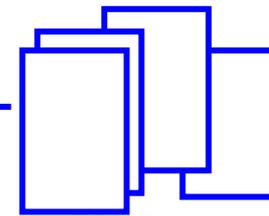


# History for Flex 3000 MigaCard 12645501 - 02



PRN/27.11.2008

<b>Version no.</b>	<b>Control software Following improvements have been implemented in the current version</b>	<b>Welding programs Following improvements have been implemented in the current version</b>
A1 Introduced 18-8-2004	Gas flow measurement now becomes updated at sequence change. Gas test also functions without gas kit.	
A2 Introduced 23-9-2004	During welding error E-03-00 could occur. This error has been corrected.	
A4 Introduced 29-9-2004	Periodical cross ignition error has been corrected.	
A5 Introduced 26-11-2004		<b>AISI 12 Ø1.0 Ar+ is added.</b>
A6 Introduced 02-12-2004	Communication error internally on DSPC PCB has been corrected. Error E-11-03 and E-11-20 happened for no reason, the error has been corrected.	
A7 Introduced 24-2-2005		<b>AISI 5 Ø1.2 is improved.</b>

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A8  
Introduced  
11-3-2005

A9  
Introduced  
8-4-2005

### Key function

#### 2 stroke

- Welding starts immediately when the key is activated. On previous software version, it took 0.3 secs from keystroke till welding start.

#### 4 stroke

- If the key is released during slope down, welding continues until slope down time has run out and welding is ended with stop current. In previous software versions the welding would have stopped in this situation.

#### Soft start:

- Soft start function has been altered. Wire runs out until arc is established, also when the key is released in 4 stroke (max. 3 secs. for safety reasons). In previous software versions the key should be held down until arc was established.

#### Quattro:

- Quattro slope down has been altered. Slope down starts from mean value between top and bottom value.  
This should give a more uniform crater filling and burn back.

#### DSP software:

- The control software has been altered so arc extinctions in CO2 programs have been eliminated.

Fe Ø1.0 ArCO2 is reduced in maximum current to avoid error message  
"The output current is too high"



AlSi5 Ø1,0 Ar +  
AlSi5 Ø1,2 Ar + and  
AlSi12 Ø1,0 Ar + have become improved welding characteristics

CuSi3 Ø0,8 Ar +  
CuSi3 Ø1,0 Ar +  
CuAl8 Ø0,8 Ar +  
CuAl8 Ø1,0 Ar +  
have been altered so minimum current now go down to 30 respectively 35A, suitable for material thicknesses of 0,5 – 0.6 mm.

### Welding programs:

**Fe Co2 – 0.6 mm – 0.8 mm and 1.0 mm** have improved welding characteristics.

**AlSi5 – 1.2 mm** welds without arc extinctions

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	<p><b>Error report:</b></p> <ul style="list-style-type: none"> <li>- Frequent <b>E-03-00</b> error reports have been removed. 71613452 should at the same time be altered to version C3 (stabilisation of switch trigger signals).</li> </ul> <p><b>Display:</b></p> <ul style="list-style-type: none"> <li>- Display output has been reduced from 3 times per second to 2 times per second and filtration of data from the DSP has been increased in order to share a more calm reading of the display during welding.</li> </ul>	
B0 Introduced 27-4-2005		<p><b>Welding programs:</b></p> <p>AlSi5 Ar 1,0mm and AlSi12 Ar 1,2mm have improved welding characteristics</p>
B1 Introduced 7-6-2005	E-03-01 will not show up, when mains voltage is over 415V and an air-cooled torch is used at the same time.	
<b>B2</b> <b>Introduced</b> <b>16-6-2005</b>		<p><b>Welding programs:</b></p> <p>CrNi 316 ArCO<sup>2</sup> 0,8mm can weld 0.5mm material, because the minimum welding current can be reduced to 17 ampere DC.</p>
B5 Introduced 7-11-2005	Software changes one step back from 1,07 to 1,06. An error in SW 1,07 causes the arc to extinguish regularly at pulse welding in amongst others Q312 AlMg5 - 1,0mm at currents less than 70 A.	
<b>B6</b> <b>Impl</b> <b>16-11-2005</b>		Current range for ALM5 ø1,2 Ar puls has been raised to 295 A.
B7 Impl. 22-2-2006		Current range for CrNi316 0,8mm ArCo2(98/2) can now go down to 19A.
B8 – 1.08 impl. 24-3-2006	<p>Error E-11-20 could still occur. This has been redressed by implementing autocalibration of the current sensor.</p> <p>Trigger function has been altered so it is similar to SIGMA.</p> <p>Sequence change with MIG Manager is now only possible on MIG Manager switches or the machine's # switch. It can no longer be done on the trigger. However, on an ordinary torch, sequence can still be changed on the trigger.</p> <p>When spot welding (Spot time) was used at the same time as sequence, it changed to the next sequence when spot time was out. This has been</p>	No changes

