

HWH WELDING TIMES

Newsletter for friends and business partners of Harms & Wende GmbH & Co. KG, Hamburg (Germany)

Editorial

Four years have quickly gone by, wow! Much like the Olympics, it seems like just yesterday we were gathering for the noble games of welding. Yes, "The Essen Welding and Cutting Exposition" of 2013 has arrived! Much like the Olympic Games, the world of welding meets in Essen, Germany and once again the town becomes the "heart of welding" for a week. Many remember well the recent fair in 2009 and anxiously await its return in 2013. Yes, it has arrived! Since 2009 many things have happened with the industry and HWH timers is no exception! In 2009 we announced the implementation of IQR to our GeniusMFI timer. A short 4 years later we are proud to announce that thousands have been installed worldwide! And since that time, new functions have been made available such as the: Q-inspector, and the Alu Mode Classic AMC, as well as the PQS^{weld}, for true weld quality assurance. The power range of the inverters reach from as small as 100 Amps to as large as 3500 Amps on the primary current, and our frequency range can see 50/60 Hz to 10000 Hz. In addition, the HWH Friction Welding system product line has been extended and we now supply SCR Inverter units and CD Welding packages! Soon, you can see and experience the new fresh breath of our systems in Essen for yourself. Many things have happened



in four years, we hope to see you in Essen! You will find us at: "Hall 7" booth "L119"!

Ralf Bothfeld
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News from the export markets

Overview about current affairs.

As the editorial reads, Harms & Wende is supplying Volkswagen with welding equipment. As major supplier for weld timers, Harms & Wende is shipping equipment to; the Foshan plant in China, the Slovakian plant Bratislava in Mlada Bodeslav, as well as to many plants in Malaysia. Also, our supplier status to Volkswagen of Brazil is running exceptionally well. Ford Motor Company received products from Harms & Wende to its Russian facility in a large scale. And in Korea, the success story continues

with inverters shipping in the early summer of this year. In the industrial field, machine builders have deployed many different systems from us and have brought them to new customers on a global scale! We are proud to announce that we have our large inverter systems in the HWI25XX series. These units are capable of an outstanding power range up to 600 KVA! We are well established in the heavy duty, fully integrated solutions market as well with the Harms & Wende Sinius systems.

Our friction welding equipment RSM401 (3.8 KW) and RSM410 (30 KW) is a major part of an automotive project in North America. For this technology, a great success has been gained with our American partners. Deliveries will be ongoing from now well into 2014 with sequential installations.

Continued on page 2 ...

Fair „Welding & Cutting Beijing“

SNG and HWH present news for the chinese market.

The local branch exhibition of the Welding & Cutting exposition took place in Shanghai with a large audience from June 18th to the 21st. The fair rotates yearly between Beijing and Shanghai. Four large halls were full. There were many booths and on each of the aisles, there were large numbers of visitors for the entire day. Our partner, SNG, along with Harms & Wende has

exhibited continuously since 2006 here. Since then, we have become a part of the Chinese market for resistance and friction welding. Many good customers came to our booth with new project opportunities as well as on-going ones resulting in dynamic discussions. The general consensus feedback has been very positive respectful to the handling of our systems and our service. As in any customer oriented company, Harms & Wende also received comments on how to improve. We gladly accept those as well ... more to follow. The new Aluminum Mode Classic has been



Presentation of HWH software

introduced into the Chinese market. This has drawn big interest. From our automation offering, our Varius was very well received. We look forward to continuing our discussions and news letter following the Essen Show in September – dialog with our customers is very important to us. The 2014 fair will go into the planning stage very soon and we will be there – for you.



Exhibition booth

News from the export markets

Continued from page 1

Activities in different countries.

Italy

Italy is a dynamic country and many high-tech products come from there: Fiat, Maserati, industrial machines just to name a few. To strengthen our position in Italy, we have started work with the Carpaneto Spa Company in Torino. Carpaneto has been active in the field of resistance welding for many years and with this comes a very good knowledge base. As you can expect we have initiated technical and sales training. We quickly forced technical training to support our Italian customers.

The Saldotechnica Company, which over many years has been good support for us, keeps a smaller scale clientele. Mr. Luigi Buraschi is still supporting on part time basis. Your main contact in Italy is the Carpaneto Company.

