

**H&S**  
**AUTOSHOT**

# HSM250 DOUBLE-PULSE SYNERGIC MIG WELDING SYSTEM

## QUICK SPECS

### Automotive & Industrial

- Steel - Stainless
- Boron - Aluminum

### Processes

- MIG (GMAW)
- TIG (GTAW)
- Stick (MMAW)

### Input Power

- 208-240 VAC
- 1-Phase, 50-60Hz

### Output Range

- 30-250 Amps

### Output Rating

- 250A @ 26.5VDC
- 30% duty-cycle

- 180A @ 26.5VDC

- 60% duty-cycle

### Wire Feed Speed

- 60-940 ipm
- 1.5-23.9 mpm

### Open-Circuit Voltage

- 84v (Max.)

### Net Weight

- 172 lbs. (78 Kg)



- **Synergic Program Modes:** Select synergic, single-pulse synergic or double-pulse synergic.
- **Synergic Inputs:** Select material type, wire, size, shield gas & material thickness: pull trigger to apply perfect weld.
- **Triple-Drive MIG Selection:** Three guns and wire feed drives for silicone bronze, aluminum & steel MIG welding.
- **Intelli-Cool Fan Function:** Cooling fans function only when required to conserve energy and limit contaminants.

- **Dual Drive Roll Feeders:** Insures smooth feeding of small diameter and/or soft alloy welding wires.
- **Dual Cylinder Cart:** Supports mixed and 100% shield gas cylinders with dedicated lines and regulators.
- **DC TIG Weld Function:** Lift-arc TIG torch includes trigger, gas and thumb-wheel output control.
- **Stick Electrode Function:** Includes wide output amperage range with hot-start and arc-force adjustment.

# Specifications

H&S Part Number: HSW-6550

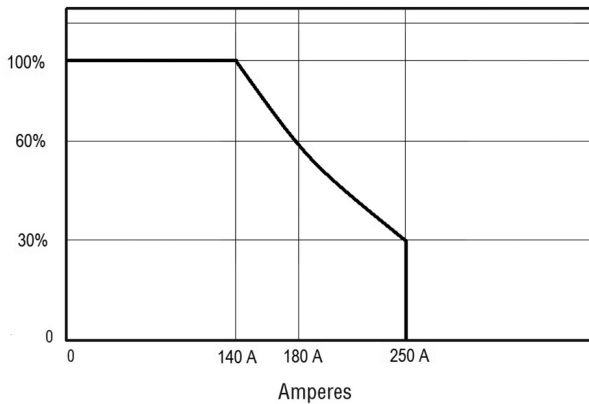
Amperage Range	Rated Output	Mode	Amps Input (Max.)				Max. Open-Circuit Voltage	Wire Feed Speed	Wire Type and Diameter	Max. Spool Size	Dimensions	Net Weight
			208 V	230 V	277 V	KW						
10 - 250 A	180 A at 24VDC, 60% duty cycle	MIG	40 A	36 A	30 A	8.24	84 V 12 V 94 V	60 - 940 ipm 1.5-23.9 mpm	Solid/stainless steel: .023-.045 in. (0.6-1.2 mm) Soft/aluminum, Si-Br: .030-.045 in. (0.8-1.2 mm)	12 in. (305 mm)	H: 36.5 in. (927 mm) W: 12.6 in. (320 mm) D: 41 in. (1,041 mm)	172 lb. (78 kg)
	250 A at 26.5VDC, 40% duty cycle	TIG	31 A	28 A	23 A	6.25						

Note: Operating temperature range: -4° to +104°F (-20° to +40°C). Storage temperature range: -22° to +122°F (-30° to +50°C).

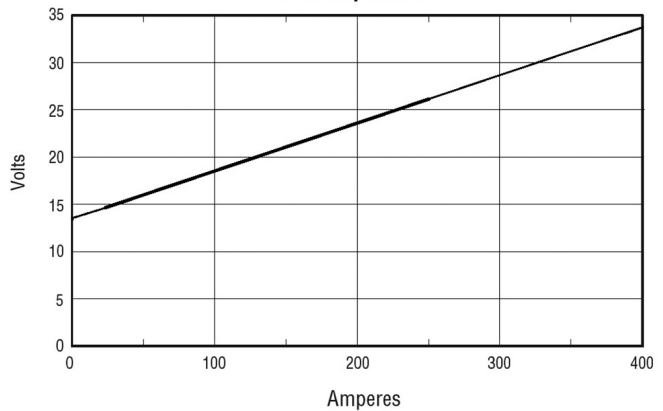
 Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

