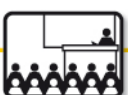


Training Program for Tower Cranes 2nd Half of 2008

Maintenance personnel for our customers



Training Centre Contacts

Training Supervisor

Paul Booch
Tel.: +49 7351 41-2474
E-mail: paul.booch@liebherr.com



Organisation / Registration

Nadja Winter
Tel.: +49 7351 41-2679
Fax: +49 7351 41-822679
E-mail: nadja.winter@liebherr.com



Speakers



Thomas Steib
Tel.: +49 7351 41-2821
E-mail: thomas.steib@liebherr.com



Jürgen Keitel
Tel.: +49 7351 41-2759
E-mail: juergen.keitel@liebherr.com



Markus Münt
Tel.: +49 7351 41-2808
E-mail: markus.muenst@liebherr.com



Hermann Buck
Tel. +49 7351 41-2942
E-mail: hermann.buck@liebherr.com



Thomas Braunger
Tel.: +49 7351 41-2142
E-mail: thomas.braunger@liebherr.com

Liebherr-Werk Biberach GmbH
Training Centre
Hans-Liebherr-Strasse 45
88400 Biberach / Riss

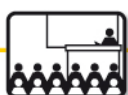
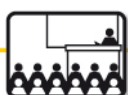


TABLE OF CONTENTS

| | Page |
|--|-------------|
| General participation requirements for courses | 4 |
| Course fees | 5 |
| Introductory training | 6 |
| Electronics training for bottom slewing cranes | 7 |
| General training for top slewing cranes | 8 |
| Training for Litronic top slewing cranes | 9 |
| Training for contactor-controlled top slewing cranes | 10 |
| EC-B training (71 - 130 EC-B) | 11 |
| Machine training 13 HM / 22 HM | 12 |
| Machine training 26 K.1 | 13 |
| Machine training 42 K.1 | 14 |
| Machine training for crawler cranes | 15 |
| Basic training for MK-cranes | 16 |
| Equipment training MK 63 | 17 |
| Equipment training MK 100 / MK 110 | 18 |
| Maintenance training for MK 63 / MK 100 superstructure | 19 |
| Climbing training 154 EC-HM | 20 |
| Addresses for hotels in Biberach and surrounding areas | 21 |
| Directions | 22 |
| Site plan for Liebherr-Werk Biberach GmbH | 23 |
| Registration form | 24 |



GENERAL PARTICIPATION REQUIREMENTS FOR COURSES

Registration:

We would be more than happy to reserve a place for you on our training course. Please fill out the enclosed registration form (page 24) completely in legible handwriting.

Upon receipt of a written registration form via E-mail, fax or post, we will send the applicant a confirmation in writing. The registration is binding from the time the applicant receives the confirmation.

As the number of participants for each course is restricted for pedagogic reasons, all registrations will receive consideration in the order that they are returned. In the event that there are no more vacancies for the respective courses, another date will be recommended to you. A new registration must then be completed for subsequent participation, however, this will be handled with preference.

All participant-related data which is required for the undertaking of a course will be electronically stored for internal purposes.

Course fees:

The costs stipulated in the course price list apply (page 5).

In the event that a participant does not attend the entire course, this will not entitle said participant to a price reduction.

Benefits:

You will receive the following benefits within the price for the respective course:

- Acquisition of course subject matter detailed in the course description
- A midday meal every day in our works canteen
- Course documentation recorded on a memory stick
- Personal certificate of attendance

All other costs, such as travel and accommodation expenses, are not included within the course fees.

Changing courses:

We reserve the right of cancellation as a result of a speaker being unable to attend due to illness or for reasons beyond our control, or if there is an insufficient number of participants, in which case it would not be economically viable for us to continue with the respective course.

Travel and hotel reservations:

We would like to ask you to organise travel to our Liebherr training centre, as well as arranging hotel reservations, yourselves (see list of hotels and travel plan on pages 21 - 23).

We would be more than happy to help should any problems arise.

Parking:

The parking space behind the bridge at gate 1 has been allocated for course participants (see site plan on page 23). Parking within the factory premises and in front of the office buildings is prohibited for all course participants.

Course times:

The course times are specified in the respective course descriptions.

General:

Planning of the training dates takes place every six months. This allows us to react quicker to strong demand.

You will be informed of the dates for the 1st half of 2009 in October 2008.

