



培训手册 2016

Training Manual 2016

欢迎来到ABB机器人培训中心

Welcome to ABB Robot Training Center

ABB是工业机器人的先行者和世界领先的机器人制造厂商，致力于研发、生产机器人已有40多年的历史，拥有种类繁多、应用全面的机器人产品、技术和服务，以及全球超过300,000套机器人的装机量。

ABB机器人早在1994年就进入了中国市场。2005年，ABB开始在上海制造工业机器人并建立了国际领先的机器人生产线。同年，ABB在上海设立了机器人研发中心。2006年，ABB将机器人全球业务总部落户上海。

ABB机器人上海培训中心为客户提供系统的标准化和定制化机器人培训课程，并为客户不同岗位员工提供机器人使用技能的成长路线课程规划，客户通过学习机器人初级、中级和高级课程，可以满足机器人系统的操作、编程、维护保养、电气和机械维修、工作站模拟等工作，最大限度的减少现场机器人停机时间，提高机器人使用效率。

ABB机器人上海培训中心拥有良好的培训环境、专业的培训讲师、充足的培训设备和多样化的培训课程，保证客户在理论学习的同时，拥有足够的实际操作练习；我们可以提供在ABB机器人培训中心和客户现场的培训，客户通过考核后，颁发ABB机器人培训证书。

学，无止境；学，业有成。

ABB机器人培训中心将在企业与个人的发展道路上陪您走得更高更远。

As a leader and pioneer in robotic technology, ABB provides the widest robotic product portfolio, technology, and services. ABB has installed more than 300,000 robots worldwide.

ABB Robotics Division entered Chinese market as early as 1994. In 2005, a world-class industry robot production line was built in Shanghai. And a R&D center was built in Shanghai in the same year. Since 2006, Shanghai became the global headquarter of ABB Robotics Division.

ABB robotics training center, operating in Shanghai, is always concentrating on developing and delivering of the professional robotics training solutions. It provides six categories of standard courses including Operation, Programming, Electrical Service, Mechanical Maintenance, Software and Application. Meanwhile, the customized courses are also available if you have more specific requirement. We are trying our best to help the customer to reduce risks and improve productivity through the training.

ABB robotics training center provides professional training facility and experienced instructors. You will get not only the detailed theoretical knowledge but also the sufficient practice during the training. The trainee, who passed the examination, could receive the certificate after the training.

ABB robotics training center always makes you and your company better and better.

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机器人培训

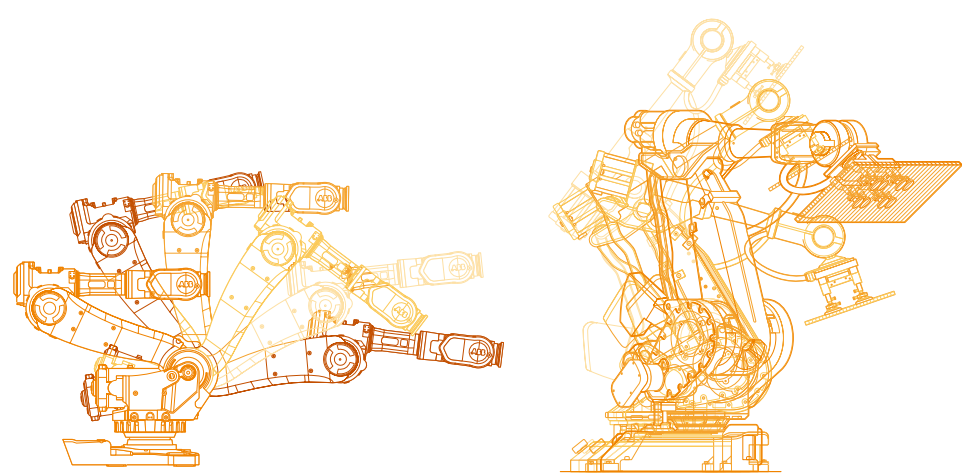
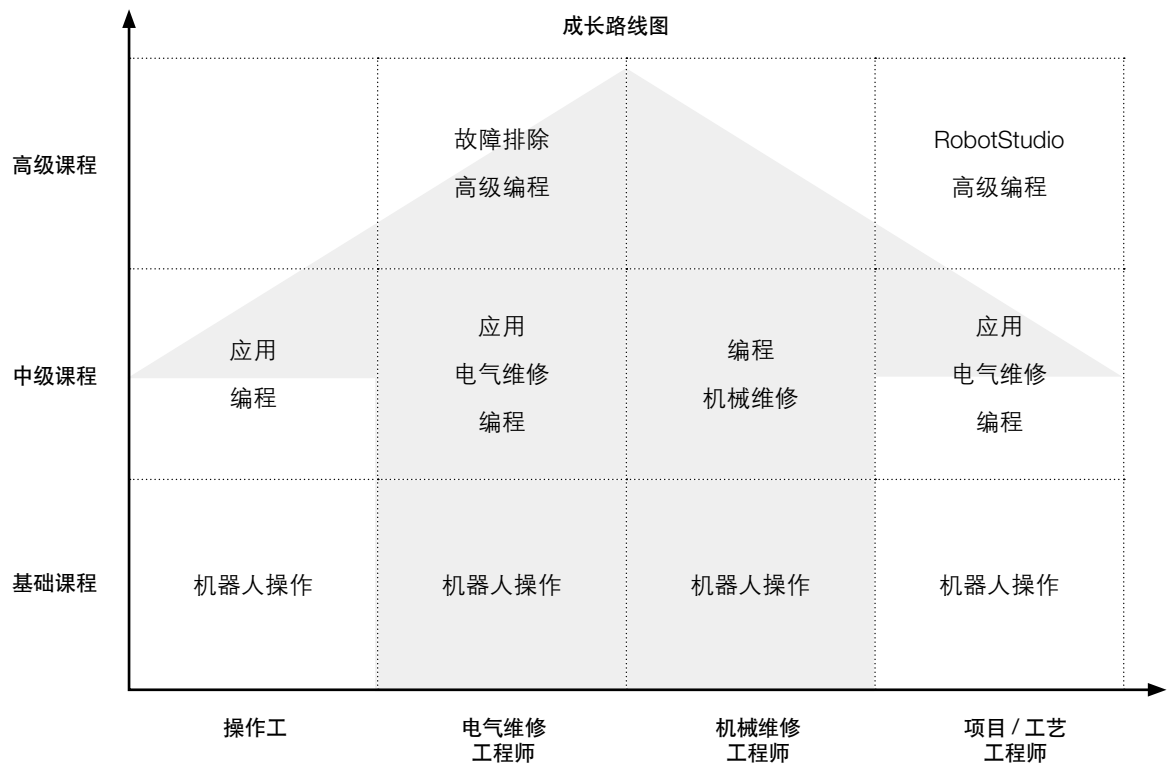
课程选择

欢迎来到上海ABB机器人培训中心，我们共有6大类48门课程可供阁下选择。

您可以参考以下成长路线图，在下一个页面选择您需要的课程。

如果您已经知道您需要的课程，请直接进入下一个页面。

如果您对课程有特别需求，我们也乐意为您提供定制化培训。



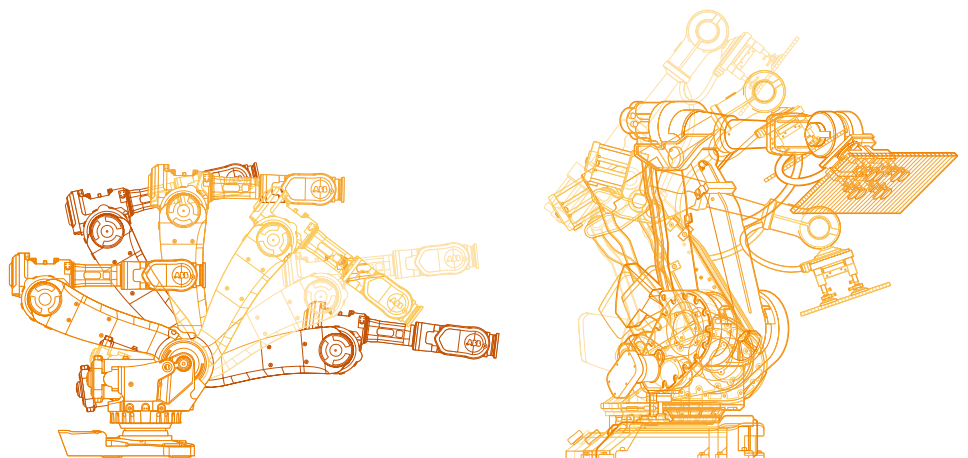
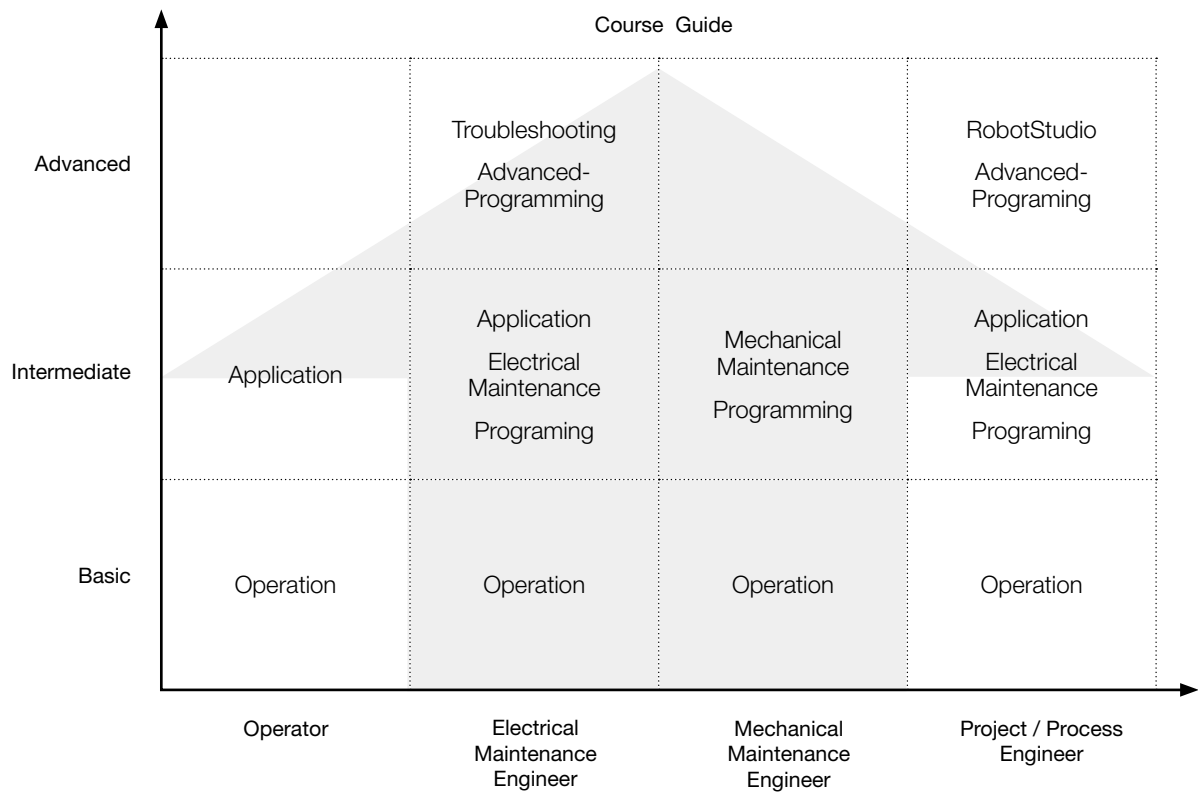
Robotics Training Course Guide

Welcome to ABB training center Shanghai. We provide 6 categories, 48 courses, for you.