You will find full details on our website under "contact".

United States

The United States is a big country and they market with a big variety of customers. You may remember from our previous issues of these Weld Times our partner Huys Industries?

Industrial

Huys Industries covers the industrial market including repairs for US and Canadian customers. They also keep track of our industrial customers in Mexico.

Automotive

Alliance Sales Inc., with its headquarter in the Detroit area, are our new partners for Automotive and Tier suppliers within the US for resistance welding applications.

Alliance represents a full set of companies for our customers' advantage to design turnkey solutions – a clear advantage.

You will find the details for Alliance Sales on our web site.

Automation and Friction welding

Coldwater Machine Company is a long term partner to HWH with experiences in a multitude of Automation applications. They are specifically working closely with HWH for the promotion and integration of Friction Welding systems for not only the Automotive world but other industries as well.

Please refer to the partner portrait article found in this issue of Weld Times for further details concerning Coldwater Machine Company.

Hungary

Our partner Rehm went through an extended repair training session and now has certified staff and equipment at their facility. Rehm covers repair services for HWH for the Eastern Eu-

ropean markets. Additionally, Rehm is fully certified to do IQR programming.

Russia

In cooperation with our partner, LPBS, in the Russian Federation, Russia has become a growing market for us. With this, the demand to extend our services in this country has grown exponentially! Together with our partner LPBS, we now offer the possibility to have training in the Russian language as well as a link for our Russian speaking customers seeking support. Mr. Shcheglov, Ph. D. has undergone extensive training at our Hamburg facility and has excellent knowledge over all of our products. LPBS also offers consulting services for our Russian customers relative to the commissioning of production lines and machines.

Technology corner

Update about new functions and hardware.

Friction welding RSM

With the new welding head RSM410 we are now able to weld diameters up to 17.5 mm on regular mild steel which was not possible before. The first heads have been supplied

to the USA in June 2013. This head runs on a similar speed as the smaller welding heads since our systems are in the area of high-speed-friction-welding.

Additionally the RSM 410 welding head is now able to stop at a specified angular position which is an advantage on a number of applica-

tions. Earlier the head stopped the rotation on any position.



RSM410-System

Due to the demand from customers we have developed new welding heads to meet your demands:

Welding head	Spinning speed RPM	Power KW	Force N	Core diameter using mild steel	Max surface pressure 100N/mm ²	Typical cycle time
RSM401RK18	23.300	1,80	10.700	< 11,0 mm	< 95 mm ²	9 sec.
RSM401RK30	21.000	3,00	21.000	< 13,5 mm	< 142 mm ²	9 sec.
RSM410RK31	21.000	30,00	25.000	< 17,5 mm	< 250 mm ²	ca. 8 sec.

Technology corner Continuation

Update about new functions and hardware.

Resistance welding

Resistance welding is a very old process and the heart of our business – and this statement comes

with a double meaning. Our core business is resistance welding AND we are doing it with our heart.



GeniusMFI

The following table gives you an overview of our different medium frequency (MFDC) systems:

System name	Business sector	Transformers (KVA)	Type	Typical functions
GeniusMFI	Automotive	$80 \leq 130$	Networking	CCR, IQR, QI-Inspector, U-Inspector, S-Inspector, H-Inspector, I-Inspector, SP-Inspector
GeniusHWI	Industrial	80 to 2 x 700	Networking and stand alone	CCR, IQR, QI-Inspector, U-Inspector, S-Inspector, H-Inspector, I-Inspector, SP-Inspector
FiliusMFS	Industrial	80 to 2 x 700	Stand alone	I Monitoring

CCR = Constant Current Regulation, IQR = Adaptive Welding, Inspectors: QI = Quality, U = Voltage, S = Displacement, H = Regulation limit, I = Current, SP = Splatter

In normal frequency AC systems we have the following new systems:

System name	Business sector	Power	Type	Typical functions
Filius Multi IQ	Industrial	Any SCR available	Stand alone	CCR I Monitoring
WS 708	Industrial	Any SCR available	Stand alone	
Sinius AC1	Industrial	Any SCR available; One ignition	Automation	CCR Programmable functions by the user
Sinius AC3	Industrial	Any SCR available; 3 ignitions	Automation	Programmable functions by the user



Filius Multi IQ

Medium frequency systems MFDC



X-Pegasus IQR easy

Since 1000 Hz MFDC technology is well established, many of our functions either come from the daily work experiences of our customers or when we test our systems. Given the size constraints of a news letter, we cannot fully go into the detail of these functions. Please know that when you need to know further details, just

contact your local Harms & Wende partner. Our inverters come with different function packages; please contact your local partner for more information. Not all inspectors are available on any inverter version.