All course participants must bring their own working attire to the course (overalls, safety boots, protective helmet and industrial gloves), as stipulated in our course instructions included in the additional information.

For reasons of safety we will reserve the right to negate the participation of any persons that do not comply with this request.

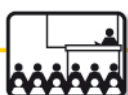
We are counting on your active support for such matters.



COURSE FEES

The following course fees apply for our customer training courses (per participant, plus VAT.):

| | |
|--|----------|
| Introductory training: | 300 00 € |
| Electronics training for bottom slewing cranes: | 300 00 € |
| General training for top slewing cranes | 300 00 € |
| Training for Litronic top slewing cranes | 300 00 € |
| Training for contactor-controlled top slewing cranes | 300 00 € |
| EC-B training (71 - 130 EC-B) | 300 00 € |
| Machine training 13 HM / 22 HM | 350 00 € |
| Machine training 26 K.1 | 350 00 € |
| Machine training 42 K.1 | 350 00 € |
| Machine training for crawler cranes | 350 00 € |
| Basic training for MK-cranes | 350 00 € |
| Machine training MK 63 | 350 00 € |
| Machine training MK 100 / MK 110 | 350 00 € |
| Maintenance training for MK 63 / MK 100 superstructure | 300 00 € |
| Climbing training 154 EC-HM | 350 00 € |



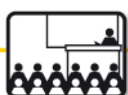
INTRODUCTORY TRAINING

| | | |
|-----------------------------|---|-----------------------|
| Category of persons: | After-sales service technicians | |
| Objective: | Becoming familiar with the different crane types Carrying out of setting and inspection tasks Reading simple circuit diagrams, as well as compiling work schedules (in compliance with the circuit diagram) | |
| Content: | Introduction to crane electrical system Functionality and troubleshooting | (1.5 d. Paul Booch) |
| | Basics of the tower crane Product information BGV 06 Technical terms | (1.5 d. Paul Booch) |
| | Mechanics Brakes, couplings, gears | (1.5 d. Hermann Buck) |
| Dates: | Dealers + customers: 43rd calendar week (20. - 24.10.2008) ENGLISH | |
| Duration: | 4.5 days | |
| | Monday: | 10:00 - 16:00 |
| | Tuesday - Thursday: | 08.00 - 16:00 |
| | Friday: | 08:00 - 11:30 |
| Speakers: | Paul Booch / Hermann Buck | |



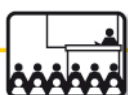
ELECTRONICS TRAINING FOR BOTTOM SLEWING CRANES

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of basic knowledge already acquired.
Start-up and repair of PLC-cranes
- Content:**
- | | |
|--------------------------|------------------------|
| 120 K.1 Scaling | (1.5 d. Jürgen Keitel) |
| 71 K Scaling | (1.5 d. Jürgen Keitel) |
| PLC bottom slewing crane | (1.5 d. Thomas Steib) |
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speakers:** Jürgen Keitel / Thomas Steib



GENERAL TRAINING FOR TOP SLEWING CRANES

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Scaling of a Litronic crane AC31 top slewing crane / basic settings of the EMS.
- Frequency converter / operating the keypad / basics
- Maintenance and upkeep of gears / brakes for top slewing cranes.
- Content:**
- | | |
|--|-----------------------|
| Frequency converter | (1.5 d. Markus Münt) |
| Operating the keypad Danfoss / KEB / Lenze | |
| Reading / analysing the error memory | |
| Installation and connection | |
| Scaling of a Litronic crane / | (1.5 d. Markus Münt) |
| Layout of display levels | |
| Mechanics of the top slewing crane | (1.5 d. Hermann Buck) |
- Dates:** Dealers + customers: 49th calendar week (01. - 05.12.2008) ENGLISH
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speakers:** Markus Münt / Hermann Buck



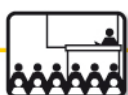
TRAINING FOR LITRONIC TOP SLEWING CRANES

- Category of persons:** After-sales service technicians with very good electro-technical knowledge who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of knowledge already acquired.
Setting and inspection of electronic components.
- Content:**
- | | |
|--|-----------------------|
| Configuration and functioning of PLC for top slewing cranes | (1.5 d. Thomas Steib) |
| Basic settings of the EMS Scaling of the EC-H / HC-L | (1.5 d. Markus Münt) |
| Frequency converter Configuration and functioning Reading the error memory | (1.5 d. Thomas Steib) |
- Dates:** Dealers + customers: 46th calendar week (10. - 14.11.2008) ENGLISH
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speakers:** Thomas Steib / Markus Münt