Please refer to the following training guide to make your decision.

Please go to next page, if you know the course you need.

The customized courses is available, if you have more specific requirement .



机器人培训 分类



▪ 机器人操作



▪ 机械维修



▪ 编程



▪ 软件



▪ 电气维修



▪ 应用



Robotics Training Category



- Operation



- Mechanical Maintenance



- Programming



- Software



- Electrical Maintenance



- Application



工业机器人部分

Industry Robot

- CNIR101 IRC5 机器人操作
- CNIR102 IRB 14000 操作
- CNIR103 IRC5 机器人现场安装
- CNIR201 IRC5 机器人基础编程
- CNIR202 IRC5 机器人高级编程
- CNIR203 IRB 14000 编程
- CNIR204 S4C+ 基础编程
- CNIR205 S4C+ 高级编程
- CNIR301 IRC5 机器人电气原理
- CNIR302 IRC5 Compact 机器人故障处理
- CNIR303 IRC5 Compact 电气原理
- CNIR304 IRC5 Compact 故障排除
- CNIR305 IRB 14000 电气原理
- CNIR401 IRB 6640 机械维修 (6620)
- CNIR402 IRB 2400 机械维修 (1400/1410/4400)
- CNIR403 IRB 360 机械维修 (340)
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- CNIR408 IRB 140 机械维修
- CNIR409 IRB 1520 机械维修
- CNIR410 IRB 14000 机械维修
- CNIR501 RobotStudio 软件培训
- CNIR502 PickMaster 3
- CNIR601 弧焊工艺应用
- CNIR602 点焊工艺应用
- CNIR603 SafeMove & EPS 应用
- CNIR604 视觉系统
- CNIR605 MultiMove 应用
- CNIR101 IRC5 Operation
- CNIR102 IRB 14000 operation
- CNIR103 IRC5 Installation instruction of Industrial robot
- CNIR201 IRC5 Basic Programming
- CNIR202 IRC5 Advanced Programming
- CNIR203 IRB 14000 Basic programming
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- CNIR408 IRB 140 Mechanical Maintenance
- CNIR409 IRB 1520 Mechanical Maintenance
- CNIR410 IRB 14000 Mechanical
- CNIR501 RobotStudio software Training
- CNIR502 PickMaster 3
- CNIR601 Arcwelding Application
- CNIR602 Spotwelding Application
- CNIR603 SafeMove & EPS Application
- CNIR604 Integrated Vision
- CNIR605 MultiMove Application

机器人操作

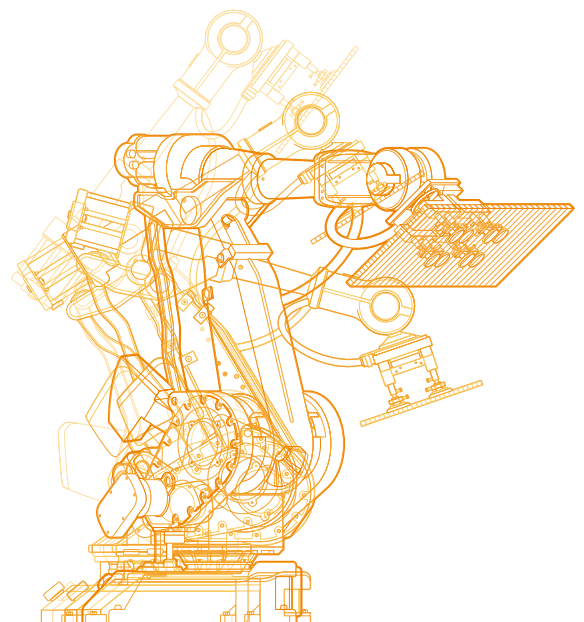
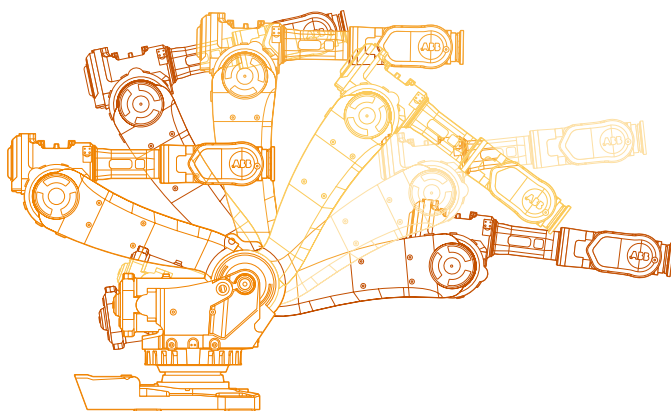
Operation

工业机器人

- CNIR101 IRC5 操作
- CNIR102 IRB 14000 操作
- CNIR103 IRC5 机器人现场安装

Industry Robot

- CNIR101 IRC5 Operation
- CNIR102 IRB 14000 Operation
- CNIR103 IRC5 Installation instruction of Industrial robot



CNIR101 IRC5 操作

CNIR101 IRC5 Operation

适用机型

- 使用 IRC5 控制系统的所有机型

课程对象

- 操作工
- 机械维修工程师
- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- 无

完成此课程后，您将可以

- 了解 ABB 工业机器人工作原理及系统架构
- 熟悉工业机器人安全操作规范
- 能够在手动模式下使用示教器操作机器人，修改程序中的位置点
- 在自动模式下加载并运行 RAPID 程序
- 能够保存程序
- 备份系统
- 能够更新机器人零位

培训内容

- ABB 工业机器人系统介绍
- 安全操作规范，紧急情况处置
- 使用示教器操作机器人，修改位置点
- 调用系统中的例行程序
- 程序备份和系统备份方法介绍，实践
- 机器人零位更新方法介绍，实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 controller

Target Groups

- Operator
- Mechanical maintenance engineer
- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- None

After this training, you are able to

- Understand the structure and principle of ABB industry robot
- Be Familiar with industry robot safety guide
- Operate the robot independently
- Modify the position in program with TPU
- Load and run a program in auto mode
- Save the program
- Backup the system
- Update revolution counter

Contents

- ABB industry robot system introduction
- Safety instruction
- Operating robot with TPU
- Position modification with TPU in manual mode
- Load and run a program in auto mode
- Saving the program
- System backup
- Introduction of robot calibration
- Practice

Information

- Duration: 3 days
- Number of Participants: 4-8 persons

CNIR102 IRB 14000 操作

CNIR102 IRB 14000 operation

适用机型

- ABB IRB 14000 工业机器人

课程对象

- 操作人员
- 机械工程师
- 维护保养人员

知识要求

- 无

完成此课程后，您将可以

- 了解工业机器人系统
- 了解 ABB 工业机器人工作原理及系统架构
- 能够使用示教器操作机器人
- 能够在手动模式下使用示教器操作机器人，修改程序中的位置点
- 能够加载，运行 RAPID 程序
- 能够保存程序和备份系统
- 能够更新机器人零位

培训内容

- 工业机器人知识介绍
- ABB 工业机器人系统介绍
- ABB 示教器操作介绍
- 使用示教器操作机器人，修改位置点
- 调用系统中的例行程序
- 程序备份和系统备份方法介绍，实践
- 机器人零位更新方法介绍，实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Robot: IRB 14000

Target Groups

- Operator
- mechanical engineer
- maintenance engineer

Prerequisites

- None

After this training, you are able to

- Understand industrial robot structure and working principle
- Be able to use TPU move robot
- Be able to modify position in program in manual mode by TPU
- Be able to Load and run the program
- Be able to Save program and backup system
- Update robot zero position

Contents

- Industrial robot introduction
- ABB industrial robot system introduction
- Introduce TPU interface
- Operating robot by TPU, modify position
- Calling routine
- Save program and backup system, with excises
- Introduction of Updating robot revolution counter, with excises

Information

- Duration: 2 days
- Number of Participants: 4-8 persons

CNIR103 IRC5 机器人现场安装

CNIR103 IRC5 Installation instruction of Industrial robot

适用机型

- ABB 工业机器人（培训以 IRB 6640 为例）

课程对象

- 调试工程师
- 设备维护工程师

知识要求

- 电气基础知识
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人系统基本组成
- 掌握工业控制柜及机器人基本吊装知识
- 掌握工业控制柜、机器人和防爆吹扫机械安装知识
- 能够独立完成电气接线
- 能够简单移动机器人

培训内容

- ABB 机器人安全操作介绍
- 工业机器人系统介绍
- 控制柜及机器人吊装说明及实践
- 控制柜及机器人安装说明及实践
- 机器人系统相关电气连接讲解
- 手动操作机器人介绍与实践

课程信息

- 培训时间：1 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB industrial Robot（using IRB 6640 in training）

Target Groups

- Commissioning engineer
- Facility engineer

Prerequisites

- Basic knowledge of electric
- Basic knowledge of mechanics

After this training, you are able to

- Know the basic components of ABB Industrial robot system
- Understand the hoisting method of industrial robot
- Understand how to install the cabinet and robot on site
- Refer to the manual, finish the electrical installation independently
- Move the robot basically

