Kawasaki Robotics Academy

Seminar Overview 2024

Date: 08.2024

Contents

General Information

This catalogue contains an overview of our seminars and their contents. The contents of the seminars are shown in presence or as web seminar (online).

The content covers all areas related to Kawasaki robots and their operation. Our offer includes customer-specific or application-related seminars as well as standard seminars designed by us.

Locations seminars

The seminars take place at our main office in Neuss or as a web seminar (online). If you have any questions as to whether a web seminar (online) is suitable for you, we will be happy to advise you.

Seminar dates

All dates for English-language seminars will be arranged individually . Please contact us at academy@kawasakirobotics.de or +49(0)2131-3426-1350.

Seminar times

Monday - Thursday from 9.00 a.m. to 4.00 p.m.
Friday from 9.00 a.m. to 2.00 p.m.
(Break time daily from 12.00 p.m. to 12.30 p.m.)

Please note the general seminar conditions of the Kawasaki Robotics Academy.

Overview Basic-, Advanced- and Application-Seminars

We offer a range of different seminars. Our basic seminars are the foundation for all further seminars. After completing a basic seminar, further advanced, application and option seminars are available.

Basic seminars

Robot Operation
Electrical Maintenance
Robot Programming
duAro Tablet

Advanced seminars
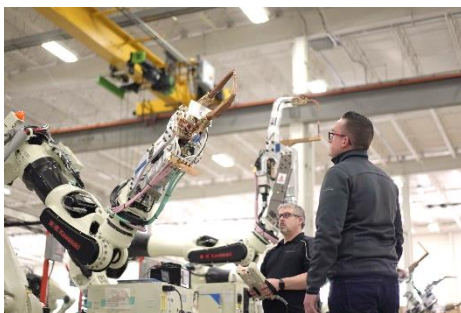

K-ROSET Simulation
Cubic-S
duAro AS Programming

Application seminars

Operation and Programming of Painting Robots
Integration of Painting Robots
Arc Welding
Cleanroom
Picking System

<u>Overview Options-Seminars</u>

Some functions of the robot system go beyond the standard basic functions. The robot can be quickly and easily expanded with software and hardware components that support the respective application. Some of these software options are already available and can be easily activated and integrated into the workflow.

More detailed information and descriptions can be found at the back of this catalogue

Conveyor Tracking	→ *Conveyor belt tracking*
General Fieldbus	→ *Fieldbus connection of the robot*
Collision Detection	→ *Collision detection*
Soft Absorber/Changing Gain	→ *Soft switching of axes, such as for injection moulding removal*
Interface Kommunikation	→ *Setting up interfaces (TCP, IP / UDP)*
K-Logic/K-Ladder	→ *Integrated PLC Software*
Externe Achsen	→ *Setting up and programming external drive axes*
K-SPARC	→ *Create and programme palletising patterns in advance*
K-VFinder Vision System	→ *Setting up a camera system for part recognition*
TREND Manager 2	→ *Set up diagnostic tool - preventive maintenance*
Data Storage	→ *Process data recording*
Fixed Tool	→ *Setting up external tools and integrating them into the programme*
Spin Control	→ *Endless rotating axes*

Explanation legend

	Target group		Requirements
	Contents		Duration
	Number of participants		Price
	Location		Dates
	Seminar package PLUS		

<u>Seminar Packages PLUS</u>

We have compiled useful and exciting seminar packages for you from our bestselling seminars - our PLUS packages. This allows you to delve even deeper into the subject of robots.

The advantage for you:

When you book a PLUS package, you receive a **10% discount** compared to individual bookings.

You will find an overview of our PLUS packages on the following pages.

Robot Programming PLUS package

When you attend our **robot programming** seminar, you will get to know our **K-Roset** simulation software. It's not difficult to get our participants excited about this software, which makes programming so much easier. And to ensure that the topic of safety is included in your projects right from the start, we have also completed the package with the **Cubic-S seminar**.

This package is not only suitable for beginners, but is also aimed at experienced users and is an ideal choice for retrainees.

