

# Gold Star® Series

Issued January 2003 • 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** 302/402: 3-Phase Power  
452/602: 3-Phase Power  
652/852: 3-Phase Power

**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 easier to start difficult-to-start Stick electrodes such as E-6010 and E-7018.

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

**Optional large meters** with digital voltmeter and ammeter are easy to read, even at 30 ft (9.2 m).

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

**14-pin receptacle** provides quick, direct connection to Miller 14-pin wire feeders and accessories.



Gold Star 452/602

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

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

**Fan-On-Demand™** operates only when needed reducing both noise and power consumption.

**Protected circuit boards** have plastic enclosures that protect internal circuit boards from dust and dirt. Results in longer service life.

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

**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 **USA**



**Miller Electric Mfg. Co.**  
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**Web Site**  
www.MillerWelds.com



# Gold Star® 302/402 Specifications (Subject to change without notice.)

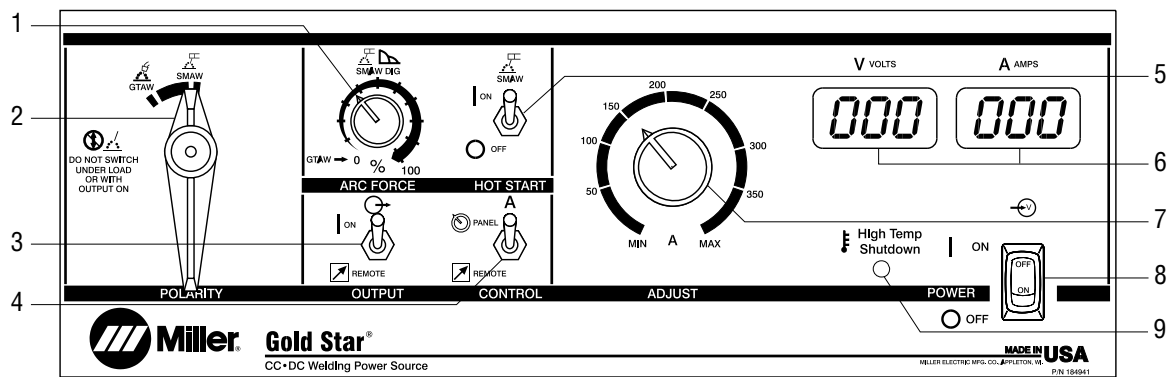


Rated Output	Amperage Range	Max. Open-Circuit Voltage	Amps Input at Rated Output, 50/60 Hz										Dimensions	Net Weight
			200 V	230 V	380 V	400 V	440 V	460V	575 V	KVA	KW			
300 A at 32 VDC, 60% Duty Cycle	15–395 A	72 VDC	70	61	35	33	31	31	25	24.5	13.8	H: 30 in (762 mm) including lift eye W: 23 in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

Gold Star 302 and 402 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

## Control Panel

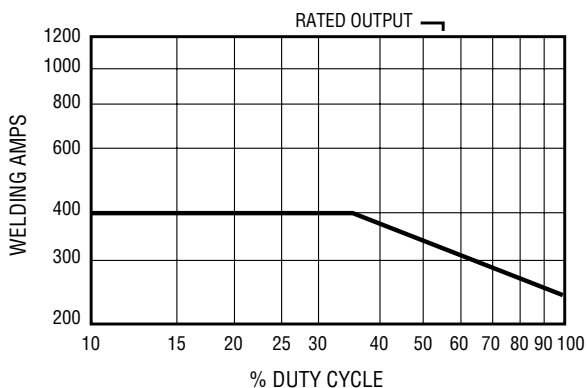


1. Arc Force (DIG) Control
2. Polarity Selector Switch\*
3. Output Switch (Contactor)
4. Remote Amperage Control Switch
5. Hot Start Switch
6. Digital Meters (Optional)
7. Amperage Adjustment Control
8. Power Switch with Indicator Light
9. High Temperature Shutdown Light

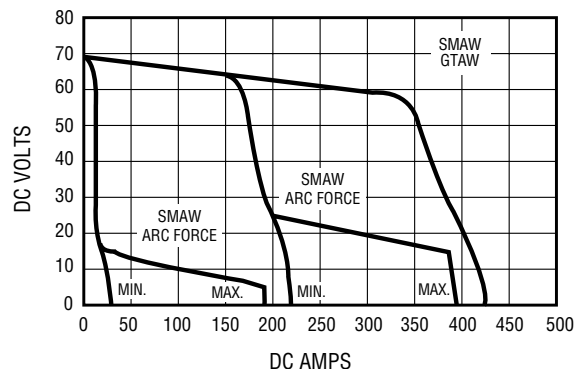
\*Note: Polarity Selector Switch is not standard on 402 model.

## Performance Data

**DUTY CYCLE CHART**



**VOLT/AMP CURVE CC**

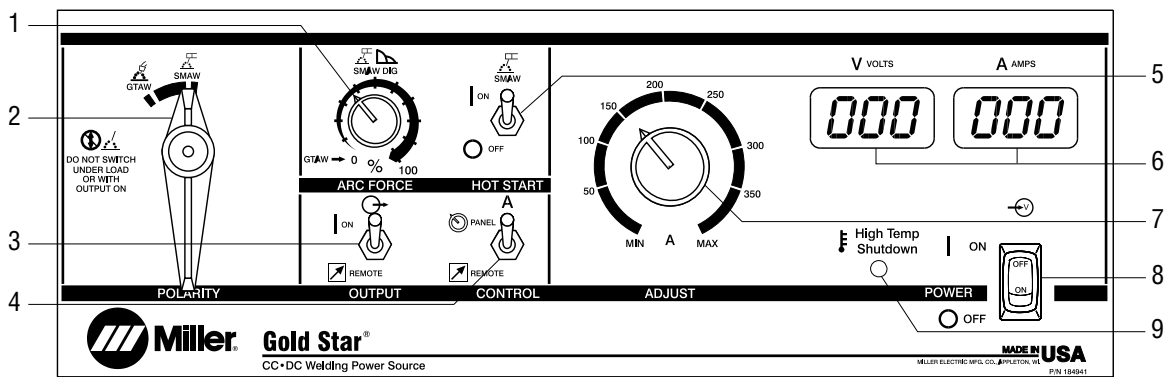


Rated Output	Amperage Range	Max. Open-Circuit Voltage	Amps Input at Rated Output, 50/60 Hz										Dimensions	Net Weight
			200 V	230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW			
450 A at 38 VDC, 60% Duty Cycle	20–590 A	72 VDC	102	89	54	51	47	45	36	35.5	23.3	H: 30 in (762 mm) including lift eye W: 23 in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

Gold Star 452 and 602 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

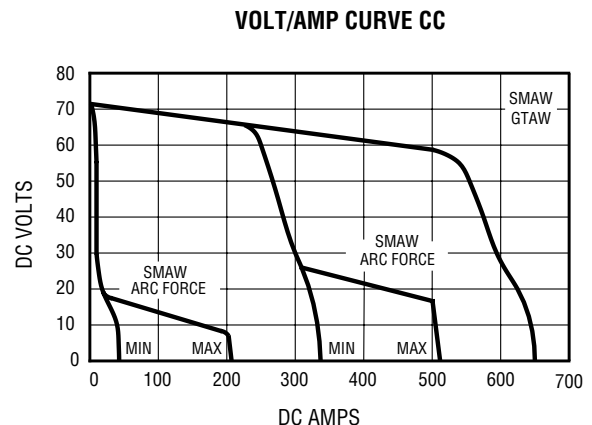
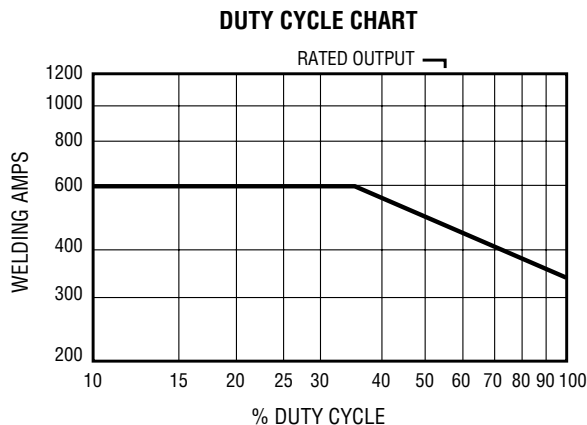
## Control Panel



- 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

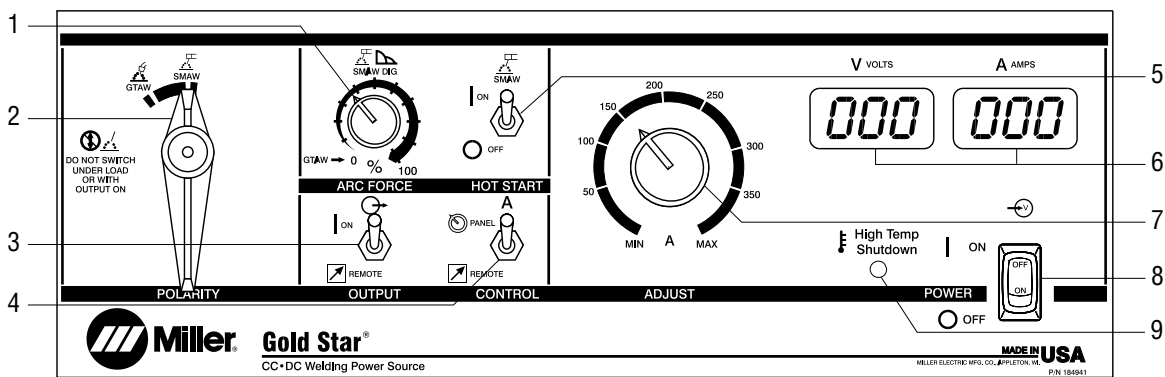


Rated Output	Amperage Range	Max. Open-Circuit Voltage	Amps Input at Rated Output, 50/60 Hz								Dimensions	Net Weight
			230 V	380 V	400 V	440 V	460 V	575 V	KVA	KW		
650 A at 44 VDC, 60% Duty Cycle	50–850 A	72 VDC	124	75	71	65	62	50	49.4	36	H: 30 in (762 mm) including lift eye W: 23 in (585 mm) D: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

Gold Star 652 and 852 (without CE) certified by Canadian Standards Association to both Canadian and U.S. Standards.

50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.

## Control Panel

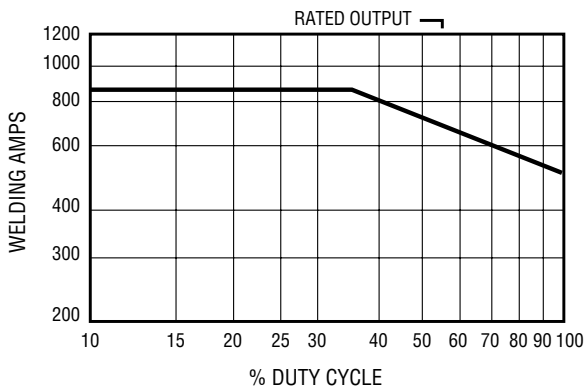


- 1. Arc Force (DIG) Control
- 2. Polarity Selector Switch\*
- 3. Output Switch (Contactor)
- 4. Remote Amperage Control Switch
- 5. Hot Start Switch
- 6. Digital Meters (Optional)
- 7. Amperage Adjustment Control
- 8. Power Switch with Indicator Light
- 9. High Temperature Shutdown Light

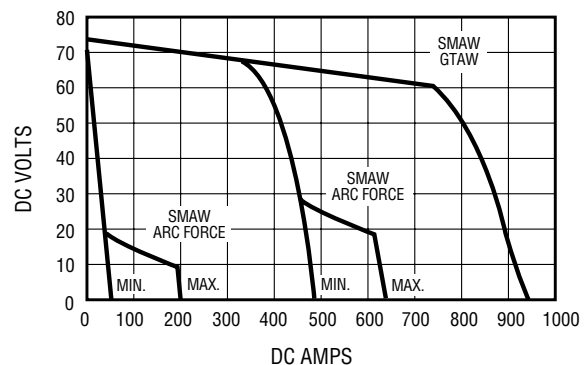
\*Note: Polarity Selector Switch is not standard on 852 model.

## Performance Data

DUTY CYCLE CHART



VOLT/AMP CURVE CC



## Genuine Miller Options

### Digital Meters

#### #042 967 Field

For Gold Star models before serial no. KG 283 595.

#### #043 812 Field

For Gold Star models after serial no. 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.

#### Ground Current Sensor #195 048 Field

Disables power source if weld current is present on primary ground.

### Polarity Switch

#### #043 313 Field For Goldstar 402

#### #043 314 Field For Goldstar 602 and 852

Allows operators to switch from DCRP or DCEN for TIG or Stick applications without removing cables.

## Genuine Miller Accessories

### 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.



### Cylinder Rack/Lift #043 005

Miller's patent pending cylinder rack features a lift which moves the cylinders up onto the rack and into position without manual lifting! The rack accommodates two cylinder bottles, and can be attached directly to the Standard Running Gear.

### Standard Cylinder Rack #042 887

Holds two cylinders. Only installs on Standard Running Gear.



### Rough Terrain Running Gear #043 043

This two-wheel running gear features pneumatic tires for extra mobility. Handles double as a cable holder. (Not compatible with cylinder rack.)

### International Cable Adapter

*Note: Order from Miller Service Parts*

#### #168 077 Female, Qty 1

Dinse brand insulated female twist lock connector installs on output stud, providing quick disconnect of secondary weld cables.

#### #042 418 Male, Qty 1

Cable-mounted Dinse brand insulated male twistlock connector accepts #1 or #2 AWG cable sizes.

### Stick Hook-Up Kit #173 851

50 ft (15.2 m) 2/0 cable. Kit includes electrode holder, weld cable and work cable with clamp.

## Water Coolant Systems

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



### Coolmate 3

#### #043 007 115 VAC

#### #043 008 230 VAC

For use with water-cooled torches rated up to 600 amps. Unique paddle-wheel indicator, external filter and easy fill spout.

### Coolmate V3 #043 009 115 VAC

For use with water-cooled torches rated up to 500 amps. Vertical design conveniently mounts to Miller cylinder rack in place of one cylinder.

### Coolmate 4 #042 288

For use with water-cooled torches rated up to 600 amps. Tough molded polyethylene case with carrying handle.

### Coolant #043 810

Sold in cases of four 1-gallon recyclable plastic bottles. Miller coolants contain a base of ethylene glycol and deionized water to protect against freezing to -37°F (-38°C) or boiling to 227°F (108°C). Also contains a compound that resists algae growth.



**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.



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

Up-and-down rotary-motion fingertip control. Great for applications that require a finer amperage control. Includes 28 ft (8.5 m) control cord.



**RHC-14 Hand Control #129 340**

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 20 ft (6 m) cord and 14-pin plug.



**RMLS-14 #129 337**

Momentary- and maintained-contact rocker switch for contactor control. Push forward for maintained contact and back for momentary contact. Includes 20 ft (6 m) cord and 14-pin plug.



**RFCS-14 Foot Control #043 554**

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



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

Rotary-motion (side to side) fingertip control. Fastens to TIG torch using two Velcro strips. Allows complete current and contactor control at operator's fingertips. Includes 28 ft (8.5 m) cord and plug.

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

**#122 973** 25 ft (7.6 m)

**#122 974** 50 ft (15.2 m)

**#122 975** 75 ft (22.8 m)

Extension cords make a direct connection between the power source and the accessory control. No messy splicing or adapting required.

## Wire Feeders



**S-32S Wire Feeder #088 816**

A portable, voltage-sensing wire feeder for .035–5/64 in. (0.6–2.0 mm) flux cored wire. See Lit. Index No. M/6.21.



**S-32SL Wire Feeder #109 294**

A portable, voltage-sensing wire feeder for 5/64–7/64 in. (2.0–2.8 mm) flux cored wire. See Lit. Index No. M/6.21.



**Super S-32P Wire Feeder #159 928**

A compact, portable, voltage-sensing wire feeder for .035–5/64 in (0.6–2.0 mm) flux cored wire. See Lit. Index No. M/6.3.



**SuitCase 8VS™ #194 890**

**SuitCase 12VS™ #194 941**

Lightweight, portable wire feeder for a variety of wires up to .062 in. Holds up to an 8 in or 12 in spool of wire. See Lit. Index No. M/6.4.





# 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	#903 399* #903 399-01-3**	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 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	#903 401* #903 401-01-6**	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 Hz w/CE		
Gold Star® 652	#903 402*	230/460/575 V, 60 Hz		
Gold Star® 852	#903 403* #903 403-01-4**	380/400/440 V, 50/60 Hz 380/400/440 V, 50/60 Hz w/CE		
Digital Meters	#042 967 #043 812	Field. For models before serial no. KG 283 595 Field. For models after serial no. KG 283 595		
Air Filter Kit	#042 939	Field		
Ground Current Sensor	#195 048	Field		
Polarity Switch	#043 313 #043 314	For Goldstar 402 For Goldstar 602 and 852		
<b>Stick Accessories</b>				
Stick Hook-Up Kit	#173 851	2/0 cable, 50 ft. Includes electrode holder, weld cable 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	#042 869			
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	#129 340	Hand control		
RFCS-14	#043 554	Foot control		
Extension Cables		See pg. 6		
<b>Wire Feeders</b>				
S-32S/S-32SL	#088 816/109 294	See Lit. Index No. M/6.21		
Super S-32P	#159 928	See Lit. Index No. M/6.3		
SuitCase 8VS/SuitCase 12VS	#194 890/194 941	See Lit. Index No. M/6.4		
<b>Miscellaneous</b>				
Process Control Selector	#042 872			
Standard Running Gear	#042 886			
Rough Terrain Running Gear	#043 043			
Cylinder Rack/Lift	#043 005			
Standard Cylinder Rack	#042 887			
International Cable Adapter (Order from Miller Service Parts)	#042 418 #168 077	Male Female		
Coolmate™ 3	#043 007 #043 008	115 VAC 230 VAC		
Coolmate™ V3	#043 009	115 VAC		
Coolmate™ 4	#042 288			
Coolant	#043 810			
Primary Power Cable				
Secondary Welding Cables				
Work Cable and Clamp				

Date:

Total Quoted Price:

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

\*\*  50/60 Hz models with CE Specifications are manufactured according to the Standards IEC-974-1 and EN-60974-1.  
Conforms with NEMA EW 1 "Electric Arc Welding Power Source," Class I (100).

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