TRAINING FOR CONTACTOR-CONTROLLED TOP SLEWING CRANES

| | | |
|-----------------------------|--|-----------------------|
| Category of persons: | After-sales service technicians who have already attended the introductory training. | |
| Objective: | Refresher course, as well as further development of knowledge already acquired. | |
| Content: | Electronics of contactor-controlled top slewing cranes | (1.5 d. Paul Booch) |
| | Functional flow of a crane control | |
| | Troubleshooting on training systems | |
| | ABB contactor-controlled | (1.5 d. Thomas Steib) |
| | Likom software and explanation of components | (1.5 d. Thomas Steib) |
| Dates: | Upon request | |
| | Minimum number of participants: 6 persons | |
| Duration: | 4.5 days | |
| | Monday: | 10:00 - 16:00 |
| | Tuesday - Thursday: | 08.00 - 16:00 |
| | Friday: | 08:00 - 11:30 |
| Speakers: | Paul Booch / Thomas Steib | |



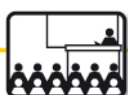
EC-B TRAINING (71 - 130 EC-B)

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of knowledge already acquired.
- Content:**
- Electrical system of the EC-B FRtronic (1.5 d. Paul Booch)
 - Frequency converter EC-B (1.5 d. Markus Münst)
 - Configuration and operating mode of an FC
 - Definition of terms for the connection terminals
 - Pointing out differences in individual converters using practical examples
 - Mechanics of the EC-B (1.5 d. Hermann Buck)
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speakers:** Paul Booch / Markus Münst / Hermann Buck



MACHINE TRAINING FOR 13 HM / 22 HM

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of basic knowledge already acquired
Erection and dismantling
Commissioning of erected cranes ready for operation
Carrying out of maintenance, repair and adjustment tasks
- Content:** Erection / dismantling of 13 HM / 22 HM (1.5 d. Jürgen Keitel)
22 HM undercarriage (1.5 d. Jürgen Keitel / Markus Müntst)
- Configuration and functionality of individual components
- Learning operation and travel situations with practical exercises.
Troubleshooting and carrying out repairs using a training system
Hydraulics of a bottom slewing crane (1.5 d. Hermann Buck)
Maintenance of a bottom slewing crane
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
Monday: 10:00 - 16:00
Tuesday - Thursday: 08.00 - 16:00
Friday: 08:00 - 11:30
- Speakers:** Jürgen Keitel / Markus Müntst / Hermann Buck
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



MACHINE TRAINING 26 K.1

Category of persons:

After-sales service technicians who have already attended the introductory training.

Objective:

Refresher course, as well as further development of basic knowledge already acquired

Erection and dismantling

Commissioning of erected cranes ready for operation

Carrying out of maintenance, repair and adjustment tasks

Content:

Erection and dismantling of the 26 K.1 (3 d. Jürgen Keitel)

Hydraulics and mechanics of the 26 K.1 (1.5 d. Hermann Buck)

Dates:

Upon request

Minimum number of participants: 6 persons

Duration:

4.5 days

Monday: 10:00 - 16:00

Tuesday - Thursday: 08.00 - 16:00

Friday: 08:00 - 11:30

Speakers:

Jürgen Keitel / Hermann Buck

Info:

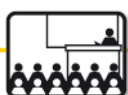
Personal protective equipment:

It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



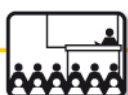
MACHINE TRAINING 42 K.1

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of basic knowledge already acquired
 Erection and dismantling
 Commissioning of erected cranes ready for operation
 Carrying out of maintenance, repair and adjustment tasks
- Content:** Erection and dismantling of the 42 K.1 (3 d. Jürgen Keitel)
 Mechanics of the 42 K.1 (1.5 d. Hermann Buck)
- Dates:** Upon request
 Minimum number of participants: 6 persons
- Duration:** 4.5 days
 Monday: 10:00 - 16:00
 Tuesday - Thursday: 08.00 - 16:00
 Friday: 08:00 - 11:30
- Speakers:** Jürgen Keitel / Hermann Buck
- Info:** Personal protective equipment:
 It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



