

# Gold Star® Series

Issued Dec. 2010 • Index No. DC/8.1

Stick Welding  
Power Source 

## Quick Specs



### Heavy Industrial Applications

Steel Erection  
Pipe Welding  
Tank/Pressure Vessel Fabrication  
Maintenance/Repair  
Shipbuilding  
Construction  
Refineries  
Chemical Manufacturing Facilities  
Steel Manufacturing Facilities  
Foundries

### Processes

Stick (SMAW)  
TIG (GTAW)  
Air Carbon Arc (CAC-A)  
Cutting and Gouging  
Flux Cored (FCAW)  
MIG (GMAW) Spray  
Transfer when using  
a Voltage-Sensing  
Wire Feeder

**Input Power** 3-Phase Power on all models

**Rated Output** **302/402:** 300 A at 32 VDC, 60% Duty Cycle  
**452/602:** 450 A at 38 VDC, 60% Duty Cycle  
**652/852:** 650 A at 44 VDC, 60% Duty Cycle

**Weight** **302/402:** 352 lb (160 kg)  
**452/602:** 404 lb (183 kg)  
**652/852:** 505 lb (229 kg)

## The Power of Blue.®

**Superior arc welding performance** with Stick and TIG welding.

**Built-in arc control** lets you get in tight without sticking the electrode. An electrode compensation circuit ensures consistent arc control performance regardless of the electrode size.

**Hot Start™** makes it easy to start difficult Stick electrodes such as E-6010 and E-7018.

**Line voltage compensation** ensures consistent weld performance by keeping output power constant even if primary input power varies by  $\pm 10\%$ .

**Power efficient** for exceptional value and return on your investment.

**115 VAC duplex receptacle** provides 15 amps of auxiliary power.

**Thermal overload protection** light indicates power shutdown. Helps prevent machine damage if the duty cycle is exceeded or airflow is blocked.



Gold Star 452/602

**Fan-On-Demand™** operates only when needed reducing noise, power consumption, and the amount of airborne contaminants pulled through the machine.



Build your own system at  
[MillerWelds.com/equiptoweld](http://MillerWelds.com/equiptoweld)

**Optional digital meters** for voltage and amperage. Large displays are easy to read, even at 30 ft (9.2 m).

**Simple control panel** features single range amperage adjustment. Provides easy, efficient operation.

**14-pin receptacle** provides quick, direct connection to Miller 14-pin remote controls and switches.

**Enclosed circuit boards** provide additional protection from contaminants resulting in longer service life.

**PC board protection** prevents the wire feeder power or other stray voltages (less than 115 VAC) from harming the power source PC board.

**Power cord strain relief** provided for your convenience at installation.



Power source is warranted for 3 years, parts and labor.  
Original main power rectified parts are warranted for 5 years.

MADE IN **USA**  
APPLETON, WI



**Miller Electric Mfg. Co.**  
An Illinois Tool Works Company  
1635 West Spencer Street  
Appleton, WI 54914 USA

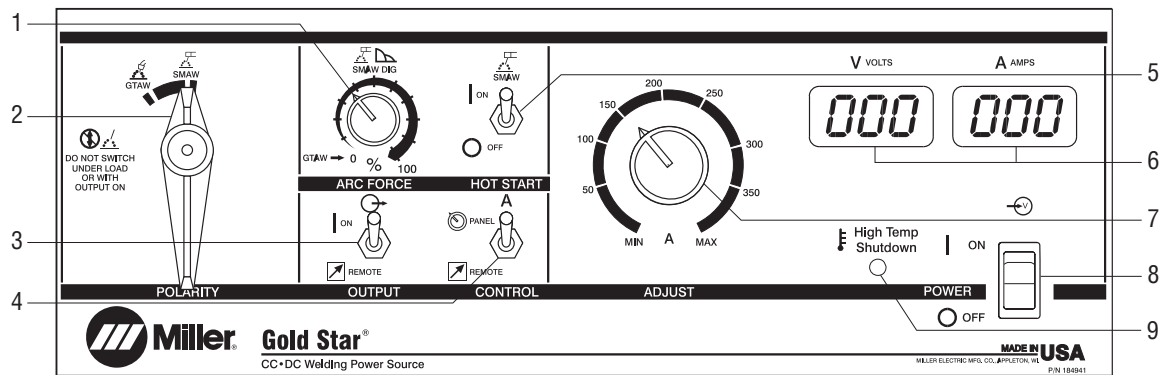
**Equipment Sales US and Canada**  
Phone: 866-931-9730  
FAX: 800-637-2315  
International Phone: 920-735-4554  
International FAX: 920-735-4125