Seminars in the PLUS package
- Robot programming
- K-Roset
- Cubic-S

Target Group
- System Integrator
- Developer
- Programmer

Package Price
on request

on request

Electrical Maintenance PLUS package

In our **robot operation seminar**, you will learn how to operate your robot safely and troubleshoot simple faults. In the **electrical maintenance seminar**, you will gain an overview of the inside of the controller and we will show you how to replace individual components. With these seminars, you will be optimally equipped for your daily work with your robot.

Seminars in the PLUSpackage
• Robot operation
• Electrical maintenance

Target group
• Maintenance engineer
• Service engineer
• Electrical technician

Package Price
on request

on request

Robot Operation

The aim of this seminar is for you to be able to operate the robot safely and to detect and rectify simple faults and correct positions.

Target group
- System operator
- Shift supervisor
- Production manager

Requirements
- Technical knowledge

Content
- Safety instructions
- Robot system overview
- Start the robot system and switch it off
- Safe operation of the robot system
- Troubleshooting (Basic)

2 days   3 – 5 participants

on request

Location   on request
Kawasaki Robotics Academy Neuss

Electrical Maintenance

At the end of this seminar, you will be able to independently record, analyse and professionally rectify faults on the robot system.

Target group
- Maintenance engineer
- Service engineer
- Electrical technician
- Persons with electrical knowledge

Requirements
- Technical knowledge
- Knowledge of electrical engineering
- Electrical instruction in the field of electrical engineering

Content
- Safety instructions
- Overview of the electronic components
- Configuration and function of the robot controller
- Circuit diagram overview
- Error analysis
- Create a data backup
- Creation of a test program
- Troubleshooting

2 days   3 – 5 participants

on request

Location   On request
Kawasaki Robotics Academy Neuss

➡ This seminar does not take place in our seminar rooms, but in our demo hall. Therefore, it is mandatory for our participants to wear **safety shoes**. Please bring them yourself to the seminar date.

Robot Programming

At the end of this seminar, you will be able to operate the robot safely and analyse simple faults, as well as create programs in the AS programming language, background tasks and individual user interfaces (Interface panels). At the end of the seminar you will have created a complete palletising program.

Target group
- System Integrator
- Developer
- Programmer

Requirements
- Technical knowledge
- PC knowlege

Content
- Safety instructions
- Robot system overview
- Start the robot system and switch it off
- Safe operation of the robot
- AS programming language
- Create/correct positions
- Input/output signals
- Creation of the TCP (Tool Centre Point)
- Background tasks (process control)
- Creating individual user interfaces (Interface panel)
- Simple fault analysis during system standstill (Basic)

4 days

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

duAro Tablet

At the end of this seminar you will be able to operate the robot safely and analyse simple faults, create coherent programs with the tablet and set up the safety module.

Target group
• System integrator
• Developer
• Programmer

Requirements
• Technical knowledge
• Knowledge of electrical engineering/mechanics
• Basic knowledge of PC/Android tablets

Content
• Safety instructions
• Robot system overview
• Safe switch-on and switch-off procedure
• Safe operation of the robot
• Programming with the tablet
• Configuration of the safety module

3 days   2 – 4 participants

on request

Location   on request
Kawasaki Robotics Academy Neuss

Cubic-S

The aim of this seminar is to enable you to parameterise the Cubic-S safety module and integrate the hardware into the robot system.

Target group
- Anlagenplaner
- Entwickler
- Programmierer

Requirements
- Technical knowledge
- PC knowledge
- Participation in the seminar "Robot programming"

Content
- Safety instructions
- Integration of the Cubic-S safety module into the robot system
- Parameterising the individual safety settings of the Cubic-S module
- Create/adapt safety zones
- Determination/interconnection safe inputs and outputs

2 days

2 – 4 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

K-ROSET Simulation

At the end of this seminar you will be able to create your own robot simulations using the PC software K-ROSET.