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	corrected, so it stays in the chosen sequence when spot welding is ended.	
B9 – 1.09 Impl. 3-5-2006	The limits for motor error (E-01-00) and motor excess current (E-01-01) are expanded to avoid unintentional error reports. The error code E11-17 has been removed and instead max. welding current is reduced from max. pulse current to nominal welding current (300 A ) at short-circuits longer than 200 ms.	No changes
C0 – 1.10 Impl. 11-5-2006	All Migacards with older control software than C0 will not be loaded into the machine once C0 has been loaded, but old versions of the welding program can still be loaded from the old cards. This ensures that even though old cards have been used, the machine is always loaded with new control software.	Welding characteristics for AlSi12 1.0mm have been improved.
C1 – 1.11 Impl. 29-6-2006	Blocking of data entry on older versions of control software has been removed. If an old MigaCard is inserted into the machine, both control software and welding programs will be loaded	No changes
C2 – 1.12 Impl. 04-09-2006	Following errors have been corrected. Software versions <b>B8 – B9 – C0</b> and <b>C1</b> can burn into the contact tip when welding is started by a short circuit between the material and the welding wire. If welding is started WITHOUT contact between welding wire and material there is no error.	No changes
C3 – 1.13 Impl. 04-09-2006	The arc stability is no longer depending on the mains voltage stability, by means of feed forward control of the inverter. (Feed forward control means that the inverter control circuit is measuring the DC-link voltage all the time and corrections to the switch trigger signals are made simultaneously. As a consequence the output current and voltage are kept more stable, even when the mains voltage is pending +/-15% )  Altered control of the start pulse, so primary current error is avoided and ignition characteristics are thereby improved as the the number of primary current error E-03-01 during welding start have been reduced.  Overvoltage error E 11-15 has been removed, so this error is only shown as E-04-02.	The current range for P202 - CrNi316 Ø1.0 DC welding is increased to 290A.
C4 – 1.14 Impl. 05-02-2007		The current range for P202 - CrNi316 Ø1,0 DC-welding is reduced again down to the original level 218A, because the machine froze and at the same time the MigaCard symbol is shown in the display. This fault is seen on card version C3 only.



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C5 – 1.15 Impl. 21-02-2007		The current range for P202 - CrNi316 Ø1.0 DC welding is again increased to 290A.
C6 – 1.15 Impl. 29-03-2007		Welding characteristics for Fe 0.8 mm CO2 (P101) have been improved.
C7 – 1.15 Impl. 14-05-2007	The software has been changed in order to reduce the appearance of error messages E-05-02 and E-05-03.	
C8 – 1.16 Impl. 14-05-2008	The software has been altered so - an aircooled machine does not report water error - a machine with gasket does not report gas error in some areas - motorstart is better when the machine is triggered - SmartCard can be easier read	
C9 – 1.17 Impl. 16-06-2008	The software has been altered so - Motor error E 01-00 is not present at welding start. - Motor does not stand still at welding start. - Motor does not start with a sudden twitch.	
<b>D0 – 2.00</b> <b>Impl.</b> <b>01-11-2008</b>	The software has been altered so - <b>Softstart</b> can be controlled between 0,5 – 24m/min. The function is disabled when "---" is shown. This is the same functionality as in Sigma. - <b>MigManager</b> . From this version only MigManager torches with the latest software will work on Flex 3000. The latest MigManager software is placed on the PCB inside the torch handle and can be renewed by exchanging one of the following components. Torch regulation module 80303460 – A3 or PCB 71613460 – B3  See info F5.7	