# Performance Data

Duty Cycle Chart

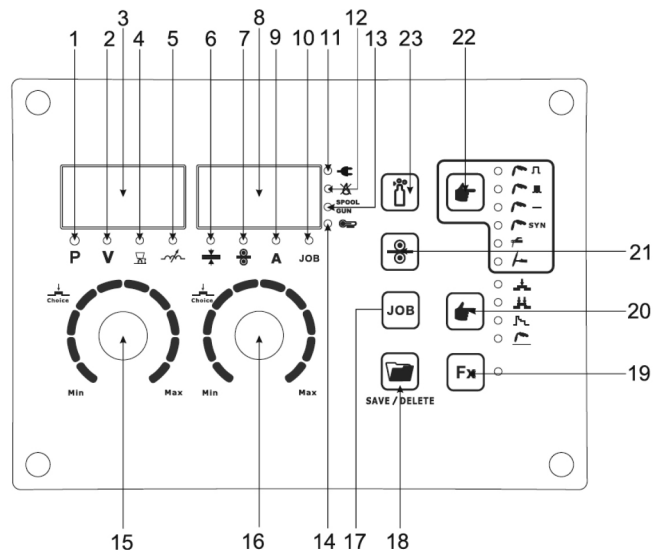


Volt/Amp Curves



# Control Panel

- |                                      |   |
|--------------------------------------|---|
| 1. Synergic program indicator.       | 13. Spool gun mode indicator.                                 |
| 2. Welding voltage indicator.        | 14. Over-temp alarm indicator.                                |
| 3. RH digital multifunction display. | 15. LH parameter select/adjust knob.                          |
| 4. Arc length indicator.             | 16. RH parameter select/adjust knob.                          |
| 5. Inductance indicator.             | 17. JOB button.   |
| 6. Material thickness indicator.     | 18. Program save/delete button.                               |
| 7. Wire feed indicator.              | 19. Function button.  |
| 8. LH digital multifunction display. | 20. Trigger mode select button:<br>Select 2T/4T/S4T/Spot Weld |
| 9. Welding current indicator.        | 21. Manual wire feed button.                                  |
| 10. JOB indicator.                   | 22. Welding process select button.                            |
| 11. Power "ON" indicator.            | 23. Manual shield gas check button.                           |
| 12. Water cooler alarm               |   |



# Functions, Program Selection & Settings

Display for Function	
Display Code	Function
PrG	Pre Gas
PoG	Post Gas
SfT	Slow Feed Time
bub	Burn Back
SPT	Spot Weld Time
dPC	Delta Pulse Current
FdP	Double Pulse Frequency
dut	Double Pulse Duty
bAL	Double Pulse Base Current Arc Length
SCP	Start Current Percent
SAL	Start Current Arc Length
ECP	End Current Percent
EAL	End Current Arc Length
SPG	Spool Gun
HSt	HOT START
ACF	ARC FORCE
dSL	DOWN SLOPE

## DISPLAY FUNCTIONS & PULSE MIG WELDING PROGRAMS

NOTE: Optional Spool Gun Functions in MANUAL mode only!

Synergic Non-Pulse Program List			
Program code	Material	Wire Dia(mm)	Gas
P1	Solid Fe	0.6	Ar 80% +CO <sub>2</sub> 20%
P2	Solid Fe	0.8	Ar 80% +CO <sub>2</sub> 20%
P3	Solid Fe	0.9	Ar 80% +CO <sub>2</sub> 20%
P4	Solid Fe	1.2	Ar 80% +CO <sub>2</sub> 20%
P5	SS ER316	0.8	Ar 98% + CO <sub>2</sub> 2%
P6	SS ER316	0.9	Ar 98% + CO <sub>2</sub> 2%
P7	SS ER316	1.2	Ar 98% + CO <sub>2</sub> 2%
P8	CuSi3	0.8	Ar 100%
P9	CuSi3	0.9	Ar 100%
P10	CuSi3	1.2	Ar 100%
P11	AlMg5	0.8	Ar 100%
P12	AlMg5	0.9	Ar 100%
P13	AlMg5	1.2	Ar 100%