Contents

- Safety instruction of Industrial robot
- Industrial robot system introduction
- Instruction and practice of cabinet & robot's hoisting
- Instruction and practice of cabinet & robot's Installation
- Instruction and practice of electrical Installation
- Present how to move the robot quickly

Information

- Duration：1 days
- Number of Participants：4-8 persons

编程

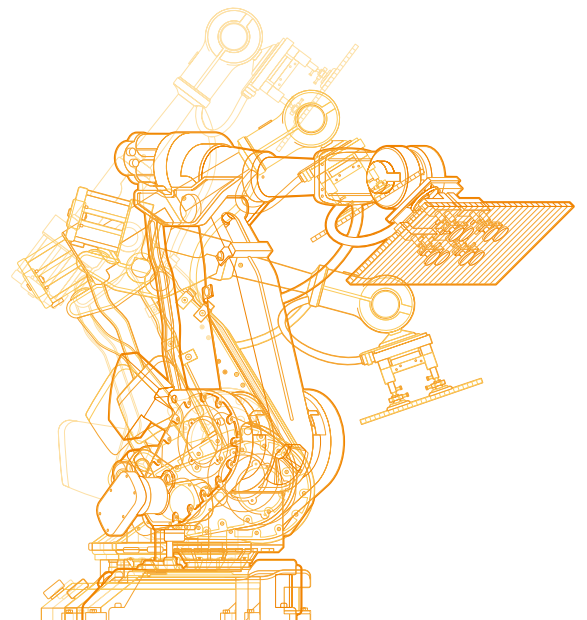
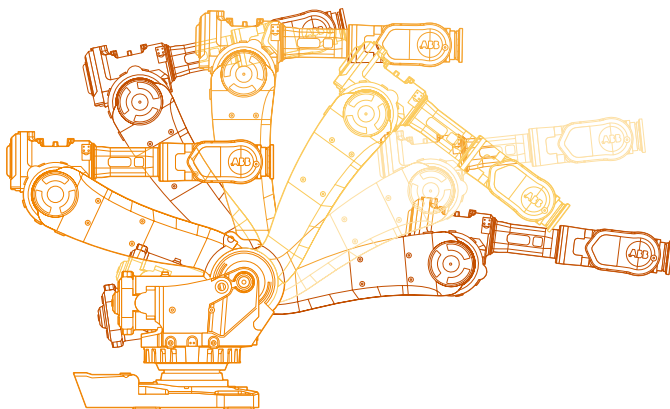
Programming

工业机器人

- CNIR201 IRC5 基础编程
- CNIR202 IRC5 高级编程
- CNIR203 IRB 14000 编程
- CNIR204 S4C+ 基础编程
- CNIR205 S4C+ 高级编程

Industry Robot

- CNIR201 IRC5 Basic Programming
- CNIR202 IRC5 Advanced Programming
- CNIR203 IRB 14000 Basic programming
- CNIR204 S4C+ Basic Programming
- CNIR205 S4C+ Advanced Programming



CNIR201 IRC5 基础编程

CNIR201 IRC5 Basic Programming

适用机型

- 使用 IRC5 控制系统的所有机型

课程对象

- 操作工
- 电气维修工程师
- 机械维修工程师
- 项目 / 工艺工程师

知识要求

- 基本英语阅读能力

完成此课程后，您将可以

- 了解 ABB 机器人功能架构
- 理解机器人工作中涉及到的各种坐标
- 使用示教器，在手动模式下移动机器人
- 定义编程需要用到的坐标系
- 了解 RAPID 语言结构并能调试简单例程
- 读、写简单程序，修改程序中的点
- 定义，修改机器人 I/O 信号
- 理解并使用各种重启方式
- 备份 / 加载程序，备份 / 恢复系统
- 用 RobotStudio Online 功能配置安装机器人系统
- 对机器人进行校准和转速计数器更新

课程内容

- 机器人操作安全
- ABB 工业机器人系统介绍
- 手动模式下的机器人操作
- 工业机器人坐标系统
- RAPID 编程语言介绍及其基本指令
- I/O 信号介绍及配置
- 机器人系统重启指令介绍
- 程序保存，系统备份
- 机器人系统配置及安装
- 校正方式介绍
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 controller

Target Groups

- Operator
- Electrical maintenance engineer
- Mechanical maintenance engineer
- Project/Process engineer

Prerequisites

- Basic English skill

After this training, you are able to

- Understand the structure and principle of ABB robot
- Understand different kinds of coordinate in robot system
- Operate robot with TPU in manual mode
- Use tool data and work-object data skillfully
- Understand RAPID structure, debug the simple program
- Modify position in the program with TPU
- Read and write some simple routines
- Configure I/O signals
- Use different restart modes
- Save and load program. Backup and restore system
- Modify and install the robot system with RobotStudio Online
- Update revolution counter, implement robot calibration

Contents

- Safety instruction
- ABB industry robot introduction
- Operating the robot in manual mode
- Robot coordinate systems
- Basic knowledge of RAPID
- Writing programs with the basic instructions
- I/O signal configuration
- Introduction of restart modes
- System backup and restore
- Robot system modification and installation
- Calibration: revolution counter update and fine calibration
- Practice

Information

- Duration: 5 days
- Number of participants: 4-8 persons

CNIR202 IRC5 高级编程

CNIR202 IRC5 Advanced Programming

适用机型

- 使用 IRC5 控制系统的所有机型

课程对象

- 项目 / 工艺工程师
- 电气维修工程师

知识要求

- IRC5 基础编程培训
- 了解机器人的应用

完成此课程后，您将可以

- 使用 RAPID 手册帮助编程
- 阅读较复杂的 RAPID 程序
- 了解数据的类型、性质及使用范围
- 了解多任务程序结构
- 编写带参数的例行程序
- 编写自定义函数
- 了解 WorldZone
- 掌握中断处理指令，并能够编写简单的中断类型的例行程序
- 掌握错误处理指令，并能够编写简单的错误处理程序

培训内容

- RAPID 程序结构
- 数据类型
- 例行程序的三种类型：Function，trap，procedure
- 多任务程序
- 中断处理
- 错误处理
- Worldzone 功能介绍
- 相关案例分析

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robots with IRC5 controller

Target Groups

- Project/Process engineer
- Electrical maintenance engineer

Prerequisites

- IRC5 Basic Programming
- Be familiar with field application

After this training , you are able to

- Work with RAPID manual
- Read some complex programs
- Understand the usage of data type
- Understand structure of multitask program
- Create background tasks
- Create a procedure with parameters
- Create customized functions
- Create customized data types
- Use WorldZone
- Program with complex instruction, such as Interrupt Handler, ERROR Handler

Contents

- Structure of RAPID program
- Data type
- Different type of routine: Function, trap, procedure
- Introduction of Multitask
- Interrupt Handler
- Error handler
- WorldZone
- Case study
- Practice

Information

- Duration: 5 days
- Number of participants: 4-8 persons

CNIR203 IRB 14000 编程

CNIR203 IRB 14000 Basic programming

适用机型

- ABB IRB 14000 工业机器人

课程对象

- 操作人员
- 机械工程师
- 电气工程师
- 项目 / 工艺工程师

知识要求

- 无

完成此课程后，您将可以

- 理解机器人工作中涉及到的各种坐标
- 使用示教器，在手动模式下移动机器人
- 定义编程需要用到的坐标系
- 了解 RAPID 语言结构并能调试简单例程
- 读、写简单程序，修改程序中的点
- 定义，修改机器人 I/O 信号
- 理解并使用各种重启方式
- 备份 / 加载程序，备份 / 恢复系统
- 用 RobotStudio Online 功能配置安装机器人系统
- 对机器人进行校准和转速计数器更新

课程内容

- ABB 工业机器人系统介绍
- 手动模式下的机器人操作
- 工业机器人坐标系统
- 机器人坐标系设置及 TCP 标定
- RAPID 编程语言介绍及其基本指令
- I/O 信号介绍及配置
- 机器人系统重启指令介绍
- 程序保存，系统备份
- 机器人系统配置及安装
- 校正方式介绍

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Robot: IRB 14000

Target Groups

- Operator
- Mechanical engineer
- Electrical engineer
- Process/Project engineer

Prerequisites

- None

After this training, you are able to

- Understand ABB robot structure
- Operate robot by TPU in manual mode
- Define tooldata and work object data
- Understand rapid structure, debug simple program
- Modify position in program by TPU
- Read or write simple instructions
- Configure I/O signals
- Load and Save program, backup and restore system
- Update revolution counter

Contents

- Operation
- System introduction
- Robot coordinate systems
- Basic knowledge of RAPID
- Writing programs with the basic instructions
- I/O signal configuration
- Introduction of restart modes
- System backup and restore
- Robot system modification and installation
- Calibration: revolution counter update and fine calibration
- Practice

Information

- Duration: 5 days
- Number of participants: 4-8 persons

CNIR204 S4C+ 基础编程

CNIR204 S4C+ Basic Programming

适用机型

- 使用 S4C+ 控制系统的所有机器人

课程对象

- 操作人员
- 机械工程师
- 电气工程师
- 项目 / 工艺工程师

知识要求

- 基本英语阅读能力

完成此课程后，您将可以

- 了解 ABB 机器人功能架构
- 理解机器人工作中涉及到的各种坐标
- 使用示教器，在手动模式下移动机器人
- 定义编程需要用到的坐标系
- 了解 RAPID 语言能调试简单程序
- 读、写简单程序，修改程序中的点
- 定义，修改机器人 I/O 信号
- 理解并使用各种重启方式
- 保存 / 加载程序，备份 / 恢复系统
- 对机器人进行校准和转数计数器更新

课程内容

- 机器人操作安全
- ABB 工业机器人系统介绍
- 手动模式下的机器人操作
- 工业机器人坐标系统
- RAPID 编程语言及其基本指令
- I/O 信号介绍及配置
- 机器人系统重启介绍
- 程序保存，系统备份
- 机器人系统配置及安装
- 校准方式介绍
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robot with S4C+ controller

Target Groups

- Operator
- Electrical maintenance engineer
- Mechanical maintenance engineer
- Project/Process engineer

Prerequisites

- Basic English skill

After this training, you are able to

- Understand the structure and principle of ABB robot
- Understand different kinds of coordinate in robot system
- Operate robot with TPU in manual mode
- Use tool data and work-object data skillfully
- Understand RAPID structure, debug the simple program
- Modify position in the program with TPU
- Read and write some simple routines
- Configure I/O signals
- Use different restart modes
- Save and load program. Backup and restore system
- Update revolution counter, implement robot calibration