**Web Site**  
[www.MillerWelds.com](http://www.MillerWelds.com)



Rated Output	Amperage Range	Amps Input at Rated Output, 50/60 Hz										Max. Open-Circuit Voltage	Dimensions	Net Weight
		200 V	230 V	380 V	400 V	440 V	460V	575 V	KVA	KW				
300 A at 32 VDC, 60% Duty Cycle	15-395 A	70	61	35	33	31	31	25	24.5	13.8		72 VDC	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 30-1/2 in (775 mm) including strain relief	352 lb (160 kg)

## Control Panel

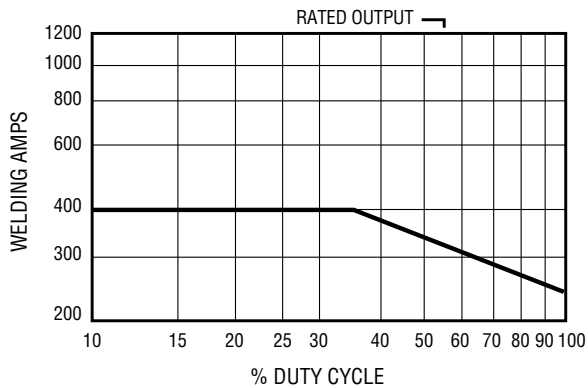


1. Arc Force (DIG) Control
2. Polarity Selector Switch\*
3. Output Switch (Contactor)
4. Remote Amperage Control Switch
5. Hot Start Switch
6. Digital Meters (Optional)
7. Amperage Adjustment Control
8. Power Switch with Indicator Light
9. High Temperature Shutdown Light

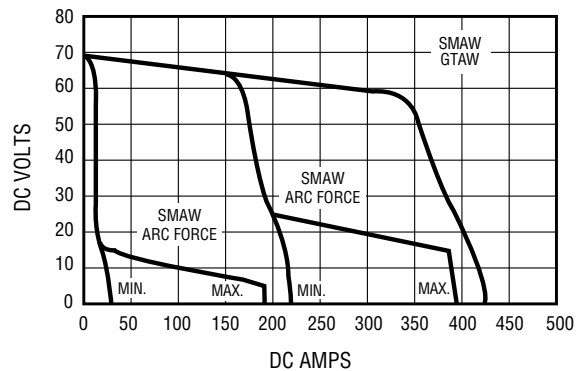
\*Note: Polarity Selector Switch is not standard on 402 model.

## Performance Data

DUTY CYCLE CHART

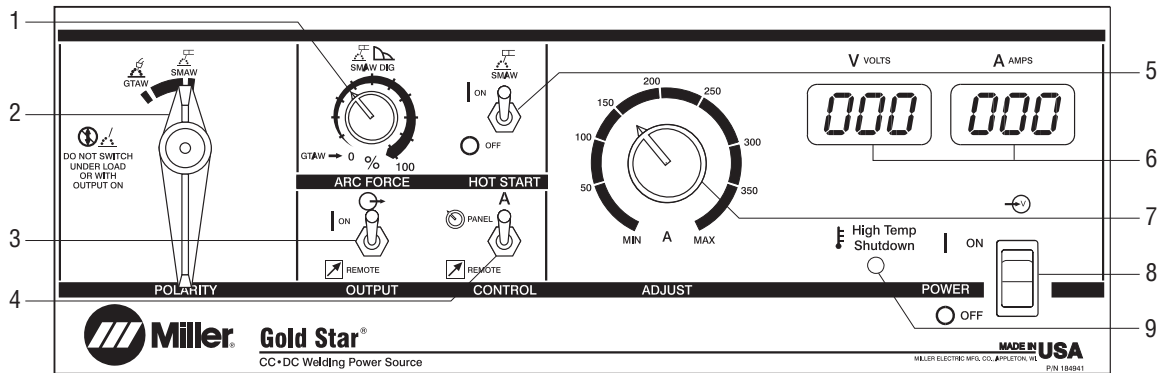


VOLT/AMP CURVE CC



Rated Output	Amperage Range	Amps Input at Rated Output, 50/60 Hz										Max. Open-Circuit Voltage	Dimensions	Net Weight
		200 V	230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW				
450 A at 38 VDC, 60% Duty Cycle	20–590 A	102	89	54	51	47	45	36	35.5	23.3		72 VDC	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 38 in (966 mm) including strain relief	404 lb (183 kg)