Synergic S & D Pulse Program List			
Program code	Material	Wire Dia(mm)	Gas
P1	AlMg5	0.8	Ar 100%
P2	AlMg5	0.9	Ar 100%
P3	AISI5	0.8	Ar 100%
P4	AlMg5	1.2	Ar 100%
P5	AISI5	0.9	Ar 100%
P6	AISI5	1.2	Ar 100%
P7	Al99.5	1.2	Ar 100%
P8	Solid Fe	0.6	Ar 80% +CO <sub>2</sub> 20%
P9	Solid Fe	0.8	Ar 80% +CO <sub>2</sub> 20%
P10	Solid Fe	0.9	Ar 80% +CO <sub>2</sub> 20%
P11	Solid Fe	1.2	Ar 80% +CO <sub>2</sub> 20%
P12	SS ER316	0.8	Ar 98% + CO <sub>2</sub> 2%
P13	SS ER316	0.9	Ar 98% + CO <sub>2</sub> 2%
P14	CuSi3	0.9	Ar 100%
P15	CuSi3	1.2	Ar 100%

## MIG WELDING SETTING CHART

Material	Suggested Shielding Gases And Flow Rate	Wire Sizes (Diameters)	Voltage/IPM							
			1/2" (12.7mm)	3/8" (9.5mm)	1/4" (6.4mm)	3/16" (4.8mm)	1/8" (3.2mm)	14ga (2.0mm)	18ga (1.2mm)	22ga (0.8mm)
AlMg5 (ER5356)	100% Ar 25cfh	0.030"(0.8mm)					17.8/791	17.4/716	15.9/531	14.6/334
		0.035"(0.9mm)		17.8/704	17.6/649	17.1/566	16.2/511	15.9/484	14.9/377	13.4/248
		0.047"(1.2mm)	20.0/570	18.7/511	17.5/464	16.8/393	16.3/366	15.2/275	14.5/224	13.3/161
CuSi3	100% Ar 25cfh	0.030"(0.8mm)					12.3/562	11.7/366	11.5/271	10.5/165
		0.035"(0.9mm)					14.0/366	13.4/322	12.9/236	11.8/129
		0.047"(1.2mm)			19.8/417	16.3/322	13.8/244	13.2/208	12.8/177	11.5/86
Solid Fe (ER70S6)	80% Ar/20% CO <sub>2</sub> 25cfh	0.023"(0.6mm)				20.0/480	18.4/350	18.1/240	17.0/188	15.8/125
		0.030"(0.8mm)		24.3/500	21.0/397	19.0/291	17.9/248	17.4/200	16.3/114	15.9/94
		0.035"(0.9mm)		26.0/472	21.0/374	18.3/263	17.4/228	16.5/188	15.8/118	14.9/86
SS ER316	98% Ar/2% CO <sub>2</sub> 25cfh	0.047"(1.2mm)			26.5/259	20.0/224	17.4/192	17.1/188	16.5/165	15.5/94
		0.030"(0.8mm)					21.0/669	17.7/354	16.1/224	14.1/86
		0.035"(0.9mm)				22.8/570	18.4/362	16.7/267	13.8/102	
AISI5 (ER4043)	100% Ar 25cfh	0.047"(1.2mm)			22.5/374	18.7/267	17.0/177	15.7/122	14.6/74	
		0.030"(0.8mm)			24.5/618	22.6/542	20.5/468	17.5/448	16.7/267	14.3/118
		0.035"(0.9mm)		23.5/700	23.0/531	21.5/448	19.3/381	18.2/299	15.6/153	15.3/118
Al99.5	100% Ar 25cfh	0.047"(1.2mm)	24.0/476	23.5/433	23.0/374	21.4/303	19.6/251	17.1/114	15.9/59	15.6/43
						23.5/334	21.8/259	19.9/173	17.4/78	16.2/55

Voltage/IPM



# Accessories & Consumables

## ACCESSORIES

### HSL MIG Torches

#### HSL15-10SB



Torch for silicone bronze wire with euro-connect machine plug.

#### HSL25-10



Torch for all steel alloy wire with euro-connect machine plug.

#### HSL26-10A



Torch for aluminum alloy Wire with euro-connect machine plug.

### HSP26 Spool Gun

#### HSW-7020



Compact 226 amp spool gun perfect for all types of welding wire from .023" to .045". Heavy duty 60% duty-cycle with 20' coaxial cable.

### HST TIG Torch

#### HSW-7016



Torch with thumb-wheel Potentiometer, direct-connect cable and gas line with circular control plug.

### HST TIG Foot Pedal Control

#### HSW-7009



Heavy duty TIG foot pedal control for ON/OFF and amp adjustment on 16.5' cable with circular 9-pin plug.