Contents

- Safety instruction
- ABB industry robot introduction
- Operating the robot in manual mode
- Robot coordinate systems
- Basic knowledge of RAPID
- Writing programs with the basic instructions
- I/O signal configuration
- Introduction of restart modes
- System backup and restore
- Robot system modification and installation
- Calibration: revolution counter update and fine calibration
- Practice

Information

- Duration: 5 days
- Number of participants: 4-8 persons

CNIR205 S4C+ 高级编程

CNIR205 S4C+ Advanced Programming

适用机型

- 使用 S4C+ 控制系统的所有机器人

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- S4C+ 基础编程培训
- 了解机器人的应用

完成此课程后，您将可以

- 使用 RAPID 手册帮助编程
- 阅读较复杂的 RAPID 程序
- 了解数据的类型、性质及使用范围
- 了解多任务程序结构
- 编写带参数的例行程序
- 编写自定义函数
- 了解 WorldZone
- 掌握中断处理指令，并能够编写简单的中断类型的例行程序
- 掌握错误处理指令，并能够编写简单的错误处理程序

课程内容

- RAPID 程序结构
- 数据类型
- 例行程序的三种类型：Function, trap, procedure
- 多任务程序
- 中断处理
- 错误处理
- Worldzone 功能介绍
- 相关案例分析
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robot with S4C+ controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- S4C+ Basic Programming
- Be familiar with field application

After this training, you are able to

- Work with RAPID manual
- Read some complex programs
- Understand the usage of data type
- Understand structure of multitask program
- Create a procedure with parameters
- Create customized functions
- Use WorldZone
- Program with complex instruction, such as Interrupt Handler, ERROR Handler

Contents

- Structure of RAPID program
- Data type
- Different type of routine: Function, trap, procedure
- Introduction of Multitask
- Interrupt Handler
- Error handler
- WorldZone
- Case study
- Practice

Information

- Duration: 5 days
- Number of participants: 4-8 persons

电气原理及故障处理

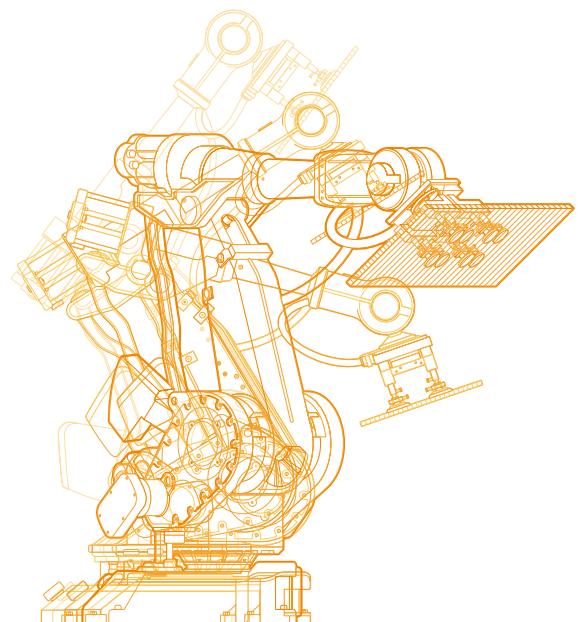
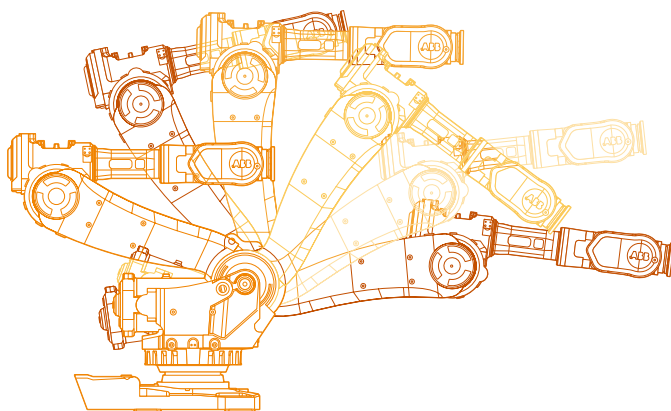
Electrical Principle and Troubleshooting

工业机器人

- CNIR301 IRC5 电气原理
- CNIR302 IRC5 Compact 故障排除
- CNIR303 IRC5 Compact 电气原理
- CNIR304 IRC5 Compact 故障排除
- CNIR305 IRB 14000 电气原理

Industry Robot

- CNIR301 IRC5 Electrical Principle
- CNIR302 IRC5 Compact Troubleshooting
- CNIR303 IRC5 Compact Electrical Principle
- CNIR304 IRC5 Compact Troubleshooting
- CNIR305 IRB 14000 electrical maintenance



CNIR301 IRC5 电气原理

CNIR301 IRC5 Electrical Principle

适用机型

- 使用 IRC5 单柜 / 双柜控制器的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5 操作培训

完成此课程后，您将可以

- 了解 IRC5 机器人系统结构
- 熟悉 IRC5 机器人各功能模块间关系及工作原理
- 读懂手册中的电路图，理解 IRC5 机器人中各电气模块功能
- 独立完成电气设备日常保养维护和备件替换

课程内容

- 机器人操作安全
- IRC5 机器人系统介绍
- IRC5 机器人中各电气模块功能及原理介绍。包括电源系统，计算机系统，驱动系统，总线与 I/O 系统，冷却系统，安全面板和 SMB 板
- 电路图讲解
- 机器人中各电气模块维护保养注意事项
- 操作实践

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 controller, including single cabinet, dual cabinet

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5 Operation

After this training, you are able to

- Be familiar with the structure of IRC5 controller
- Be familiar with the interfaces between the functional units
- Work with the circuit diagrams in the manual
- Understand the principle of each unit
- Handle the daily maintenance of electrical units independently
- Replace the failure part independently

Contents

- Safety instruction
- IRC5 robot system introduction
- The principle of each electrical unit, including power system, computer system, driver system, bus & I/O system, cooling system, panel board and SMB
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Replacement of the failure part
- Practice

Course information

- Duration: 2 days
- Number of participants: 4-6 persons

CNIR302 IRC5 Compact 故障排除

CNIR302 IRC5 Compact Troubleshooting

适用机型

- 使用 IRC5 单柜 / 双柜控制器的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5 基础编程培训
- IRC5 电气维修培训

完成此培训后，您将可以

- 熟悉 IRC5 机器人安全面板、主机箱中的指示灯状态含义
- 熟悉 IRC5 机器人示教器显示的故障代码含义
- 在熟悉机器人电路的基础上，能够根据 LED 状态和示教器上的告警信息定位故障
- 了解机器人故障处理的基本思路和常用方法
- 掌握不同启动方式的用法
- 能够独立处理常见故障

课程内容

- 机器人操作安全
- 机器人电气知识简介
- IRC5 机器人安全面板、主机箱中的指示灯状态介绍
- IRC5 机器人故障代码介绍
- 机器人不同启动方式的原理及介绍
- IRC5 机器人各电气模块常见故障介绍及案例分析
- 故障排除实践。在模拟的故障场景下定位故障并排除

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 controller, including single cabinet, dual cabinet

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5 Basic Programming
- IRC5 Electrical Maintenance

After this course ,you are able to

- Be familiar with the LED status
- Be familiar with the error code
- Work with the circuit diagrams in the manual
- Diagnose the faults, according to LED status and error code
- Know the basic method to diagnose the faults
- Know the usage of different restart mode
- Troubleshoot the IRC5 robot independently

Contents

- Safety instruction
- Basic electrical knowledge of industry robot
- Introduction of LED status in the controller cabinet
- Introduction of IRC5 error code
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in IRC5 robot
- Case study
- Practice. Analyze and diagnose the faults set by the trainer

Information

- Duration: 2 days
- Number of participants: 4-6 persons

CNIR303 IRC5 Compact 电气原理

CNIR303 IRC5 Compact Electrical Principle

适用机型

- 使用 IRC5 compact 控制器的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5 操作培训

完成此课程后，您将可以

- 了解 IRC5 机器人系统结构
- 熟悉 IRC5 机器人各功能模块间关系及工作原理
- 读懂手册中的电路图，理解 IRC5 compact 中各电气模块功能
- 独立完成电气设备日常保养维护和备件替换

课程内容

- 机器人操作安全
- IRC5 机器人系统介绍
- IRC5 compact 中各电气模块功能及原理介绍。包括电源系统，计算机系统，驱动系统，总线与 I/O 系统，冷却系统，安全面板和 SMB 板
- 电路图讲解
- 机器人中各电气模块维护保养注意事项
- 操作实践

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 compact controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5 Operation

After this training, you are able to

- Be familiar with the structure of IRC5 controller
- Be familiar with the interfaces between the functional units
- Work with the circuit diagrams in the manual
- Understand the principle of each unit
- Handle the daily maintenance of electrical units independently
- Replace the failure part independently

Contents

- Safety instruction
- IRC5 robot system introduction
- The principle of each electrical unit, including power system, computer system, driver system, bus & I/O system, cooling system, panel board and SMB
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Replacement of the failure part
- Practice

Course information

- Duration: 2 days
- Number of participants: 4-6 persons

CNIR304 IRC5 Compact 故障排除

CNIR304 IRC5 Compact Troubleshooting

适用机型

- 使用 IRC5 compact 控制器的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5 基础编程培训
- IRC5 compact 电气维修培训

完成此培训后，您将可以

- 熟悉 IRC5 compact 中安全面板、主机箱中的指示灯状态含义
- 熟悉 IRC5 compact 中示教器显示的故障代码含义
- 在熟悉机器人电路的基础上，能够根据 LED 状态和示教器上的告警信息定位故障
- 了解机器人故障处理的基本思路和常用方法
- 掌握不同启动方式的用法
- 能够独立处理常见故障

课程内容

- 机器人操作安全
- 机器人电气知识简介
- IRC5 compact 中安全面板、主机箱中的指示灯状态介绍
- IRC5 机器人故障代码介绍
- 机器人不同启动方式的原理及介绍
- IRC5 compact 中各电气模块常见故障介绍及案例分析
- 故障排除实践。在模拟的故障场景下定位故障并排除

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5 compact controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5 Basic Programming
- IRC5 compactElectrical Maintenance

After this course ,you are able to

- Be familiar with the LED status
- Be familiar with the error code
- Work with the circuit diagrams in the manual
- Diagnose the faults, according to LED status and error code
- Know the basic method to diagnose the faults
- Know the usage of different restart mode
- Troubleshoot the IRC5 robot independently