## Control Panel

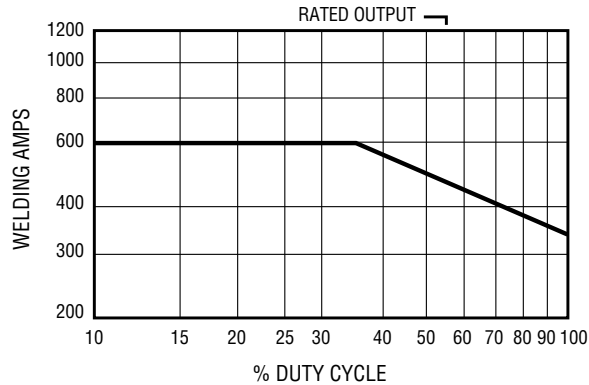


- 1. Arc Force (DIG) Control
- 2. Polarity Selector Switch\*
- 3. Output Switch (Contactor)
- 4. Remote Amperage Control Switch
- 5. Hot Start Switch
- 6. Digital Meters (Optional)
- 7. Amperage Adjustment Control
- 8. Power Switch with Indicator Light
- 9. High Temperature Shutdown Light

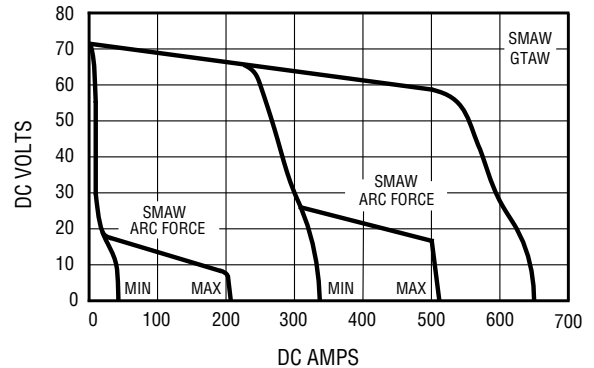
\*Note: Polarity Selector Switch is not standard on 602 model.

## Performance Data

**DUTY CYCLE CHART**

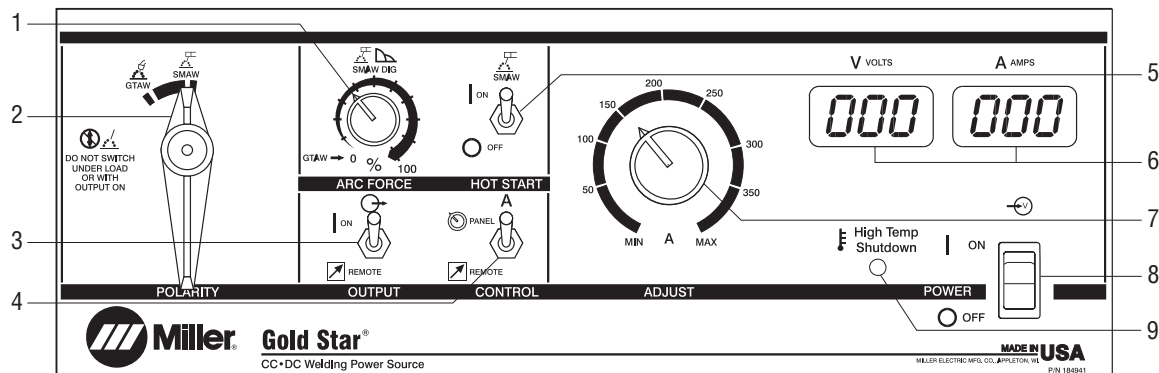


**VOLT/AMP CURVE CC**



Rated Output	Amperage Range	Amps Input at Rated Output, 50/60 Hz								Max. Open-Circuit Voltage	Dimensions	Net Weight
		230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW			
650 A at 44 VDC, 60% Duty Cycle	50-850 A	124	75	71	65	62	50	49.4	36	72 VDC	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: 38 in (966 mm) including strain relief	505 lb (229 kg)