QI-Inspector

This inspector does its check by calculating a quality number, the achieved spot quality. This function has been designed for spot welding.

I-Inspector

This inspector monitors the weld current by checking violation of limits set by the user.

U-Inspector

Monitoring the voltage in certain functions is a requirement, for example when welding copper components.

H-Inspector

This unique monitoring function does its check by sampling the internal regulator of the timer. A beneficial example of this monitor is for "nut welding".

S-Inspector

When a displacement sensor is connected to a Genius inverter, the existence or displacement during a

weld can be monitored. The combination of both is possible.

SP-Inspector

This monitor keeps track of splatter (expulsion) occurrences per weld gun or electrode. This is helpful to identify the increase or decrease quantity of splatter.

Tip dress monitor

The tip dress monitor verifies by two measurements before and after a trip dress cycle, if tip dressing has been successful. This monitor helps to find bad tip dressings automatically, i. e. a bad trip dress knife.

GeniusMFI – GeniusHWI

What is the difference?

GeniusMFI is our automotive inverter suitable for transformers up to 130 KVA. It operates from 400 to 480 V automatically. The design is very

compact and has been optimized from the perspective of size. The GeniusMFI is suitable for manual and robot gun operations. This power unit is air cooled.

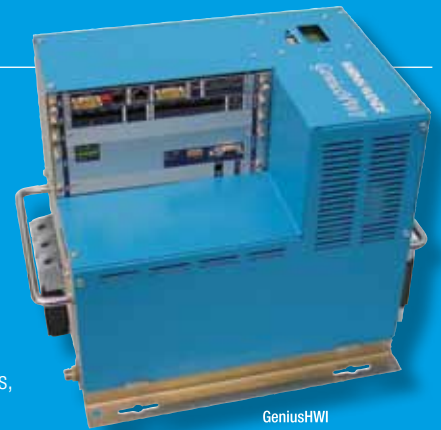
GeniusHWI is our industrial inverter available from 60 KVA up to 360 KVA and fits well for heavy duty operations

such as projection welds and spot welds.

GeniusHWI can be composed as Master-Slave-System with up to 6 inverters, 1 Master and 5 slaves. GeniusHWI is suitable for: machine operations, robot guns and manual guns.



GeniusMFI



GeniusHWI

Application corner

New materials require new methods.

In this section we will give you an update about “solutions for applications” which graduated from our labs and are now available for your

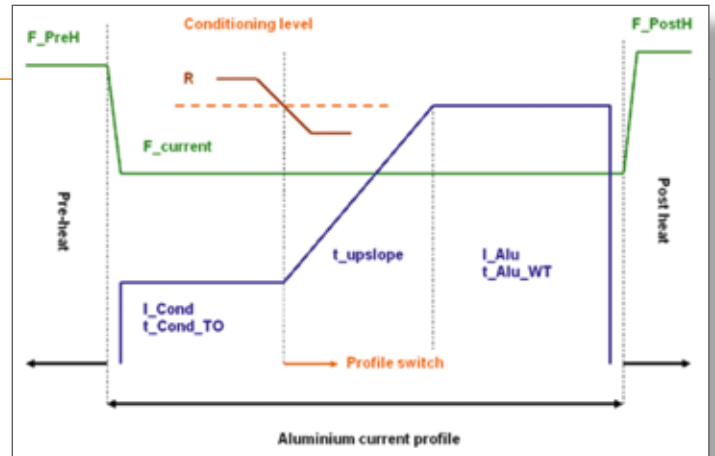
benefit. Welding is a dynamic process, not only in resistance welding do we find changes and updates constantly happening.