Target group
- System Integrator
- Developer
- Programmer

Requirements
- Technical knowledge
- PC knowledge
- Participation in the seminar "Robot programming"

Content
- Installation/functional overview of the software
- How to move the robot in simulation software
- Create and load tool data
- Create geometries
- Import objects
- Create robot programs
- Cycle time analysis
- Obstacle contour

2 days

3 – 5 participants

on request

Web-Seminar (online),
or also possible at Kawasaki Robotics
Academy Neuss

on request

duAro AS-Programming

The aim of this seminar is for you to be able to operate the robot safely and analyse simple faults, create programs using our AS programming language and set up the safety module.

Target group
- System Integrator
- Developer
- Programmer

Requirements
- Technical knowledge
- Knowledge of electrical engineering/mechanics
- PC knowledge
- Participation in the seminar "Robot programming" and „duAro Tablet"

Content
- Safety instruction
- Robot system overview
- Safe switch-on and switch-off procedure
- Safe operation of the robot
- AS programming language (Basic)

1 day

2 – 4 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

Operation and Programming of Painting Robots

At the end of this seminar, you will be able to operate the robot safely, create painting programs and adapt the databases for managing the painting parameters.

Target group
• Developer
• Programmer

Requirements
• Technical knowledge
• PC knowledge

Content
• Safety instruction
• Robot system overview
• Safe switch-on and switch-off procedure
• Moving the robot in manual mode (teach mode)
• Setting of tool coordinates (spray distance)
• Creation/teaching of coating programs with defined commands
• Creation/use of databases to manage and control the paint supply
• Creating programs for automatic path generation
• Creation of subroutines for cleaning, home position and paint supply control
• Observation of wrist and avoidance of singularities

3 days

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

The painting process is simulated during the seminar.

Integration of Painting Robots

At the end of the seminar, you will be able to commission the robot system, integrate BUS participants and other painting-specific components into the robot system and create a painting main program and use process-based signals.

- System Integrator
- System planner
- Developer
- Programmer

- Technical knowledge
- PC knowledge

- Safety instruction
- Robot system overview
- Safe switch-on and switch-off procedure
- Necessary first steps for putting the robot into operation
- Moving the robot in manual mode (teach mode)
- Setting of tool coordinates (spray distance)
- Setup of General fieldbus, analog output card and Conveyor tracking into the robot system
- Creation of robot system - PLC communication (reserved signals start, stop and program selection)
- Creation/preparation of the painting main program
- Setting up signals for paint-specific applications
- Explanation of paint-specific robot settings
- Creating individual user interfaces (Interface panel)
- Calling up subroutines for cleaning, basic position run and paint supply control
- Explanation of PC programs for paint signal control

4 days

3 – 5 participant

on request

Location
Kawasaki Robotics Academy Neuss

on request

The painting process is simulated during the seminar.

Arc Welding

At the end of this seminar, you will be able to independently integrate the welding power source into your robot application, develop application-specific welding programs, select the parameters and options required in the welding process and analyse simple faults.

Target group
- System Integrator
- Developer
- Programmer

Requirements
- Technical knowledge

Content
- Safety instruction
- Welding robot system overview
- Setting up external axes (software)
- Connection of robot to welding power source
- Integration of General fieldbus into the robot system
- Allocation of signals and digital I/O
- Explanation of the various setting options in the robot software
- Setting of tool coordinates
- Creation of block and AS program structures

3 days

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

Cleanroom

The aim of this seminar is for you to be able to operate the robot safely and analyse simple errors, teach positions and simulate motion sequences.

Target group
- System Integrator
- Developer
- Programmer

Requirements
- Technical knowledge
- PC knowledge

Content
- Safety instruction
- Robot system overview
- Explanation of KRET (Teach tool)
- Introduction to KMTerm and KR3D (simulation program)
- Importing KRET-generated positions into the robot
- Explanation of the most important commands (via manual)
- Performing simulation and collision free check exercise
- Introduction to the KSUtillity software
- Exercises on the real robot

3 days   3 – 5 participants

on request

Location   on request
Kawasaki Robotics Academy Neuss

TREND Manager 2

At the end of this seminar you will be able to set up and use the TREND Manager 2 software. TREND Manager 2 can inform you in time about a changing robot condition with the help of continuously collected data.