## Control Panel

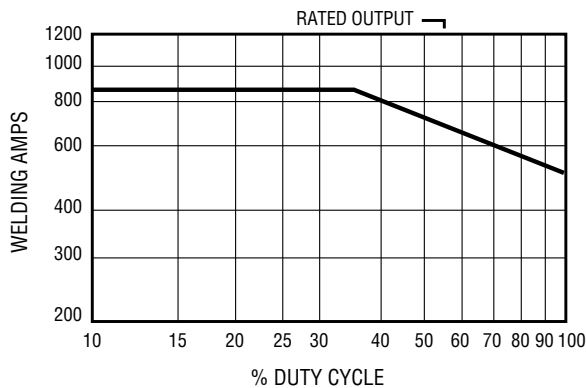


- 1. Arc Force (DIG) Control
- 2. Polarity Selector Switch\*
- 3. Output Switch (Contactor)
- 4. Remote Amperage Control Switch
- 5. Hot Start Switch
- 6. Digital Meters (Optional)
- 7. Amperage Adjustment Control
- 8. Power Switch with Indicator Light
- 9. High Temperature Shutdown Light

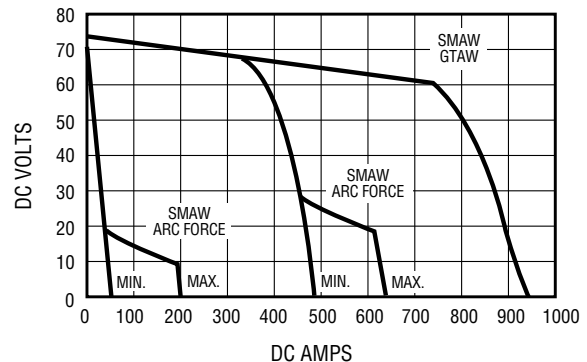
\*Note: Polarity Selector Switch is not standard on 852 model.

## Performance Data

**DUTY CYCLE CHART**



**VOLT/AMP CURVE CC**



## Genuine Miller Options

**Digital Meters #300 359** Field  
For Gold Star models after serial #  
KG 283 595. Easy-to-install, front-panel-  
mount, digital amp and volt meters.

**Air Filter Kit #042 939** Field  
Helps protect internal components from  
dust and dirt, reducing need for maintenance  
and providing extended service life.

**Polarity Switch #043 314** Field  
For Gold Star 602 and 852. Allows  
operators to switch from DCRP or DCEN  
for TIG or Stick applications without  
removing cables.

**Ground Current Sensor #195 048** Field  
Disables power source if weld current is  
present on primary ground.

## Genuine Miller Accessories

**2/0 Stick Cable Set (50 ft) #173 851**  
Consists of 50 ft (15.2 m) 2/0 electrode  
cable with holder and 50 ft (15.2 m) work  
cable with clamp. 350 A, 100% duty cycle.



**HF-251D-1 High-Frequency Arc  
Starter/Stabilizer #042 388**  
This portable 250 amp, 60% duty cycle unit  
adds high frequency to the welding circuit  
to help start the arc when using the TIG  
(GTAW) process. Operates on 115 VAC  
50/60/100 Hz. See Lit. Index No. AY 5.1.

**Process Control Selector #042 872**  
Allows you to easily change weld processes  
from TIG to Stick without changing cables.  
Can be used with any constant-current,  
constant-voltage or multiprocess CC/CV  
welding power source.



**Standard Running Gear #042 886**  
The large 10 in (254 mm) rear wheels and  
5 in (127 mm) front casters on this running  
gear provide excellent mobility on the shop  
floor, making it easier to move the power  
source around and over cables and cracks.  
Very easy to install. Handles double as weld  
cable holder.

**Standard Cylinder Rack #042 887**  
Holds two cylinders. Only installs on  
Standard Running Gear.

## Coolant Systems

For more information, see Miller Coolant  
Systems Lit. Index No. AY/7.2.



## Remote Controls and Switches

### Remote On/Off Control #242 197 025

Allows you to turn your Gold Star on or off from a distance of 25 ft (7.6 m). This is especially useful if your power source is located up in a mezzanine. Connects to the power source's terminal strip.



### RMLS-14 #129 337

Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and backward for momentary contact. Includes 26.5 ft (8 m) cord and 14-pin plug.