Aluminium Mode Classic (AMC)

Solution for resistance welding of Aluminum

Aluminum welding is a challenge and many attempts have been made for finding reliable welding methods of this material group. You may be familiar with our friction spot welding systems which are mechanical joining processes? We recently released a new process running on our Genius inverter series which is called Alumi-

num Mode Classic, AMC. This mode is selected as a normal weld schedule and completes the weld. How does this work? For natural reasons, Aluminum gets coated simply by the humidity in the air. This results in a very drastic change to the weld conditions. The AMC splits the process into two sections to get stable conditions between the tips, then it welds. It's a dynamic process. The inverter does a



Alu Mode Classic (AMC)

measure check to the parameters to decide when to change from phase one to phase two. The AMC is used in field applications and has shown reliable in mass production component runs. Additionally, any Genius inverter fits to the AMC, but since high currents are required, a larger inverter may be needed. This is something you

may wish to discuss with your local Harms & Wende partner. They will be pleased to explain in detail how the AMC works and what equipment will be needed. We are not talking about aluminum welding – we do it!

Splatter monitor (SP monitor)

Keep splatter under control

Splatter or expulsion is an item which is not desirable. Thankfully, once a machine or gun setup is well trimmed there should be very little of this ... but slowly, with time the conditions begin to change or vary. This may lead to increased splatter. It typically then becomes very hard to find the cause. To assist the maintenance crew at the plant, the new splatter monitor

keeps track of expulsion. As kind of traffic light, the operator at the XPEGASUS monitor visually sees what the quantity of splatter has become, and it shows it clearly!

Since each inverter or station has its unique name, it's very simple to find the affected station. The next step would



SP monitor

be to investigate the cause of the splatter on-site. The SP monitor is

a simple but powerful function to highlight the undesired splatter easy and visually. Keep control about your processes and be supported by the equipment you use – Genius systems and XPEGASUS are the tools for this. Please contact your local partner for more details.

Application corner Continuation

New materials require new methods.

Adaptive welding with IQR

...is well established with great advantages

In the past issues we have written a couple articles about our IQR. IQR has been in the market now for nearly 15 years and many products are now made with them. Perhaps you use some of them yourself? IQR has been introduced in high volume production runs.

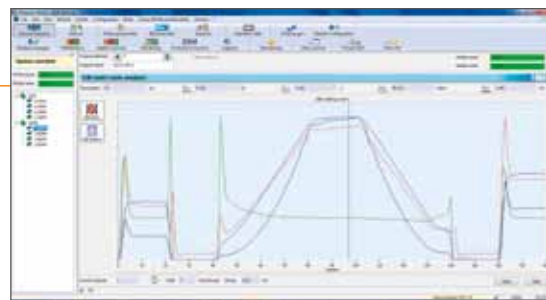
We have asked our customers about their opinion during the installation and startup-phase and even in running production. Here is some of the feedback:

- IQR is active right from the beginning. When an IQR inverter is delivered, all settings are made in the adaptive mode immediately. There is no need to make trial runs with constant current initially.
- Very few parameters needed. There is no need to use many parameters in IQR to optimize the weld schedules.
- IQR works with the current IQR and it mainly works with the current to weld rather, with time, like others. Practice has shown that working with current allows you to work

with transformers with 2 or 4

diodes as well as other combinations. Additionally, operating with current sensing is quicker to put the energy needed for welding directly into the spot as opposed to the time method.

- **XPegasus**
Our interface is greatly accepted due to this clear and simple design. Furthermore, XPegasus guides the user through processes like Force Calibration. There is no need



XPegasus IQR window

for long training phases. Our customers work with many different systems in their plants. We are told our customer service and representative assistance helps tremendously in keeping our customer systems "on-line".

To learn more about IQR facts, please contact us or your local representative.

Need to program 300 timers?

XPegasus offers great support to make work simple

Getting weld schedules into many weld timers is a challenge! To find a remedy to this typically tedious task was met head-on by our development team. A solution to make instant programming changes of many timers simultaneously was too great a temptation for our R&D group to pass on. Welcome to the XPegasus!

To date, we have written 300 weld timer solutions. Programming 10 or 20 can take too much of your precious time. In our

latest XPegasus we have implemented a new import function which does the



XPegasus export window

job quickly. Your schedules are arranged in a table, as in Microsoft Excel

and then automatically uploaded to the timers in the line. You simply copy the schedules together you need for your timers. Each timer is identified by its specific name. Then select the import function in XPegasus and you are done!