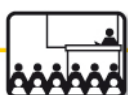
MACHINE TRAINING FOR CRAWLER CRANES

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Refresher course, as well as further development of basic knowledge already acquired.
Start-up and repair of a crawler crane
- Content:**
- | | |
|------------------------------|---------------------------------------|
| Electrical system | (1.5 d. Jürgen Keitel) |
| Hydraulics | (1.5 d. Hermann Buck) |
| Tensioning / replacing chain | (1.5 d. Hermann Buck / Jürgen Keitel) |
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speakers:** Jürgen Keitel / Hermann Buck
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



BASIC TRAINING FOR MK-CRANES

- Category of persons:** After-sales service technicians with no experience of MK-cranes, however, with knowledge of PLC systems
- Objective:** Refresher course, as well as further development of basic knowledge already acquired from introductory training courses
- Introduction to MK-technology
Introduction to automatic sequential control and explanation of error codes. Function of individual control components and of CAN bus.
Working with Intercontrol-PLC.
- Content:** Operation: (3 d. Thomas Braunger)
- Basic knowledge of the undercarriage (travel programs, levelling, etc.)
Operation of the Intercontrol-PLC
Introduction to sequential diagrams
Detailed troubleshooting and rectification of faults
- Frequency converter (1.5 d. Markus Münt)
- Configuration and functionality
 - Inspection and adjustments of the braking system
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
- | | |
|---------------------|---------------|
| Monday: | 10:00 - 16:00 |
| Tuesday - Thursday: | 08.00 - 16:00 |
| Friday: | 08:00 - 11:30 |
- Speaker:** Thomas Braunger / Markus Münt
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



MACHINE TRAINING MK 63

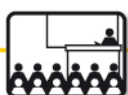
- Category of persons:** After-sales service technicians with basic knowledge of MK-cranes as a result of previous attendance or attendance to training courses for older MK-equipment.
Intricate knowledge of MK-cranes is highly advantageous.
- Objective:** Further development of basic knowledge already acquired from the MK basic training course
Erection, dismantling and operation of the MK 63
Commissioning of cranes ready for operation

Carrying out of maintenance, repair and adjustment tasks
- Content:** Operation: (4.5 d. Thomas Braunger)
Superstructure Erection / Dismantling
Undercarriage Travel programs Levelling
Maintenance and upkeep
Detailed troubleshooting and rectification of faults
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
Monday: 10:00 - 16:00
Tuesday - Thursday: 08.00 - 16:00
Friday: 08:00 - 11:30
- Speaker:** Thomas Braunger
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



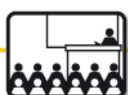
MACHINE TRAINING MK 100 / MK 110

- Category of persons:** After-sales service technicians with basic knowledge of MK-cranes as a result of previous attendance or attendance to training courses for older MK-equipment.
- Objective:** Further development of basic knowledge already acquired from the MK basis training.
- Erection, dismantling and operation of the MK 100 / MK 110
Commissioning of cranes ready for operation
Carrying out of maintenance, repair and adjustment tasks
- Content:** Operation: (4.5 d. Thomas Braunger)
Superstructure Erection / Dismantling
Undercarriage Travel programs Levelling
Maintenance and upkeep
Detailed troubleshooting and rectification of faults
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 4.5 days
Monday: 10:00 - 16:00
Tuesday - Thursday: 08.00 - 16:00
Friday: 08:00 - 11:30
- Speaker:** Thomas Braunger
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



MAINTENANCE TRAINING FOR THE MK 63 / MK 100 (SUPERSTRUCTURE)

- Category of persons:** After-sales service technicians or workshop personnel of the crane user
- Objective:** Carrying out of maintenance in accordance with the respective intervals (oil change, lubrication, etc.)
Repair of minor damage, adjustment tasks
Inspecting the equipment (brakes, limit switches, etc.)
Reading the error memory and the machine data
- Content:** Operation: (3 d. Thomas Braunger)
Special positions of the equipment for the carrying out of maintenance tasks in accordance with the respective intervals
Reading of machine data
Basic settings and functions of the brakes
Adjustment tasks on the equipment, visual inspection of the machine
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 3 days
Tuesday - Thursday: 08.00 - 16:00
- Speaker:** Thomas Braunger
- Info:** Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