Target group
- Commissioning engineer
- Maintenance staff
- Operations manager

Requirements
- Technical knowledge
- PC knowledge
- Knowledge of AS programming language
- Knowledge of robot operation

Content
- Function overview TREND Manager 2
- Installing and setup the software
- Creation and parameterisation of a sample project
- Integration into existing robot programs
- Additional functions (e.g. notification via e-mail in case of malfunction etc.)
- Analysis options

1 day   3 – 6 participants

on request

Web-Seminar (online)   on request

Picking System

At the end of this seminar you will be able to realise a complete pick and place application with a Y-series robot.

Target group
- System Integrator
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation
- Participation in the seminars "Robot programming", "Conveyor tracking", "Interface communication" and "K-VFinder Vision System".

Content
- Safety instruction
- System application overview
- Functional overview of the programs
- Setup the system by using of example programs

1 day

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

Conveyor Tracking

The aim of this seminar is to enable you to install the relevant hardware components in the robot controller and to define the system-relevant settings for conveyor tracking. Furthermore, program examples with the Conveyor tracking function will be created.

Target group
- Programmer
- Commissioning engineer

Requirements
- Technical knowledge
- Knowledge of electrical engineering
- Knowledge of AS programming language
- Knowledge of robot operation

Content
- Safety instruction
- General overview Conveyor tracking
- Installation procedure of the hardware components
- Function-relevant settings
- Safe operation of the robot with Conveyor tracking
- Creation of program examples
- Troubleshooting (Basic)

2 days   3 – 5 participants

on request

Location   on request
Kawasaki Robotics Academy Neuss

General Fieldbus

At the end of this seminar you will be able to implement a fieldbus module in the robot system and realise a signal exchange between your PLC and the robot.

Target group
- Commissioning engineer
- Programmer/PLC programmer

Requirements
- Knowledge of robot operation
- PC knowledge

Content
- Safety instruction
- Overview of supported fieldbus systems
- Hardware installation in the robot controller
- Explanation of the fieldbus setting in the teach pendant
- Creating a fieldbus communication between PLC and robot system (PROFINET)
- Checking the input and output signals between PLC and robot system (PROFINET)

1 day   3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also   on request
possible as a web seminar (online)

Collision Detection

The aim of this seminar is for you to be able to set up and use the optional collision detection of the robot system professionally.

Target group
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation

Content
- Safety instruction
- Overview of the Collision detection function
- Function-relevant settings
- Using Collision detection in teach and repeat mode
- Troubleshooting (Basic)

1 day   3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also   on request
possible as a web seminar (online)

Soft Absorber/Changing Gain

At the end of this seminar you will be able to set up and use the optional Soft absorber/Changing gain function of the robot system professionally.

Target group
- Commissioning engineer
- Programmer/PLC programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation

Content
- Safety instruction
- Overview of the Soft absorber/Changing gain function
- Function-relevant settings
- Using Soft absorber/Changing gain in the robot program
- Troubleshooting (Basic)

1 day

3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)

on request

Interface Communication

The aim of this seminar is to enable you to implement communication of various protocols in the robot system and to realise data exchange between peripherals and the robot system. Possible areas of application are, for example, camera systems or sensors connected to the robot system.

Target group
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation

Content
- Safety instruction
- Overview of the supported protocols
- Creating a communication between periphery and robot system
- Checking the data exchange between periphery and robot system
- Troubleshooting (Basic)

1 day   3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also   on request
possible as a web seminar (online)

K-Logic/K-Ladder

At the end of this seminar you will be able to use the optional K-Logic function in the robot system. The K-Logic function is a software-based PLC that is operated directly on the robot system.

Target group
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation

Content
- Safety instruction
- Overview of the K-Logic function
- Using the K-Ladder software
- Creating a sample program
- Troubleshooting (Basic)

2 days

3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)

on request

External Axis

The aim of this seminar is to enable you to install the relevant hardware components in the robot controller and to define the system-relevant settings for the external axis. Furthermore, program examples are created in connection with an external axis.