There is no longer the need to copy schedules manually from timer to timer, you send them directly from your PC.

Genius goes high power

Master-Slave systems generate high current

Customers ask us how to extend our GeniusHWI system to higher power? For example, 240 KVA for large projection welds or heating projects are in high demand. Both applications have totally different parameters. Where projection welds need very high current over short time segments, heating applications moderate current over long time schedules.

It is now possible to extend a GeniusHWI inverter with up to five slave inverters to amplify the current

output. As customer, you have a wide range of choices running from 60 KVA inverters up to 600 KVA inverters. In a master-slave combination, all inverters must be the same power model to keep the system balanced.

Constant current regulation is naturally available on this system as it is a standard on all out inverters. It may be possible that the transformers you intend to use do not have a build in measurement coil, so please take a minute to check this.



HWI2808 and two HWI2545



Partner Portrait

COLDWATER MACHINE COMPANY – GROWING TO SUPPORT YOUR NEEDS.



Building extension

In addition to the integration of the Harms & Wende products and technologies, CMC is staffed to provide fully engineered cells or systems for processes like piercing, blanking, staking, flattening,

coining, extruding, drawing, trimming, forming, riveting, bending, joining, fastening, welding (mig, tig, plasma, laser, friction, spot, inertia, ultrasonic, etc.), finishing, hard check inspection, vision and non-contact inspection, degradation testing, part transfer,

Coldwater Machine Company (CMC) is a proud partner of Harms & Wende (HWH), with a relationship that had a formal beginning in 2007. Coldwater Machine Company and Harms & Wende have partnered to advance the presence of Solid State Welding in the North American market through the application of Friction Spin and Refill Friction Stir Spot Welding.

A key component that has allowed this relationship to be successful, has been CMC's ability to utilize the team's knowledge and experience of providing innovative engineered solutions to the Aviation, Energy, Automotive, Appliance and other industries.

Existing relationships and the reputation of CMC within these industries helps to define Coldwater Machine Company as the ideal partner to support the integration of the products and technologies that Harms & Wende has developed.

Coldwater Machine Company has a 60 year history of providing quality services to North America industrial O.E.M.'s in the commodity goods manufacturing market.

CMC's core business is special purpose metal working equipment and Assembly Automation equipment for durable goods manufacturers, with a reputation for providing innovative solutions that are durable and reliable.

part feeding, cleaning, machining, and assembly.

In 2013, Coldwater Machine Company is adding 30,000 sq. ft. to the existing plant, along with strategic additions to their staffing. These additions are necessary to support the expanding activities in the designing and building of Specialty Factory Automation, and the growth CMC is experiencing in the Friction Spin (FSW) and Refill Friction Stir Spot welding (RFSSW) business segment.

The building addition will also provide the space required to install additional CNC machine tools and inspection equipment necessary to support ongoing internal manufacturing activities, including the build-to-print activity for precision parts and assemblies.

The additions taking place in 2013 will allow Coldwater Machine Company to properly maintain the direct support activities provided to customers in

The modular design can be adapted for use in concepts involving Automated loading or Manual loading, Dial table transfer or In-line transfer systems, multiple fixed weld head designs or X-Y transfer tables under a single weld head, and/or adapt to other unusual configurations.

When the scope falls outside using modular components, CMC offers custom solutions based on special customer needs.



Friction welders

After working with the customer to develop, design and build a complete system, CMC provides equipment validation, process verification,



developing and implementing Friction Weld applications.

A typical Friction Weld application procedure begins with the product evaluation and part testing in the CMC Friction Weld Lab.

Once feasibility has been determined, CMC works closely with the involved parties to optimize all the inputs to the welding process so it will be functionally acceptable within a production environment.

As required, CMC provides the necessary designs and equipment to accommodate integration of a Friction Weld Cell by third parties or full integration for the End User by CMC.

Cost effective value is generated in part by utilizing standardized modular machine base designs that are pre-engineered for a variety of cell concepts.



training, installation, and warranty support to ensure that the end results meet or exceeds the Customer's needs and expectations for the life-cycle of the application.

When you are thinking of a company that is committed to aligning value with customer service, then you are thinking of Coldwater Machine.