Contents

- Safety instruction
- Basic electrical knowledge of industry robot
- Introduction of LED status in the controller cabinet
- Introduction of IRC5 error code
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in IRC5 compact
- Case study
- Practice. Analyze and diagnose the faults set by the trainer

Information

- Duration: 2 days
- Number of participants: 4-6 persons

CNIR305 IRB 14000 电气原理

CNIR305 IRB 14000 electrical maintenance

适用机型

- ABB IRB 14000 工业机器人

课程对象

- 电气工程师
- 项目工程师

知识要求

- IRB 14000 操作培训

完成此课程后，您将可以

- 了解 IRB 14000 机器人系统结构
- 熟悉 IRB 14000 机器人各功能模块间关系及工作原理
- 读懂手册中的电路图，理解各电气模块功能
- 完成电气设备日常保养维护和备件替换

课程内容

- IRB 14000 系统介绍
- IRB 14000 电气模块功能及原理介绍
- 电路图讲解
- 机器人中各电气模块维护保养注意事项
- 操作实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Robot: IRB 14000

Target Groups

- Project engineer
- Electrical engineer

Prerequisites

- IRB 14000 Operation

After this training, you are able to

- Understand IRB 14000 system introduction
- Understand IRB 14000 units' function
- Be able to read circuit diagram
- Be able to do daily maintenance and replace fault unit

Contents

- IRB 14000 robot system introduction
- The principle of each electrical unit
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Replacement of the failure part
- Practice

Course information

- Duration: 2 days
- Number of participants: 4-8 persons

机械维修

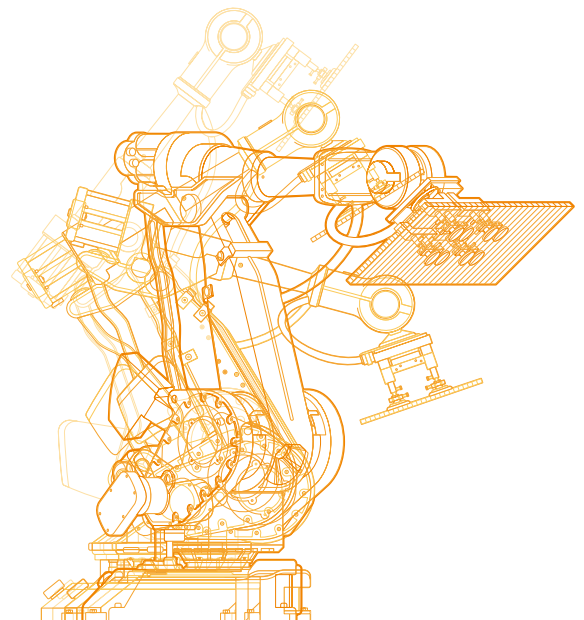
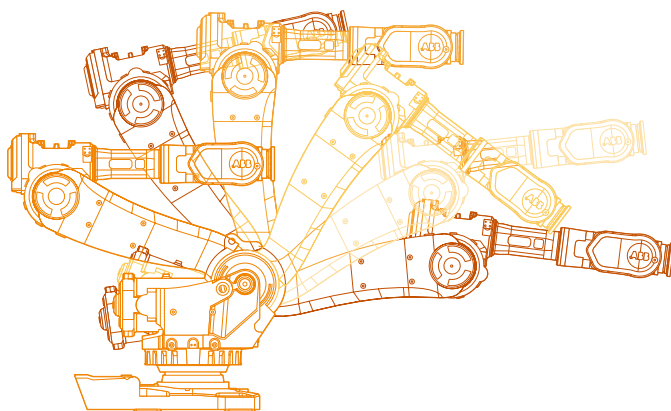
Mechanical Maintenance

工业机器人

- CNIR401 IRB 6640 机械维修 (6620)
- CNIR402 IRB 2400 机械维修 (1400/1410/4400)
- CNIR403 IRB 360 机械维修 (340)
- CNIR404 IRB 460 机械维修 (260/660/760)
- CNIR405 IRB 1600 机械维修 (2600/4600)
- CNIR406 IRB 120 机械维修
- CNIR407 IRB 1200 机械维修
- CNIR408 IRB 140 机械维修
- CNIR409 IRB 1520 机械维修
- CNIR410 IRB 14000 机械维修

Industry Robot

- CNIR401 IRB 6640 Mechanical Maintenance (6620)
- CNIR402 IRB 2400 Mechanical Maintenance (1400/1410/4400)
- CNIR403 IRB 360 Mechanical Maintenance (340)
- CNIR404 IRB 460 Mechanical Maintenance (260/660/760)
- CNIR405 IRB 1600 Mechanical Maintenance (2600/4600)
- CNIR406 IRB 120 Mechanical Maintenance
- CNIR407 IRB 1200 Mechanical Maintenance
- CNIR408 IRB 140 Mechanical Maintenance
- CNIR409 IRB 1520 Mechanical Maintenance
- CNIR410 IRB 14000 Mechanical



CNIR401 IRB 6640 机械维修

CNIR401 IRB 6640 Mechanical Maintenance

适用机型

- ABB 大型机器人如：
IRB 6640, IRB 6620

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人齿轮箱、平衡装置
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人齿轮箱、平衡装置更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB's large manipulators:
IRB 6640, IRB 6620

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge of mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes (axis 1 - axis 6) independently
- Refer to the manual, replace the balancing device
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of gearboxes
- Replacement of balancing device
- Fine calibration
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNIR402 IRB 2400 机械维修

CNIR402 IRB 2400 Mechanical Maintenance

适用机型

- ABB 中型机器人如：
IRB 2400, IRB 1400, IRB 1410, IRB 4400

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人齿轮箱、平衡装置
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人齿轮箱、平衡装置更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 2400, IRB 1400, IRB 1410, IRB 4400

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes (axis 1 - axis 6) independently
- Refer to the manual, replace the balancing device
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of gearboxes
- Replacement of balancing device
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR403 IRB 360 机械维修

CNIR403 IRB 360 Mechanical Maintenance

适用机型

- IRB 360, IRB 340

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人手臂系统、齿轮箱
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人手臂系统、齿轮箱更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 360, IRB 340

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes and arm system independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of arm system and gearboxes
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR404 IRB 460 机械维修

CNIR404 IRB 460 Mechanical Maintenance

适用机型

- ABB 四轴机器人：
IRB 460, IRB 260, IRB 660, IRB 760

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人、齿轮箱
- 参照手册，独立更换机器人连杆系统
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人齿轮箱更换方法讲解与实践
- 机器人连杆系统更换方法讲解及实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 460, IRB 260, IRB 660, IRB 760

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes independently
- Refer to the manual, replace the linkage system
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of gearboxes
- Replacement of linkage system
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR405 IRB 1600 机械维修

CNIR405 IRB 1600 Mechanical Maintenance

适用机型

- IRB 1600, IRB 2600, IRB 4600

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人齿轮箱
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人齿轮箱更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 1600, IRB 2600, IRB 4600

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of gearboxes
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR406 IRB 120 机械维修

CNIR406 IRB 120 Mechanical Maintenance

适用机型

- IRB 120

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握 IRB120 本体常用维护保养知识
- 参照手册，独立拆装机器人本体电缆
- 参照手册，独立更换机器人各轴电机
- 参照手册，独立更换机器人上臂下臂
- 能够借助设备对机器人做精校准

培训内容

- ABB 机器人安全操作规范
- IRB120 硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 机器人本体电缆更换步骤讲解及实践
- 机器人各轴电机及齿轮箱更换方法讲解及实践
- 机器人上臂下臂更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 120

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of IRB120
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the upper arm and lower arm independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of upper arm and lower arm
- Fine calibration
- Practice

Information

- Duration: 2 Days
- Number of participants: 4-8 Persons

CNIR407 IRB 1200 机械维修

CNIR407 IRB 1200 Mechanical Maintenance

适用机型

- IRB 1200

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握 IRB1200 本体常用维护保养知识
- 参照手册，独立拆装机器人本体电缆
- 参照手册，独立更换机器人各轴电机及齿轮箱
- 参照手册，独立更换机器人上臂下臂
- 参照手册，独立更换机器人基座
- 能够借助设备对机器人做精校准

培训内容

- ABB 机器人安全操作规范
- IRB1200 硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 机器人本体电缆更换步骤讲解及实践
- 机器人各轴电机及齿轮箱更换方法讲解及实践
- 机器人上臂下臂更换方法讲解与实践
- 机器人基座更换方法讲解及实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 1200

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of IRB1200
- Refer to the manual, replace the cables independently
- Refer to the manual, replace the motors and gearboxes independently
- Refer to the manual, replace the upper arm and lower arm independently
- Refer to the manual, replace the base unit independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement the cables
- Replacement of the motors and gearboxes
- Replacement of upper arm and lower arm
- Replacement of the base unit
- Fine calibration
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNIR408 IRB 140 机械维修

CNIR408 IRB 140 Mechanical Maintenance

适用机型

- IRB140

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握 IRB140 本体常用维护保养知识
- 参照手册，独立拆装机器人本体电缆
- 参照手册，独立更换机器人各轴电机
- 参照手册，独立更换机器人上臂下臂
- 能够借助设备对机器人做精校准

培训内容

- ABB 机器人安全操作规范
- IRB140 硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 机器人本体电缆更换步骤讲解及实践
- 机器人各轴电机及齿轮箱更换方法讲解及实践
- 机器人上臂下臂更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB140

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of IRB140
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the upper arm and lower arm independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of upper arm and lower arm
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR409 IRB 1520 机械维修

CNIR409 IRB 1520 Mechanical Maintenance

适用机型

- IRB1520

课程对象

- 机械维修工程师

知识要求

- 机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握 IRB1520 本体常用维护保养知识
- 参照手册，独立拆装机器人本体电缆
- 参照手册，独立更换机器人各轴电机
- 参照手册，独立更换机器人上臂下臂
- 能够借助设备对机器人做精校准

培训内容

- ABB 机器人安全操作规范
- IRB1520 硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 机器人本体电缆更换步骤讲解及实践
- 机器人各轴电机及齿轮箱更换方法讲解及实践
- 机器人上臂下臂更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB1520

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB industry robot
- Understand the maintenance method of IRB1520
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the upper arm and lower arm independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of upper arm and lower arm
- Fine calibration
- Practice