Target group
• Commissioning engineer
• Programmer

Requirements
• Technical knowledge
• Knowledge of electrical engineering
• Knowledge of AS programming language
• Knowledge of robot operation

Content
• Safety instruction
• General overview
• Safe installation procedure of the hardware components
• Function-relevant settings
• Operation of the robot with Conveyor tracking
• Creation of programming examples
• Troubleshooting (Basic)

2 days   3 – 5 participants

on request

Location   on request
Kawasaki Robotics Academy Neuss

K-SPARC

At the end of this seminar you will be able to create a palletising pattern or program using the optional function K-SPARC in the simulation software K-ROSET.

Target group
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- Knowledge of the AS programming language
- Knowledge of robot operation
- Knowledge in handling the software K-ROSET

Content
- Overview of the K-SPARC function
- Creating a sample project with K-SPARC
- Checking the program function in K-ROSET

1 day   3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also   on request
possible as a web seminar (online)

K-VFinder Vision System

The aim of this seminar is for you to be able to commission the Kawasaki Vision System K-VFinder.

Target group
- Commissioning engineer
- Programmer

Requirements
- Technical knowledge
- PC knowledge

Content
- Function overview K-VFinder
- Connection of a camera
- Calibration and distortion correction
- Teaching object characteristics
- Additional functions (e.g. height correction, gripping range monitoring, inspection)

1 day

3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also possible as a web seminar (online)

on request

Data Storage

The aim of this seminar is to enable you to create measurement recordings of different robot parameters such as motor current, axis speed etc. with the help of the Data storage function. The subsequent import of the measurement into Excel is also part of this seminar.

Target group
- Maintenance engineer
- Programmer

Requirements
- Technical knowledge
- PC knowledge
- Knowledge of robot operation

Content
- Function overview Data storage
- Creation and configuration of a measurement logging
- Exporting the measurement data
- Import into Excel

1 day   3 – 5 participants

on request

Kawasaki Robotics Academy Neuss or also   on request
possible as a web seminar (online)

Fixed Tool

At the end of this seminar you will be able to set up an external tool in the robot controller and integrate it into a motion program.

Target group
- Commissioning engineer
- Programmer
- System operator

Requirements
- Technical knowledge
- PC knowledge
- Knowledge of AS programming language
- Knowledge of robot operation

Content
- Function overview Fixed tool
- Setup an external TCP
- AS language command overview
- Teaching with an external tool
- Integration in a movement program

1 day

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

Spin Control

The aim of this seminar is for you to be able to set up the optional Spin control function in the robot system and integrate it into a movement program.

Target group
- Commissioning engineer
- Programmer
- System operator

Requirements
- Technical knowledge
- PC knowledge
- Knowledge of AS programming language
- Knowledge of robot operation