CLIMBING TRAINING FOR THE 154 EC-HM

- Category of persons:** After-sales service technicians who have already attended the introductory training.
- Objective:** Climbing of a top slewing crane
- Content:**
- | | |
|---|---|
| Erection, climbing, tower bolt connections THEORY | (1.5 d. Paul Booch) |
| Climbing of the 154 EC-HM PRACTICAL Removing / installing the climbing frame | (1.5 d. Paul Booch, Markus Münt Hermann Buck) |
| Anchoring to buildings Climbing inside the building | (1.5 d. Paul Booch, Markus Münt) |
- Dates:** Upon request
Minimum number of participants: 6 persons
- Duration:** 3 days
Tuesday - Thursday: 08.00 - 16:00
- Speaker:** Paul Booch
- Info:** Alternative course provided if weather outdoors is poor:
Climbing with a separate climbing device
- Personal protective equipment:
It is imperative that overalls, safety boots, gloves and protective helmet are brought along to the course.



ADDRESSES FOR HOTELS IN BIBERACH AND SURROUNDING AREAS

Please note:

We recommend reservations for hotels be arranged by the participants themselves at one of the hotels recommended below. Should any problems arise regarding the reservation of hotel rooms, we would be more than happy to help.

Hotel addresses in Biberach

Hotel Drei König
Marktplatz 26
88400 Biberach
Tel.: 0049 (0)7351 58096
Fax: 0049 (0)7351 580999
www.hotel-drei-koenig.de

Hotel Eberbacher Hof
Schulstraße 11
88400 Biberach
Tel.: 0049 (0)7351 15970
Fax: 0049 (0)7351 159797
www.eberbacherhof.de

Hotel Garni Erlenhof
Erlenweg 18
88400 Biberach
Tel.: 0049 (0)7351 34750
Fax: 0049 (0)7351 347533
www.hotel-erlenhof.de

Hotel Kapuzinerhof
Kapuzinerstraße 17
88400 Biberach
Tel.: 0049 (0)7351 5060
Fax: 0049 (0)7351 506100
www.hotel-kapuzinerhof.de

Hotel zur Riss
Uferstraße 2
88400 Biberach
Tel.: 0049 (0)7351 50430
Fax: 0049 (0)7351 504350
www.hotel-zur-riss.de

Grüner Baum
Schulstraße 5-9
88400 Biberach
Tel.: 0049 (0)7351 802040
Fax: 0049 (0)7351 8020444
www.gruener-baum-bc.de

Zum Goldenen Hirsch
Riedlinger Straße 54
88400 Biberach
Tel.: 0049 (0)7351 9194
Fax: 0049 (0)7351 9118
www.hirschbiberach.de

Hotel addresses in surrounding areas of Biberach

Landhotel zur Pfanne
Auwiesenstr. 24
88400 Rindenmoos
Tel.: 0049 (0)7351 34030
Fax: 0049 (0)7351 340380
www.landhotel-pfanne.de

Hotel / Café Schloßblick
Brauereistraße 6
88447 Warthausen
Tel.: 0049 (0)7351 15290
Fax: 0049 (0)7351 152930
www.schlossblick-warthausen.de

Knopf & Knopf
Erlebniswelt
Museumsgässle 1
88447 Warthausen
Tel.: 0049 (0)7351 18930
Fax: 0049 (0)7351 189322
www.knopfundknopf.com

Grüner Baum
Heinrichsburger Str. 2
88454 Hochdorf
Tel.: 0049 (0)7351 2350
Fax: 0049 (0)7351 8717
www.gruener-baum-hochdorf.de

Hotel Maselheimer Hof
Kronenstraße 1
88437 Maselheim
Tel.: 0049 (0)7351 15050
Fax: 0049 (0)7351 150559
www.landhotelmaselheimerhof.de

Landgasthof Löwen
Hauptstraße 36
88456 Muttensweiler
Tel.: 0049 (0)7583 3165
Fax: 0049 (0)7583 927273

Hotel Adler
Häusener Straße 2
88444 Ummendorf
Tel.: 0049 (0)7351 32524
Fax: 0049 (0)7351 32524