Information

- Duration: 2 days
- Number of participants: 4-8 persons

CNIR410 IRB 14000 机械维修

CNIR410 IRB 14000 Mechanical

适用机型

- ABB IRB 14000 工业机器人

课程对象

- 机械工程师
- 项目工程师

知识要求

- IRB 14000 操作培训

完成此课程后，您将可以

- 了解 IRB 14000 机器人系统结构
- 通过刹车或示教器移动机器人
- 讲解 IRB 14000 机器人内部结构
- 参照手册，独立更换手臂
- 能够更新转数计数器
- 对 IRB 14000 进行日常维护

培训内容

- ABB 机器人本体硬件结构介绍
- 各轴电机、电缆更换步骤讲解
- 机器人手臂更换方法讲解与实践
- 机器人校准方法介绍与实践
- IRB 14000 日常维护介绍

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Robot: IRB 14000

Target Groups

- project engineer
- Mechanical engineer

Prerequisites

- IRB 14000 operation

After this training, you are able to

- Know the structure of IRB 14000
- Move robot by break release or TPU
- Refer to product manual, replace arm
- Update revolution counter
- Daily Maintenance

Contents

- Introduce IRB 14000 structure
- Introduce motor replace steps
- Introduce arm replacement
- Calibration introduce
- Practice
- IRB 14000 daily maintenance introduction

Information

- Duration: 2 days
- Number of participants: 4-8 persons

工业机器人

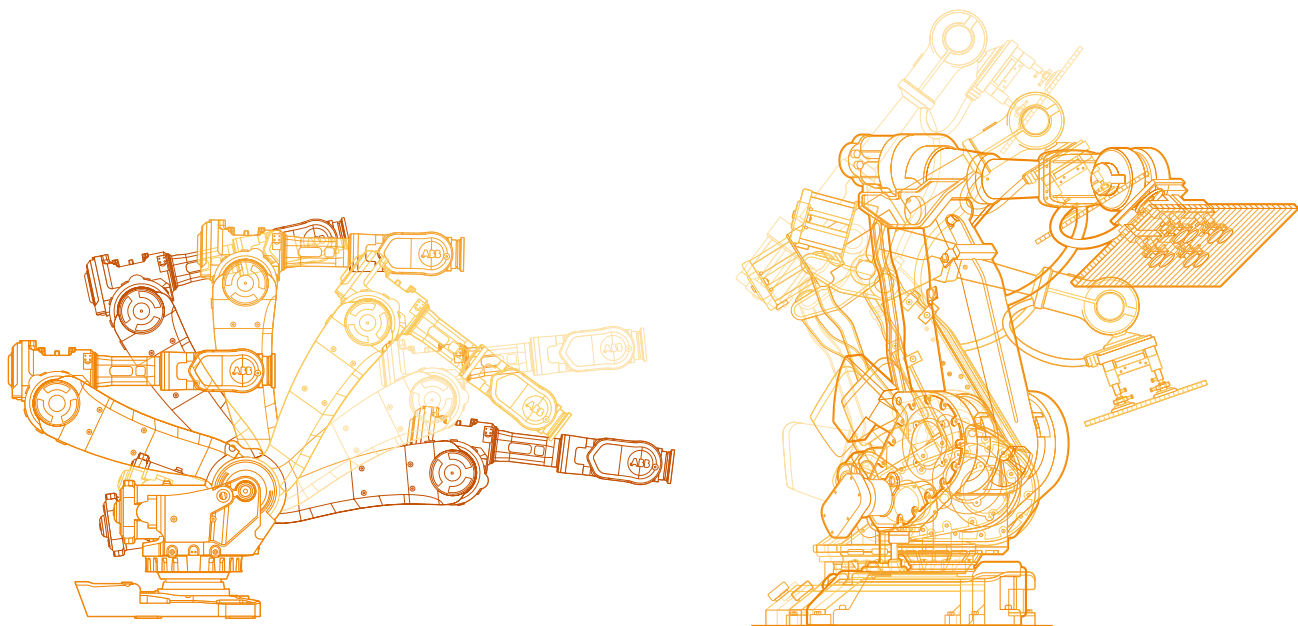
- CNIR501
- CNIR502

RobotStudio 软件培训
PickMaster 3

Industry Robot

- CNR501
- CNIR502

RobotStudio Software Training
PickMaster 3



CNIR501 RobotStudio 5.15 软件培训

CNIR501 RobotStudio Software Training

适用机型

- ABB 所有机型

课程对象

- 项目 / 工艺工程师

知识要求

- 机器人编程培训

完成此培训后，您将可以

- 根据实际需要创建自己的工作站
- 创建和布置工作站里的组件（例如工具，各坐标系，几何体）
- 使用 RobotStudio 进行离线编程并仿真
- 模拟现场的动态效果并制作机器人工作视频
- 使用 ABB 机器人的可选项（MultiMove，外轴，输送链跟踪）进行编程
- 使用一些 RobotStudio 提供的工具进行信号分析

课程内容

- 创建工作站
- 创建系统
- 创建几何体和机械装置
- 创建工具、工件坐标系、路径点、轨迹
- 利用创建的组件和数据进行离线编程和仿真
- 使用 smart 组件模拟现场动态效果
- ABB 机器人的可选项的使用，包括 MultiMove；外轴（转台、导轨）；输送链追踪
- 学习 RobotStudio 的实用功能。包括信号分析器；文件传输；制作自定义的视频录像

课程信息

- 培训时间：5 天
- 学员人数：6-10 人 / 班

Applicable Robot Type

- All the ABB robots with IRC5 controller

Target Groups

- Project/Process engineer

Prerequisites

- Basic programming training

After this training, you are able to

- Build a station according to the actual requirements.
- Create and move the components in the station(such as Tools, Coordinates, Geometries)
- Program offline
- Simulate the station with smart component
- Make a video of the running station
- Program with ABB additional option, including MultiMove, external axis ,conveyor tracking
- Analysis the movement of robot with tools in RobotStudio

Contents

- Creating a station
- Creating a system
- Creating the geometries and mechanical unit
- Creating Tool, WorkObject, Targets and Paths
- Programming offline and simulation
- Using Smart Component to simulate the running situation dynamically
- Program with ABB additional option, such as MutiMove, external axis, conveyor tracking
- Applications in RobotStudio. Such as signal analyzer , file transfer, sales tool, screen maker

Information

- Duration: 5 days
- Number of participants: 6-10 persons

CNIR502 PickMaster 3

CNIR502 PickMaster 3

适用机型

- ABB 工业机器人

课程对象

- 项目调试工程师
- 工艺工程师

知识要求

- 基本电气知识
- 参加过 ABB 工业机器人基础编程培训

完成此培训后，您将可以

- 了解如何搭建包装线
- 掌握 I/O 配置知识
- 掌握如何在软件系统中配置包装线
- 掌握如何配置生产项目
- 学会如何配置远程集成服务
- 学会如何调试取放动作
- 掌握故障处理思路与方法

课程内容

- ABB 机器人安全操作介绍
- 电气安装介绍，如电脑，相机，编码器连接等
- 配置与校准包装线，相机，工作区等
- 配置生产项目，对象，摆放方式，包装箱属性等
- 配置远程集成服务
- 调试与故障排除讲解

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB industrial Robot

Target Groups

- Commissioning engineer
- Process engineer

Prerequisites

- Basic knowledge of electric
- Basic programming training of ABB robot

After this training , you are able to

- Know how to build the picking system
- Know how to configure the I/O signals
- Understand how to configure the line
- Understand how to configure the project
- Know how to configure Remote Integration Services
- Know how to tune the movement
- Trouble shooting

Contents

- Safety instruction of Industrial robot
- Electrical installation of PC, camera, encoder, etc.
- Configure and Calibrate the line, camera, work area, etc.
- Configure the project, items, patterns, containers, etc.
- Configure Remote Integration Services
- Commissioning and Trouble shooting

Information

- Duration: 3 days
- Number of participants: 4-8 persons

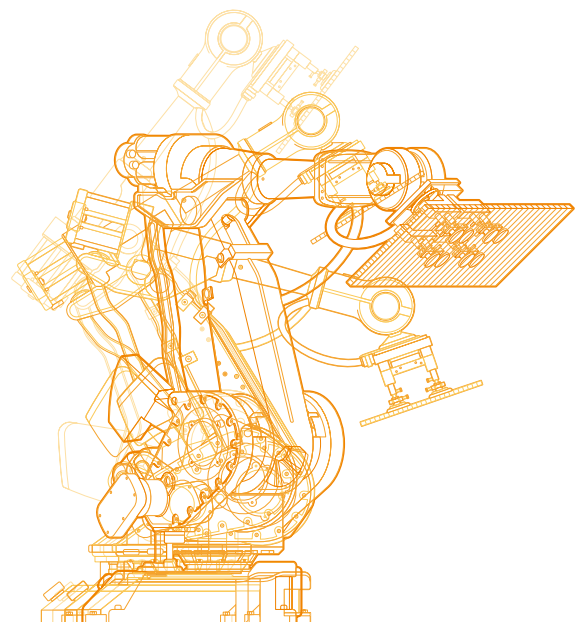
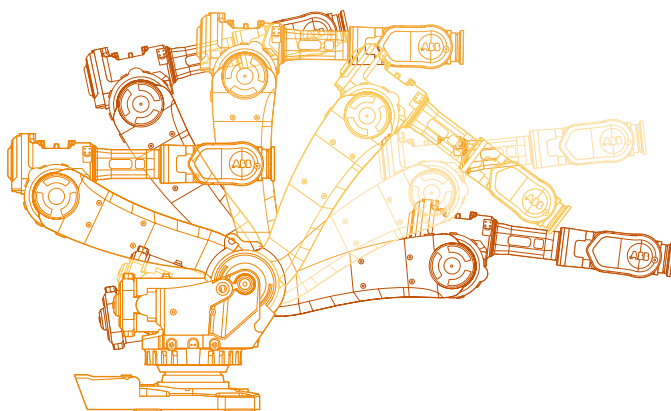
应用 Application

工业机器人

- CNIR601 弧焊应用
- CNIR602 点焊应用
- CNIR603 SafeMove & EPS 应用
- CNIR604 视觉系统
- CNIR605 MultiMove 应用

Industry Robot

- CNIR601 Arc-welding Application
- CNIR602 Spot-welding Application
- CNIR603 SafeMove & EPS Application
- CNIR604 Integrated Vision
- CNIR605 MultiMove Application