CMC believes that a successful business relationship requires that both companies overtly commit their

Partner Portrait

Continuation



COLDWATER MACHINE COMPANY – GROWING TO SUPPORT YOUR NEEDS.



resources to a common objective of getting things done efficiently through effective dedication to the project.

This is a cultural trait that sets

CMC apart in this industry and gives CMC a sought-after advantage to continue a successful legacy.

To learn more, visit www.coldwater-machine.com.

With this version of the weld times we start a series of articles where we present out international partners.

The idea is that you learn about our growing network and capabilities.

The network is for your advantage to get service and information you require.

*Jörg Eggers,
Head of Export*

HWH offers capacitor discharge packages

High power in a very short time offers new possibilities.

As our HWH reader, you know us as manufacturer of resistance welding equipment running from main frequency (AC) via MFDC (1000 Hz)

to high frequency (HF) equipment. As an extension to our business we have now introduced capacitor discharge packages. These packages

comprise both the power part as well as the transformer. Our packages are suitable for new machines as well as for refurbishing used machines.

CD welding offers new possibilities in welding like large projection welds as well as complex material joints with very hard materials.

Transformer secondary voltages up to 45 V bridge almost any secondary. Here are some key figures of our packages:

Parameter	Unit	KE-Micro 1	KE-Mini	KE-Mini	KE-Midi	KE-Maxi
Maximum weld energy	kJ	0,4	2	6	16	36
Transformer power	KVA	50	200	300	400	2 x 400
Short circuit weld current	kA	5	20	80	200	400

Our packages operate under 400, 440 and 480 V.

HWH – Competence world wide

Harms & Wende technology successful in Korea.

Recently, at a Korean automotive OEM, regulations capabilities were compared. At the end of the test, our IQR became the number one product!

Our partner MDT installed one system in the laboratory and programmed the base parameters. Then the tests were made by the specialists of the OEM.

The tests represented daily process fluctuations and how the system reacted on each. In the final comparison, the IQR showed best results with

quite some distance to the next system. We have a large number of installations in Korea and in overseas plants all confirming these results. In July, our export manager Mr. Jörg Eggers and

myself visited our partner MDT as well as many important customers. We discovered that many new projects are in focus where our GeniusMFI will be utilized. While we were there, the MDT staff was trained with respect to the different aspects of our products. Another series of training will take place in Hamburg later in 2013. As a note: just one week after our visit, our first orders came in for two full production lines.

Ralf Bothfeld
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Kieler Woche 2014

High class sailing and fun for all.

The city of Kiel is located just 100 km respectively 60 miles north of Hamburg and is a nice town with about 300.000 people – and – the last week in June the worlds largest sailing event took place. Thousands of professional and amateur sailors were in town and make the entire city very colorful.

All over town there were events for little kids and old kids. There were carrousel and other fun stuff.

To get an impression about life at sea, it was possible to visit the tall ships. A parade of tall ships ended the event the last day and it included a great firework display.

We really can recommend this large event just north of our home town and you will find more details using the following link: www.kieler-woche.de/english/index.php



Source: Kieler Woche

General HWH services

Please note

Continuous improvement is ongoing at Harms & Wende all the time. To optimize the flow of information through our building, we established email addresses for you our customers.

- order@harms-wende.de
- info@harms-wende.de

Of course there is no change to the personal email addresses, but as a colleague might be out of the office, these mail addresses guarantee that your request is processed promptly.

Change in our secretary

We quitey say good bye and also say welcome.



Gisela Barwig

Mrs. Gisela Barwig, which many of you know by voice on the telephone, retired from her position on June

13th. She now starts her new episode of life. She joined our company more than 10 years ago.

Everybody enjoyed working with her. We wish her all the best in: luck, health and many enjoyable years to come.

As we say in Hamburg. "Tschüss, machen Sie es gut!"



Andrea Liese

We welcome Mrs. Andrea Liese on her new position as secretary. She will assist you to find the right person

in our company and looks forward to work with you.



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Events & fairs 2013/2014

2013

- Fabtech Chicago, November 18th to 21st 2013, McCormick Place

2014

- Welding & Cutting Beijing, June 10th to 13th 2014, Expo Center Beijing
- EuroBLECH, October 21st to 25th 2014, Hannover fair
- 825. Hamburg Harbour Birthday, May 9th to 11th 2014

Your Harms & Wende partner