### HSL15 Consumables

- 140N0008 HSL15 Contact Tip .023 10-PAK
- 140N0059 HSL15 Contact Tip .030 10-PAK
- 140N0177 HSL15 Contact Tip .035 10-PAK
- 145N0123 HSL15 Nozzle 3/8"
- 145N0075 HSL15 Nozzle 1/2"
- 145N0041 HSL15 Nozzle 5/8"
- 002N0078 HSL15 Contact Tip Holder Diffusor

### HSL25 Consumables

- 140N0051 HSL25 Contact Tip .030" 10-PAK
- 140N0169 HSL25 Contact Tip .035" 10-PAK
- 140N0379 HSL25 Contact Tip .045" 10-PAK
- 145N0124 HSL25 Nozzle 3/8"
- 145N0076 HSL25 Nozzle 1/2"
- 145N0042 HSL25 Nozzle 5/8"
- 142N0001 HSL25 Contact Tip Holder Diffusor

### HSL26 Consumables

- 140N0005 HSL26 Contact Tip .023" 10-PAK
- 140N0051 HSL26 Contact Tip .030" 10-PAK
- 140N0169 HSL26 Contact Tip .035" 10-PAK
- 140N0379 HSL26 Contact Tip .045" 10-PAK
- 140N0516 HSL26 Contact Tip .052" 10-PAK
- 142N0012 HSL26 Contact Tip Holder
- 145N0132 HSL26 Nozzle 1/2"
- 145N0085 HSL26 Nozzle 5/8"
- 145N0051 HSL26 Nozzle 3/4"
- 142N0012 HSL26 Contact Tip Holder Diffusor
- 018N0004 HSL26 Contact Tip Insulator

### Wire Feed Drive Rolls

- 521.2535 DRIVE ROLL .023" - .035" V-Groove
- 521.2536 DRIVE ROLL .030" - .040" V-Groove
- 521.2537 DRIVE ROLL .040" - .045" V-Groove
- 521.2538 DRIVE ROLL .030" - .035" U-Groove
- 521.2539 DRIVE ROLL .040" - .045" U-Groove

### Torch Liners & Kit

- 124N0015 HSL Liner .023"-.035" Steel (16.5')
- 124N9003 HSL Liner .045"-.052" Steel (16.5')
- 126N9002 HSL Liner .030"-.035" AL & SB (11.5')
- 126N9005 HSL Liner .045"-.052" AL & SB (11.5')
- AK-2 HST17 TIG Torch Consumable Kit

### Welding Wires

- HSW-9023 ER70S Steel .023" 2# (4")
- HSW-9023-11 ER70S Steel .023" 11# (8")
- HSW-9030 ER70S Steel .030" 2# (4")
- HSW-9030-11 ER70S Steel .030" 11# (8")
- HSW-9035 ER70S Steel .035" 2# (4")
- HSW-9035-11 ER70S Steel .035" 11# (8")
- HSW-9230 ErCuSi Si-Bronze .030" 2# (4")
- HSW-9230-11 ErCuSi Si-Bronze .030" 11# (8")
- HSW-9235 ErCuSi Si-Bronze .035" 2# (4")
- HSW-9235-11 ErCuSi Si-Bronze .035" 11# (8")
- HSW-9245 ErCuSi Si-Bronze .045" 2# (4")
- HSW-9245-11 ErCuSi Si-Bronze .045" 11# (8")
- HSW-9330 ER308L-SS .030" 2# (4")
- HSW-9335 ER308L-SS .035" 2# (4")
- HSW-9430 ER4043-AL .030" 1# (4")
- HSW-9430-3 ER4043-AL .030" 3# (8")
- HSW-9435 ER4043-AL .035" 1# (4")
- HSW-9435-3 ER4043-AL .035" 3# (8")
- HSW-9445 ER4043-AL .045" 1# (4")
- HSW-9445-3 ER4043-AL .045" 3# (8")
- HSW-9530 ER5356-AL .030" 1# (4")
- HSW-9530-3 ER5356-AL .030" 3# (8")
- HSW-9535 ER5356-AL .035" 1# (4")
- HSW-9535-3 ER5356-AL .035" 3# (8")
- HSW-9545 ER5356-AL .045" 1# (4")
- HSW-9545-3 ER5356-AL .045" 3# (8")
- HSW-9645-16 ER5554-AL .047" 16# (12")

### Tungsten Electrodes

- TC-7020 HSW Tungsten 2% Ceriated .020" X 7" (10-Pak)
- TC-7040 HSW Tungsten 2% Ceriated .040" X 7" (10-Pak)
- TC-7116 HSW Tungsten 2% Ceriated 1/16" X 7" (10-Pak)
- TC-7332 HSW Tungsten 2% Ceriated 3/32" X 7" (10-Pak)
- TC-7180 HSW Tungsten 2% Ceriated 1/8" X 7" (10-Pak)



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