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PARALLELING ARC WELDERS

What is Paralleling?
Paralleling consists of connecting the output of two, three, or more arc welding machines of the same model in parallel so that the total available rated output equals the sum of the rated output of each machine at rated duty cycle.

Why Paralleling?
Machines are paralleled for two primary reasons: 1. For high current application when power sources of sufficient size are not readily available. 2. To utilize existing power sources for operations which require higher output than the rating of any one available machine.

Applications utilizing paralleled welders include automatic and semiautomatic welding, stud welding, arc gouging, resistance heating, high current manual welding and others.

Basic Requirements for Paralleling
1. Since improper paralleling or improper operation of paralleled machines can cause serious damage, the specific instructions for the equipment involved MUST be accurately and completely followed.
2. Welders to be paralleled must be the same size and model and must operate on the same input volts and frequency.
3. The control settings for each machine must be set for the same output so the current draw from each machine is the same.

REQUEST FOR PARALLELING ASSISTANCE (Suggested Form)

Company:

Required Output Current, Voltage and Operating Factor

Purpose: [ ] Automatic welding - Process [ ] Submerged Arc; [ ] Innersheath; or [ ] Other:

Wire Feeders [ ] LAF-3; [ ] LAF-4; [ ] LAF-5; [ ] LT-34; [ ] NA-2; or [ ] Other:

[ ] Semiautomatic Welding - Process:

Wire Feeders [ ] LN-6; [ ] Other:

[ ] Stick Electrode Welding; [ ] Stud Welding; [ ] Arc Gouging; [ ] Resistance Heating

[ ] Other:

Number of power sources to be paralleled

Description of Lincoln power sources to be paralleled:

<table>
<thead>
<tr>
<th>Input volts/phertz</th>
<th>Machine No. 1</th>
<th>Machine No. 2</th>
<th>Machine No. 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

4. Connect "like" output terminals (example: connect "Work" to "Work" and "Min to 525" to "Min to 525") together using equal lengths of welding cable. Use the size cable recommended for the rated output current and duty cycle of the welder. Interconnect motor-generator and engine welders per instructions on the specific connection diagram for the models being used. When they are to be connected to a wire feeder, the paralleled power sources must be interconnected with the wire feeder per the appropriate connection diagram available from the manufacturer. (See sample request form below.)
Redesign
by equivalent sections...
by nomography...
Repair welding...
Reinforcing bars, welding...
Resistance welding...
Resistance:
conversion via nomographs...
designing for...
Equivalent rigidity factors.
Rockwell hardness measuring
Rigidity
Resistance welding
Resistance heating
Semiautomatic welding
Semiautomatic steels
Sheet metal
Sheet metal
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Shielding, arc...
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SAE Alloy Steel Compositions SAE 1404G

Cr Mn Si Ni P S B C
18.7 1.25 0.3 18.1 0.05 0.03 18.7 1.25 0.3
18.2 1.25 0.3 18.1 0.05 0.03 18.7 1.25 0.3
18.2 1.25 0.3 18.1 0.05 0.03 18.7 1.25 0.3
18.2 1.25 0.3 18.1 0.05 0.03 18.7 1.25 0.3
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