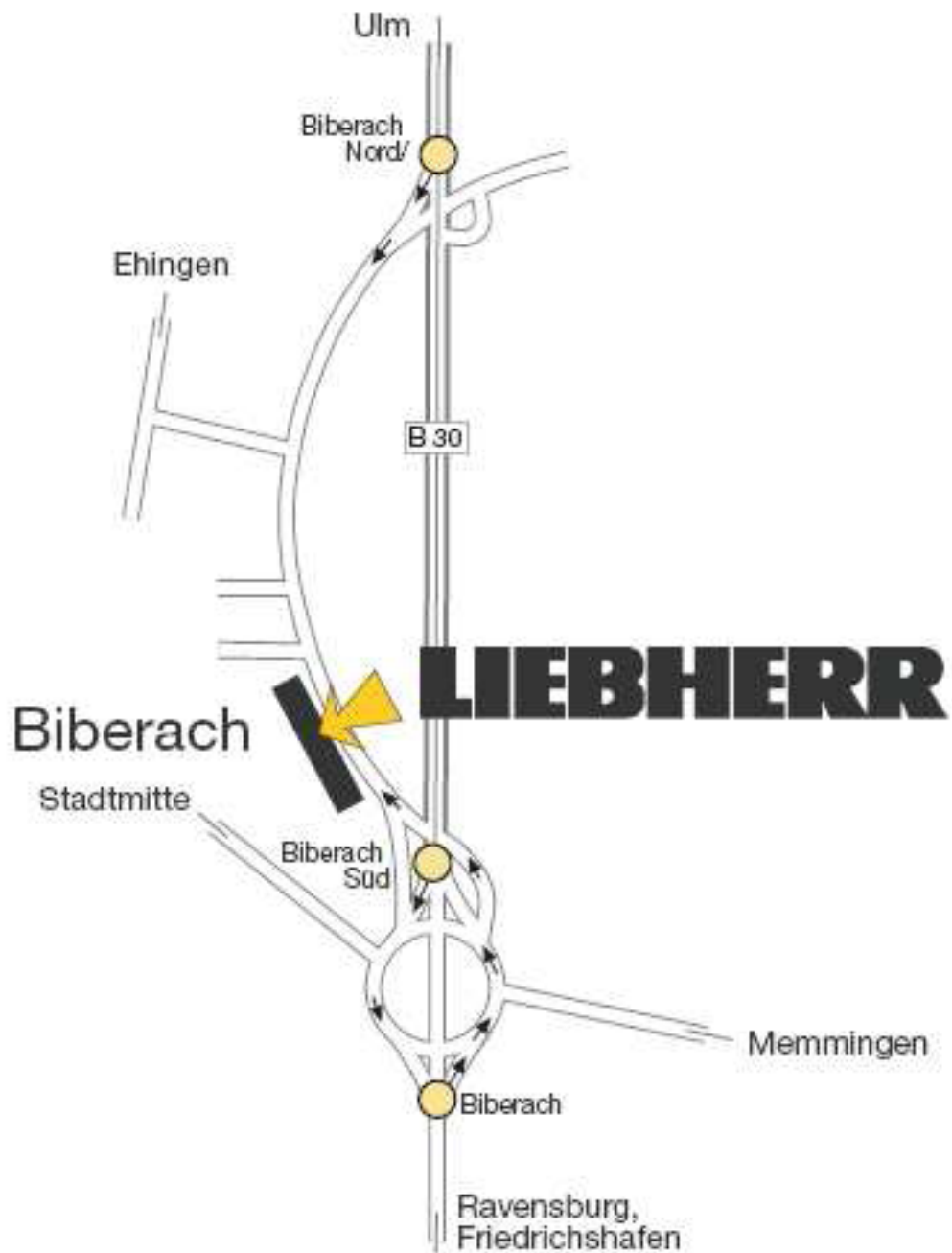
Bräuhaus Ummendorf
Bachstraße 10
88444 Ummendorf
Tel.: 0049 (0)7351 44430
Fax: 0049 (0)7351 444310
www.braeuhaus.de

Gasthof Gaum
Bahnhofstraße 7
88444 Ummendorf
Tel.: 0049 (0)7351 34010
Fax: 0049 (0)7351 340134
www.gasthof-gaum.de

Parkhotel Jordanbad
Im Jordanbad 7
88400 Biberach
Tel. 0049 (0)7351 343300
Fax 0049 (0)7351 343310
www.parkhotel.jordanbad.de



DIRECTIONS



SITE PLAN FOR LIEBHERR-WERK BIBERACH GMBH