### RCC-14 Remote Contactor and Current Control #151 086

Side-to-side (east/west) rotary-motion fingertip control. Fastens to TIG torch using two Velcro® straps. Allows complete current and contactor control at operator's fingertips. Includes 26.5 ft (8 m) cord and 14-pin plug.



### RCCS-14 Remote Contactor and Current Control #043 688

Up-and-down (north/south) rotary-motion fingertip control. Fastens to TIG torch using two Velcro® straps. Great for applications that require a finer amperage control. Includes 26.5 ft (8 m) cord and 14-pin plug.



### RHC-14 Hand Control\*

#242 211 020 20 ft (6 m) cord

#242 211 100 100 ft (30.5 m) cord

Miniature hand control for remote current and contactor control. Dimensions: 4 x 4 x 3-1/4 in (102 x 102 x 82 mm). Includes cord and 14-pin plug.

*\*Custom lengths available in 5 ft increments up to 50 ft and 10 ft increments up to 100 ft.*



### RFCS-14 Foot Control #043 554

Foot current and contactor control. Includes 20 ft (6 m) cord and 14-pin plug.

### Extension Cables for 14-Pin Plugs to 14-Pin Sockets\*

#242 208 025 25 ft (7.6 m)

#242 208 050 50 ft (15.2 m)

#242 208 080 80 ft (24.4 m)

Extension cables make a direct connection between the power source and remote control or 24 VAC wire feeder. No messy splicing or adapting required.

*\*Custom lengths available in 5 ft increments up to 50 ft and 10 ft increments up to 100 ft.*

## Wire Feeders



### SuitCase® X-TREME™ 8VS Wire Feeder #951 181

### SuitCase® X-TREME™ 12VS Wire Feeder #951 184

Lightweight, voltage-sensing wire feeders include secondary contactor, gas valve and drive roll kit. See Lit. Index No. M/6.41.





# Ordering Information

Equipment and Options	Stock No.	Description	Qty.	Price
<b>Power Source</b>				
Gold Star® 302	#903 373* #903 398*	200-208/230/460 V, 60 Hz 230/460/575 V, 60 Hz		
Gold Star® 402	#907 362**	380/400/440 V, 50 Hz w/CE		
Gold Star® 452	#903 374* #903 400*	200-208/230/460 V, 60 Hz 230/460/575 V, 60 Hz		
Gold Star® 602	#907 363**	380/400/440 V, 50 Hz w/CE		
Gold Star® 652	#903 402*	230/460/575 V, 60 Hz		
Gold Star® 852	#907 364**	380/400/440 V, 50 Hz w/CE		
Digital Meters	#300 359	Field. For models after serial # KG 283 595		
Air Filter Kit	#042 939	Field		
Ground Current Sensor	#195 048	Field		
Polarity Switch	#043 314	Field. For Gold Star 602 and 852		
<b>Stick Accessories</b>				
2/0 Stick Cable Set (50 ft)	#173 851	Consists of electrode cable with holder and work cable with clamp		
Stick Electrodes				
<b>TIG Accessories</b>				
HF-251D-1	#042 388	HF Arc Starter/Stabilizer. See Lit. Index No. AY/5.1		
Torch, Tungsten and Consumables				
Gas Cylinder, Gas Hose and Fittings				
<b>Remote Controls</b>				
Remote On/Off	#242 197 025			
RMLS-14	#129 337	Rocker switch		
RCC-14	#151 086	Fingertip control (side to side)		
RCCS-14	#043 688	Fingertip control (up and down)		
RHC-14	#242 211 020 #242 211 100	Hand control with 20 ft (6 m) cord Hand control with 100 ft (30.5 m) cord		
RFCS-14	#043 554	Foot control		
Extension Cables		See page 6		
<b>Wire Feeders</b>				
SuitCase® X-TREME™ 8VS	#951 181	See Lit. Index No. M/6.41		
SuitCase® X-TREME™ 12VS	#951 184	See Lit. Index No. M/6.41		
<b>Miscellaneous</b>				
Process Control Selector	#042 872			
Standard Running Gear	#042 886			
Standard Cylinder Rack	#042 887			
Coolant Systems		See Lit. Index No. AY/7.2		
Primary Power Cable				
Secondary Welding Cables				
Work Cable and Clamp				

Date:

Total Quoted Price:

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

\*\*  50 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.  
All CE models conform to the applicable parts of the IEC 60974 series of standards.  
Conforms with NEMA EW 1 "Electric Arc Welding Power Source," Class I (100).

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