Content
- Function overview Spin control
- Setup the function
- AS language command overview
- Integration into a movement program
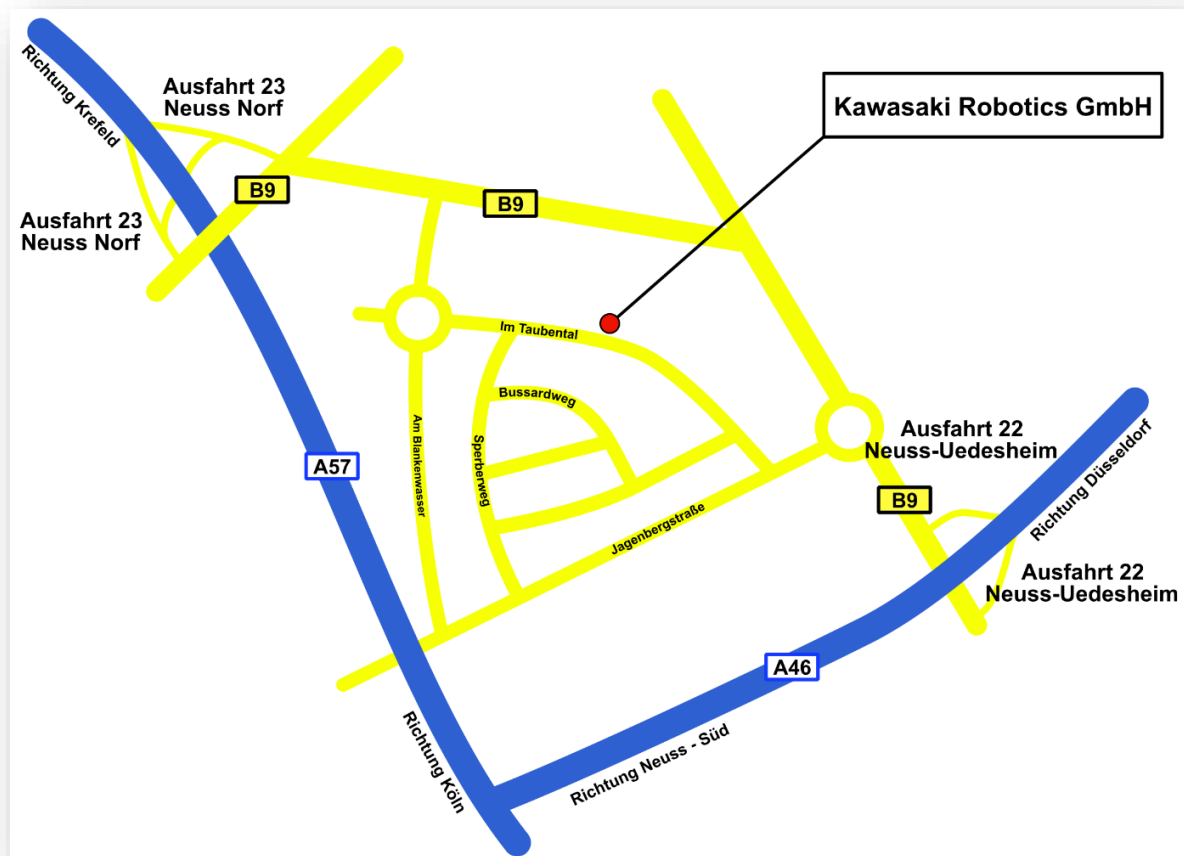
1 day

3 – 5 participants

on request

Location
Kawasaki Robotics Academy Neuss

on request

Directions to the Kawasaki Academy in Neuss

Adress

Kawasaki Robotics GmbH

Im Taubental 32

41468 Neuss

Phone: +49 (0) 21 31/34 26 - 0

Fax: +49 (0) 21 31/34 26 - 22

<p style="text-align:center">**<u>Hotels in Neuss</u>**</p>

For your information, here is a selection of accommodation in Neuss.

Mercure Hotel Düsseldorf Neuss

Am Derikumer Hof 1
41469 Neuss

+49 (0) 2131 138-0
info.neu01@gchhotelgroup.com

https://www.gchhotelgroup.com/de/hotel/mercure-hotel-duesseldorf-neuss

→ We have agreed a Kawasaki company rate with the Hotel Mercure, which is also available to our seminar participants. When booking by telephone, please state that you are visiting a seminar at our company.

Hotel-Gasthof Vater Rhein

Oberstraße 4
41541 Dormagen (Stürzelberg)

+49 (0) 2133 71930
info@gasthof-vaterrhein.de

https://www.gasthof-vaterrhein.de/

https://hotel-duesseldorf-neuss.dorint.com/de

Dorint Kongresshotel Düsseldorf / Neuss

Selikumer Straße 25
41460 Neuss

+49 (0) 2131 262-0

info.neuss@dorint.com

Contact

Welcome to the Kawasaki Robotics Academy

Kawasaki Robotics GmbH

Im Taubental 32 │ D-41468 Neuss

📞 +49 2131 – 3426-1350

✉ Academy@kawasakirobotics.de

Business hours

Monday to Thursday
8.00 a.m. to 5.00 p.m.

Friday
8.00 a.m. to 3.00 p.m