CNIR601 弧焊应用

CNIR601 Arc-welding Application

适用机型

- 使用 ABB 弧焊系统的所有机型

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工

知识要求

- IRC5 基础编程培训
- 弧焊工艺基础知识

完成此课程后，您将可以

- 了解工业机器人和弧焊工艺设备安全系统
- 了解焊接电源、送丝机构和焊枪结构及工作原理
- 掌握 RobotWare Arc 软件指令、数据
- 配置弧焊系统参数
- 学会完整的弧焊工艺编程
- 学会机器人弧焊系统故障分析和处理
- 配置包含 RobotWare Arc 功能的机器人软件系统

培训内容

- 工业机器人和弧焊设备安全知识介绍
- 焊接电源、送丝机构和焊枪硬件结构
- RobotWare Arc 软件指令、数据和系统参数
- 编写弧焊工艺应用程序
- 弧焊工艺分析和故障处理
- 配置机器人弧焊应用系统

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robots with arc-welding equipment

Target Groups

- Operator
- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5 Basic Programming
- Basic knowledge about arc welding process

After this training , you are able to

- Know the safety system of robot and arc-welding equipment
- Understand the structure and principle of wirefeed unit, power source and torch
- Be familiar with the instruction and data in Robotware Arc
- Configure the parameters in arc-welding system
- Program for arc-welding process
- Diagnose the faults in arc-welding system
- Configure Robotware Arc in Robotstudio

Contents

- Safety and operation guide for arc-welding equipment
- Introduction of power source, wirefeed unit and torch
- Instruction, data and system parameter of RobotWare Arc
- Programming for basic arc-welding process
- Troubleshooting of arc-welding application
- RobotArc system configuration

Information

- Duration: 3 days
- Number of Participants: 4-8 persons

CNIR602 点焊应用

CNIR602 Spot-welding Application

适用机型

- 使用 ABB 点焊系统的所有机型

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工

知识要求

- IRC5 基础编程培训
- 点焊工艺基础知识

完成此课程后，您将可以

- 了解工业机器人和点焊工艺设备安全系统
- 了解焊接控制器、电缆包和水气单元结构及工作原理
- 掌握 RobotWare Spot 软件指令、数据
- 掌握 Bosch 点焊控制器参数设置
- 学会完整的点焊工艺编程
- 学会机器人点焊系统故障分析和处理
- 配置包含 RobotWare Spot 功能的机器人软件系统

培训内容

- 工业机器人和点焊设备安全知识介绍
- 焊接控制器、电缆包和水气单元硬件结构
- RobotWare Spot 软件指令、数据
- Bosch 点焊控制器参数设置
- 编写点焊工艺应用程序
- 点焊工艺分析和故障处理
- 配置机器人点焊应用软件系统

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robots with spot-welding equipment

Target Groups

- Operator
- Electrical maintenance engineer
- Project/process engineer

Prerequisites

- IRC5 Basic Programming
- Basic knowledge about Spot-welding process

After this training , you are able to

- Know the safety system of robot and spot-welding equipment
- Understand the structure and principle of timer, dresspack and water & air unit
- Be familiar with the instruction and data of RobotWare Spot and spot-welding system parameter
- Configure parameters of BOSCH Timer
- Program for spot-welding process
- Diagnose the fault in spot-welding system
- Configure RobotWare spot with RobotStudio software

Contents

- Safety and operation guide for spot-welding equipment
- Introduction of the timer, dresspack and water & air unit
- Instruction, data and system parameter of RobotWare Spot
- BOSCH Timer parameter configuration
- Programming for basic spot-welding process
- Troubleshooting for spot-welding application
- RobotSpot system configuration

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNIR603 SafeMove & EPS 应用

CNIR603 SafeMove & EPS Application

适用机型

- 使用 Safemove 或 EPS 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 机械维修工程师
- 操作工

知识要求

- 基础编程培训

完成此课程后，您将可以

- 独立安装 Safemove 和 EPS 板卡
- 独立调试、配置 Safemove 和 EPS 功能

培训内容

- 操作安全
- SafeMove 和 EPS 板卡的安装及连线
- EPS 功能及配置介绍
- SafeMove 功能介绍
- 生成带 SafeMove 选项的机器人系统
- 创建安全用户
- 配置 SafeMove 应用
- SafeMove 相关例程介绍
- SafeMove 配置测试
- 应用实践

课程信息

- 培训时间： 2 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB robot with Safemove or EPS

Target group

- Project/Process engineer
- Electrical maintenance engineer
- Mechanical maintenance engineer
- Operator

Prerequisites

- Basic programming

After this training, you are able to

- Mechanical/Electrical integration of the EPS and SafeMove cards
- Configuration of the EPS and SafeMove cards

Contents

- Occupational health and safety
- Mechanical installation and electrical integration of the EPS/ SafeMove card
- Introduction of EPS function
- Configuration of EPS
- Introduction of SafeMove function
- Producing a system with the SafeMove option
- Creating a security user
- Configuration of the SafeMove application
- Help routines for supporting SafeMove
- Testing and documentation of the SafeMove configuration
- Practice

Information

- Duration: 2 Days
- Number of participants: 4-8 Persons

CNIR604 视觉系统

CNIR604 Integrated Vision

适用机型

- 所有集成 ABB 视觉系统的工业机器人

课程对象

- 项目工程师
- 工艺工程师
- 操作工

知识要求

- 机器人基础编程培训

完成此课程后，您将可以

- 了解 ABB 视觉系统配置及技术参数
- 创建集成视觉系统的 ABB 机器人工作站
- 安装调试视觉系统
- 编写集成视觉系统的 RAPID 程序
- 独立处理一些涉及视觉系统的常见故障

培训内容

- ABB 视觉系统应用场景介绍
- ABB 视觉系统主要技术参数及特点
- ABB 视觉系统工作原理介绍
- 连接机器人与照相机
- 创建带视觉系统的机器人工作站
- 照相机调试及校准
- 集成视觉系统的工作站调试
- 集成视觉系统编程
- 集成视觉系统工作站中的常见故障处理方法

课程信息

- 培训时间： 3 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- The ABB robots with Integrated Vision

Target Groups

- Project Engineer
- Process Engineer
- Operator

Prerequisites

- IRC5 basic programming

After this training, you are able to

- Know the technical data of Integrated Vision
- Create a work station with Integrated Vision
- Install and commission integrated vision independently
- Create a simple RAPID program that acquire an image
- Troubleshoot the common failures in Integrated Vision system

Contents

- Integrated Vision technical data
- The target application
- How does the Integrated Vision work
- Connect camera and robot controller
- Image setup
- Integrated Vision calibration
- Programming
- Troubleshoot some common failures in work station with the Integrated Vision

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNIR605 MultiMove 应用

CNIR605 MultiMove Application

适用机型

- 使用 MultiMove 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 项目经理

知识要求

- 基础编程培训
- IRC5 电气原理

完成此课程后，您将可以

- 了解 MultiMove 的功能
- 安装 MultiMove 系统
- 配置协调运动坐标系
- 掌握 MultiMove 的基本指令
- 编写运动程序（独立、同步、协调）
- 执行含有 MultiMove 功能的系统中的程序任务

培训内容

- 操作安全
- MultiMove 系统的硬件构成
- 生成带有 MultiMove 选项的机器人系统
- 工具、对象、坐标系统的测量方法
- 测试同步协调运动功能
- 系统参数及备份
- 机器人在 MultiMove 系统中的运动
- 加载 / 编辑 / 启动 / 保存任务
- 独立运动和同步运动
- 协调运动
- tracks 及其他机械部件的编程
- 应用实践

课程信息

- 培训时间： 5 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB robot with MultiMove

Target Groups

- Project/Process engineer
- Electrical maintenance engineer
- Project manager

Prerequisites

- Basic programming
- IRC5 Electrical Maintenance

After this training, you are able to

- Getting to know the functionality of MultiMove
- Commissioning new MultiMove systems
- Configuring the associated coordinate systems
- The significance and application of MMV instructions
- Writing movement programs (independent, synchronous, coordinated)
- Performing programming tasks on a configured MultiMove application

Contents

- Occupational health and safety
- Structure of the hardware
- Producing a system with the MultiMove option
- Getting to know measurement methods for tool/plant object and basic coordinates
- Testing the functions of ‘Synchronized and coordinated movements’
- System parameters and backup
- Understanding the movement of the Robot in an MMV system
- Tasks-Loading/Editing/Starting up/Saving
- Independent movements & Synchronized movements
- Synchronized and coordinated movements
- Programming tracks and other machined parts

Information

- Duration: 5 days
- Number of participants: 4-8 persons

喷涂机器人部分

Painting Robot

- CNPR101 IRC5P 机器人操作
 - CNPR102 S4P+ 机器人操作
 - CNPR103 IRC5P 机器人现场安装
 - CNPR201 IRC5P 机器人编程
 - CNPR202 S4P+ 机器人编程
 - CNPR301 IRC5P 机器人电气原理
 - CNPR302 IRC5P 机器人故障处理
 - CNPR303 S4P+ 机器人电气原理
 - CNPR304 S4P+ 机器人故障处理
 - CNPR401 IRB 5500 机械维修
 - CNPR402 IRB 5400 机械维修
 - CNPR403 IRB 580 机械维修
 - CNPR404 IRB 540 机械维修
 - CNPR501 IPS
 - CNPR601 RobView 5
 - CNPR602 926 雾化器
 - CNPR603 951 雾化器
 - CNPR604 RB1000 雾化器
- CNPR101 IRC5P Operation
 - CNPR102 S4P+ Operation
 - CNPR103 Installation instruction of painting robot
 - CNPR201 IRC5P Programming
 - CNPR202 S4P+ Programming
 - CNPR301 IRC5P Electrical Principle
 - CNPR302 IRC5P Troubleshooting
 - CNPR303 S4P+ Electrical Principle
 - CNPR304 S4P+ Troubleshooting
 - CNPR401 IRB 5500 Mechanical
 - CNPR402 IRB 5400 Mechanical
 - CNPR403 IRB 580 Mechanical Maintenance
 - CNPR404 IRB 540 Mechanical Maintenance
 - CNPR501 IPS
 - CNPR601 RobView 5
 - CNPR602 926 Atomizer
 - CNPR603 951 Atomizer
 - CNPR604 RB1000 Atomizer

