable heat input
- Lower flux consumption
- Acceptable weld deposit chemical composition obtainable in one layer



Strip Cladding Typical Applications

Strip cladding is a productive overlay solution for a wide variety of applications where increased deposition rate, high travel speeds, and low dilution are needed. Typical applications include pressure vessel, petro-chemical, pipe, offshore, subsea, paper and pulp plants.



Hobart SWX Fluxes for Strip Cladding

Hobart Filler Metals offers a wide range of submerged arc and electroslag strip cladding fluxes to meet the needs of different alloy types and applications. All SWX agglomerated fluxes are protected from moisture

pickup by durable, Excess Air Evacuation (EAE) packaging, which helps to minimize the risk of porosity and hydrogen-induced cracking.

Process	Flux	Strip Alloy Type	Package Weight and Type	Key Cromastrip Alloys
SAW	SWX 305	Stainless steel	55 lb. (25 kg) EAE bag	308L, 309L, 316L, 347
ESW	SWX 330	Stainless steel	55 lb. (25 kg) EAE bag	21.11L, 21.13.3 L, 21.11 LNb
	SWX 382	Nickel-based alloys	55 lb. (25 kg) EAE bag	NiCrMo-3, NiCr-3
High-speed ESW**	SWX 340	Stainless steel	55 lb. (25 kg) EAE bag	308L, 309L, 316L, 347

*Cromastrip products listed above are the key alloys available. For a complete list of available alloys and packaging, please contact our customer service team.

**SWX 340 is designed to allow quality cladding at high travel speeds of up to 13 ipm (0.33 m/min.)

Hobart Cromastrip Strip Cladding

Hobart Filler Metals also provides a complete offering of strips that offer best-in-class performance when cladding carbon steels, low-alloy steels, stainless steels, and nickel-based alloys.

Cromastrip Dimensions			Cromastrip Packaging (Coils)		
30 X 0.5 mm	60 X 0.5 mm	90 X 0.5 mm	55 lb. (25 kg)	110 lb. (50 kg)	265 lb. (120 kg)

Hobart – Your Partner in Cladding

Hobart delivers proven performance, solving specific challenges with a wide range of submerged arc welding and strip cladding solutions. To find the solution you're looking for, contact our technical support or customer service teams at:

Applications Engineering Team

800-532-2618 (8 am–5 pm EST Monday through Friday)
Applications.Engineering@HobartBrothers.com

Customer Service Team

800-424-1543 (United States) or 937-332-4000 (Canada and Mexico)
For a full list of packaging and availability please contact our customer service team.

Genuine Miller® Accessories



SubArc Strip Drive 100 Digital Low Voltage 300940

Heavy-duty, right-angle strip drive assembly with mounting bracket. Designed for automated strip clad applications.

Coolant Systems For more information, see the Coolmate™ Series literature AY/7.2.



Coolmate™ 3

043007 115 V

043008 230 V

Unique paddle-wheel indicator, external filter and easy-fill spout.

Coolmate™ 4 042288 115 V

Tough molded polyethylene case with carrying handle.



Low-Conductivity Coolant 043810

Sold in cases of four one-gallon recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -37 degrees Fahrenheit (-38°C) or boiling to 227 degrees Fahrenheit (108°C). Also contains a compound that resists algae growth.

Ordering Information

Equipment	Stock No.	Description	Qty.	Price
External Cladding Head 30–90 mm	301167			
Accessories				
SubArc Strip Drive 100 Digital Low Voltage	300940	Heavy-duty right-angle drive motor with mounting bracket for automated strip clad applications		
Coolmate™ 3	043007 043008	115 V, 50/60 Hz CE 230 V, 50/60 Hz CE		
Coolmate™ 4	042288 042288015	115 V, 50/60 Hz 115 V, 50/60 Hz CE		
Low-Conductivity Coolant	043810	1-gallon plastic bottle. Must be ordered in multiples of four (one case)		
Water Flow Switch Kit	195461			
Water Hose Extension (Rubber)	40V76R6 40V76R 40V76RL	6 ft. (1.8 m) 12.5 ft. (3.8 m) 25 ft. (7.6 m)		
Water Coupler	11N18	5/8"-18 LH		
Quick-Release Water Kit	QRW			

Date:

Total Quoted Price:

Distributed by:

