

Read this manual before attempting to operate this equipment

BASIC INSTRUCTIONS TO WIRE, OPERATE and REPAIR STAR-TRAC II DIGITAL AUTOMATIC GOUGING TORCH

Warning: A "NOTE" indicates important information that helps you improve the performance of your Star-Trac II.

Warning: A "CAUTION" indicates a potential for equipment damage, personal injury, or possible death.

Listed below are the five standard length cables to be connected to the back of the control unit.

Black 118" 115 volt AC power cable.
Black 40" 24 volt servo motor cable.
Black 240" welding machine contactor closure wire.
Red 48" wire voltage sensor torch (+).
Green 192" wire sensor to the work (-).

- 1- Plug the 115 volt AC cord into the controller outlet marked "input AC 115V" and to a grounded wall socket.
- 2- Plug your carriage's 110 volt power cable into the controller outlet marked "carriage."
- 3- Attach the servo motor cable to the back of the blue controller panel outlet marked "motor."
- 4- Connect the red wire to the brass shoe and to the controller outlet marked "voltage sense torch (+)."
- 5- Clamp the green sensor wire to the plate to be gouged, and to the controller outlet marked "work (-)."
- 6- Plug the black two wire sensor cable into the controller outlet marked "Weld Machine" and to the welding machine's two contactor closure terminals. (example If using a Lincoln Welder the terminals are 2 & 4.) Remove ALL other connections from terminals 2 and 4.
- 7- Bolt the welding machine's positive cable to our concentric power cable's copper lug.
- 8- Connect the air supply. Minimum 3/8" hose with a 30 CFM at 80 PSI output to our concentric power cable.
- 9- Clamp the welding machine's ground cable to the plate to be gouged.
- 10- Adjust the torch head assembly to allow for a 3" carbon stick out, (maximum) and the carbon angle should be at 45° to the plate. The head should be pointed straight ahead and running parallel to the seam to be gouged.
- 11- Turn on the 115 volt main power rocker switch located on the rear of the panel. If the digital screen does not illuminate check the 1 amp circuit breaker marked NFB INPUT.
- 12- Setting the delay timer requires two steps. 1. Move the toggle switch located on the front lower right of the control panel to (DELAY), 2. Turn the control knob located in the center of the panel to the amount of start delay time you desire. This can be set to a 5 second maximum. example The digital screen would read (d 5.0).

14- Gently depress the Black Handle rearward to insert the carbon (FEMALE FIRST) into the rear of the torch. The carbon must be centered on the copper shoe and the drive roll. Now it can be moved using the forward / reverse (JOG) switch. Position the electrode 1/4" from the work piece prior to starting the gouge. **NOTE:** To join two carbons first grasp them near the joint. Then push and twist them together until they are tight.

15- Setting the voltage requirement is a two step operation. 1. Move the toggle switch located on the front lower right of the control panel to (DISPLAY VOLTAGE CONTROL). 2. Turn the control knob until the digital screen reads your welders Operating Voltage. **example** Lincoln DC600 are set at (40.0).

16- Move the toggle switch located on the lower right of the control panel to (VOLTAGE). The digital window will now read (0.0) until the welding machine is turned on.

17- Switch on the welding machine. A very low digital reading will appear. The reading should **NOT** be the welders Open Circuit Voltage. If it is the OCV this means the welders contactor is already closed. It **MUST NOT** be closed until the start switch is toggled. (**STOP**) and double check your wiring before continuing. Suggestion: Change the welders Remote/Panel switch and check the digital screen again.

18- Turn on the manual air valve

19- Toggle the " Gouging Start " switch to (START). Now the reading will equal the welders OCV until after the arc is established. After the arc is established and after the delay/start timer times out, the carriage will begin moving at your preset speed. The digital reading will now be hovering around the welders operating voltage.

20- When the gouge is complete, hit the (STOP) switch. The carriage will stop, and the electrode will retract for seven seconds. **NOTE:** This shut down procedure will automatically happen anytime the arc is lost.

* Power Source Requirement

1- Welding machine should be able to deliver enough amperage for the electrode size to be used. (**example**) If you are using 3/8" gouging electrodes, you need 400 to 650 amps.

2- Set the welder to the " CC " mode or variable voltage.

3- Operating voltage must not exceed 65 volts.

4- Open circuit voltage (OCV) should not be less than 70V.

5- If there is a Panel / Remote switch it should be set so the digital meter doesn't show OVC till after the start switch is toggled. SEE #17.

6- Set the welder on DC reversed polarity. The torch must be positive.

NOTE: 220 volt control panels are available upon request. A special IC chip is available for welders with Open Circuit Voltages of 100 and above.

SYMEX STAR-TRAC II

AUTOMATIC GOUGING HEAD

REF. #	DESCRIPTION	CAT. #
1	SHIELD SCREWS (2 required)	51007
2	STEEL SHIELD	51006
3	ALUMINUM HOUSING standard	51046
3	ALUMINUM HOUSING for Bottom Lava Shield Set	51096
4	ALLEN SCREW 10-32 X 1/4"	51016
5	BRASS BUSHING SET (includes 4 pcs)	51017
6	DIGITAL SERVO MOTOR w/ 40" cord & plug	68799
7	VERTICAL DRIVE SHAFT	51101
8	ALLEN SCREW 1/4"-20 X 1/2" w/ nylon tip	51019
9	LARGE DRIVE GEAR w/ screw	51020
10	ALLEN SCREW 10-32 X 1/4"	51021
11	PINION GEAR w/screw	51003
12	DRIVE ROLL w/screw	51009
13	DRIVE ROLL FIBER BUSHING w/screw	51013
13	DRIVE ROLL BUSHING (LONG) w/screw (NOTE torches built after 10-10-10 use this bushing.)	51022
14	CLEVIS INSULATOR	51043
15	DRIVE ROLL SHAFT	51014
16	NAME PLATE SET (includes 3 labels)	51023
17	BRONZE CLEVIS	51024
18	CLEVIS SHAFT	51025
19	SPRING RETAINER PIN (2 required)	51026
20	CHROME SPRING	51027
21	BRASS SHOE INSULATOR	51028
22	INSULATOR SCREW	51029
23	SHOE CAP 5/16"	51008
23	SHOE CAP 3/8"	51010
23	SHOE CAP 1/2"	51011
23	SHOE CAP 5/8"	51012
24	SHOE CAP SCREW 8-32 x 3/8 fillister head	51030
25	BRASS SHOE	51047
26	BRAZED CURRENT TUBE ASSEMBLY	68793
27	COPPER FRONT COLLAR	51032
27	FRONT COLLAR INSULATOR	51033
28	BRASS CURRENT TUBE	51034
28a	CURRENT TUBE COPPER THREADS	68794
29	RACK TUBE INSULATOR	51035
30	CURRENT TUBE INSULATOR	51036
31	STEEL TUBE & RACK ASSEMBLY	51037
32	INSULATING COLLAR AIR SEAL	51038
34	AIR VALVE BODY W/ INSULATOR	51041
35	SPOOL ASSEMBLY	10067
36	BONNET	10068
37	SPANNER WRENCH	10083
39	TORCH HOLDER (Bug-o)	51042
39	TORCH HOLDER (Gullco)	51095
40	SERVO-MOTOR GUARD	51048
41	SILVER SHAFT COUPLING	51104
42	SERVO-MOTOR GUARD SCREWS (2 required)	51050
43	SERVO-MOTOR MOUNT SCREWS & WASHERS (2 required)	51083
44	SERVO-MOTOR METRIC BOLTS & WASHERS (4 required)	51052
45	MOTOR MOUNT COVER SCREWS (2 required)	51085
46	MOTOR MOUNT COVER	51084
47	ELECTRODE ALIGNMENT TUBE	51045
48	MOTOR GUARD MOUNTING BLOCK	51049
49	SERVO-MOTOR MOUNT	51103
50	AUXILIARY HI TEMP. LAVA SHIELD 3/8"	51086
50	AUXILIARY HI TEMP. LAVA SHIELD 1/2"	51087
50	AUXILIARY HI TEMP. LAVA SHIELD 5/8"	51088
50	AUXILIARY HI TEMP. LAVA SHIELD 5/16"	51090
NS	3 PIECE LAVA BOTTOM SHIELD SET w/screws	51091

1020 (10-10-10)

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