机器人操作

Operation

喷涂机器人

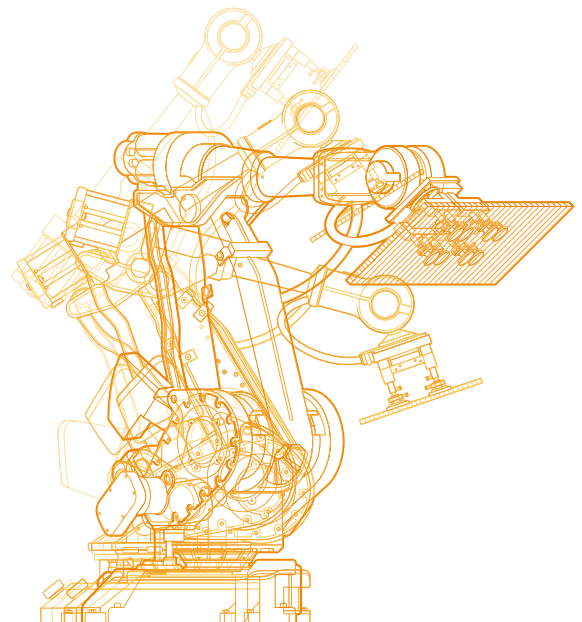
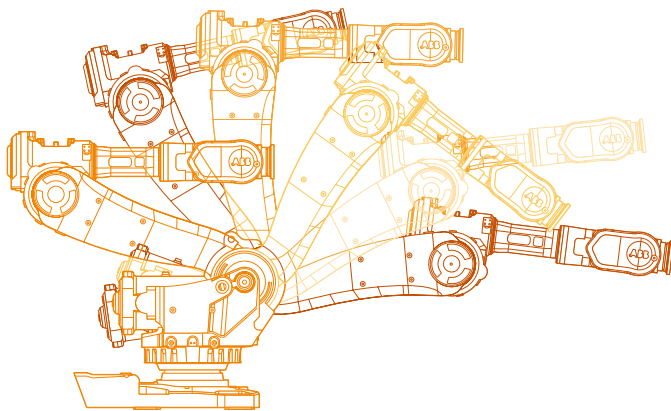
- CNPR101
- CNPR102
- CNPR103

IRC5P 操作
S4P+ 操作
IRC5P 机器人现场安装

Painting Robot

- CNPR101
- CNPR102
- CNPR103

IRC5P Operation
S4P+ Operation
Installation instruction of painting robot



CNPR101 IRC5P 操作

CNPR101 IRC5P Operation

适用机型

- 使用 IRC5P 控制系统的所有机型

课程对象

- 操作工
- 机械维修工程师
- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- 无

完成此课程后，您将可以

- 了解 ABB 喷涂机器人系统结构
- 熟悉喷涂机器人安全操作规范
- 掌握 ABB 喷涂机器人示教器操作方法
- 能够在手动模式下使用示教器操作机器人，修改程序中的位置点
- 了解 Rapid 程序结构及程序数据类型
- 能够加载，运行 RAPID 程序
- 能够阅读、调试简单应用程序
- 能够做程序备份和系统备份

培训内容

- 系统安全
- 机器人系统架构
- 示教器操作介绍及练习
- RAPID 程序结构及数据类型介绍
- 加载并运行程序
- 基本指令应用及举例说明
- 程序备份及系统备份

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5P controller

Target Groups

- Operator
- Mechanical maintenance engineer
- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- None

After this training, you are able to

- Understand the structure and principle of ABB painting robot
- Be Familiar with painting robot safety guide
- Operate robot with PTPU, and modify the position in program
- Understand RAPID structure and the type of program data
- Load program and run a RAPID program
- Read, write and debug simple program
- Save program and backup system

Contents

- Safety instruction of painting robot
- Robot structure introduction
- Operation with PTPU
- Structure of RAPID program
- Description of data type
- Writing program with basic instructions
- Saving and loading programs
- System backup
- Practice

Information

- Duration：3 days
- Number of participants: 4-8 persons

CNPR102 S4P+ 操作

CNPR102 S4P+ Operation

适用机型

- 使用 S4P+ 控制系统的所有机型

课程对象

- 操作工
- 机械维修工程师
- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- 无

完成此课程后，您将可以

- 了解 ABB 喷涂机器人系统结构
- 熟悉喷涂机器人安全操作规范
- 掌握 ABB 喷涂机器人示教器操作
- 能够在手动模式下使用示教器操作机器人，修改程序中的位置点
- 了解 Rapid 程序结构及程序数据类型
- 能够加载，运行 RAPID 程序
- 能够阅读、调试简单应用程序
- 能够做程序备份和系统备份

培训内容

- 系统安全
- 机器人系统架构
- 示教器操作方法介绍与练习
- RAPID 程序结构及数据类型介绍
- 加载并运行程序
- 基本指令应用及举例说明
- 程序备份及系统备份

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All ABB robot with S4P+ controller

Target Groups

- Operator
- Mechanical maintenance engineer
- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- None

After this training, you are able to

- Understand the structure and principle of ABB painting robot
- Be Familiar with painting robot safety guide
- Operate robot with PTPU, and modify the position in program
- Understand RAPID structure and the type of program data
- Load program and run a RAPID program
- Read, write and debug simple program
- Save program and backup system

Contents

- Safety instruction of painting robot
- Robot structure introduction
- Operation with PTPU
- Structure of RAPID program
- Description of data type
- Writing program with basic instructions
- Saving and loading programs
- System backup
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 person/class

CNPR103 IRC5P 机器人现场安装

CNPR103 Installation instruction of painting robot

适用机型

- ABB 喷涂机器人

课程对象

- 调试工程师
- 设备维护工程师

知识要求

- 电气基础知识
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 喷涂机器人系统基本组成
- 掌握喷涂控制柜及喷涂机器人基本吊装知识
- 掌握喷涂控制柜、机器人和防爆吹扫机械安装知识
- 能够独立完成电气接线
- 能够简单移动机器人
- 能够完成世界坐标的标定

培训内容

- ABB 机器人安全操作介绍
- 喷涂机器人系统介绍
- 控制柜及机器人吊装说明及实践
- 控制柜及机器人安装说明及实践
- 机器人系统相关电气连接讲解
- 手动操作机器人介绍与实践
- 世界坐标系的标定与应用

课程信息

- 培训时间：1 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Painting Robot

Target Groups

- Commissioning engineer
- Facility engineer

Prerequisites

- Basic knowledge of electric
- Basic knowledge of mechanics

After this training, you are able to

- Know the basic components of ABB Painting robot system
- Understand the hoisting method of painting robot
- Understand how to install the cabinet, painting robot and purge box on site
- Refer to the manual, finish the electrical installation independently
- Move the robot basically
- Calibrate the World Frame

Contents

- Safety instruction of painting robot
- Painting robot system introduction
- Instruction and practice of cabinet & robot's hoisting
- Instruction and practice of cabinet & robot's Installation
- Instruction and practice of electrical Installation
- Present how to move the robot quickly
- Calibration of world frame

Information

- Duration: 1 days
- Number of participants: 4-8 person/class

编程

Programming

工业机器人

- CNIR201
- CNIR202

IRC5 基础编程
IRC5 高级编程

Industry Robot

- CNIR201
- CNIR202

IRC5 Basic Programming
IRC5 Advanced Programming

喷涂机器人

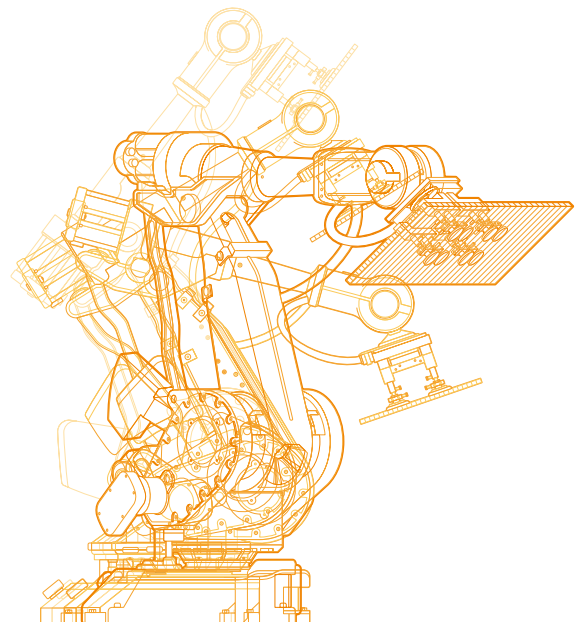
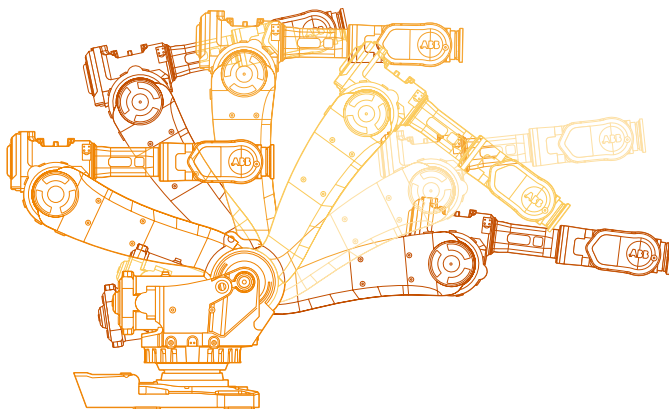
- CNPR201
- CNPR202

IRC5P 编程
S4P+ 编程

Painting Robot

- CNPR201
- CNPR202

IRC5P Programming
S4P+ Programming



CNPR201 IRC5P 编程

CNPR201 IRC5P Programming

适用机型

- 使用 IRC5P 控制系统的所有机型

课程对象

- 操作工
- 电气维修工程师
- 机械维修工程师
- 项目 / 工艺工程师

知识要求

- 基本喷涂工艺知识

完成此课程后，您将可以

- 了解 Rapid 程序结构及程序数据类型
- 能够配置 I/O 信号并运用于编程
- 了解 Brush Table，创建 Brush Table
- 理解并使用换色程序
- 新建轨迹程序
- 配置 INDEX
- 了解 S4P+ 与 IRC5P 程序差别

培训内容

- 操作安全
- 喷涂机器人系统架构
- RAPID 程序结构及数据类型
- 基本指令应用及举例说明
- I/O 信号配置
- 输送链跟踪应用介绍
- Brush Table 使用方法
- 换色程序应用介绍
- 创建轨迹方法介绍
- INDEX 配置方法
- 故障日志解读
- S4P+ 与 IRC5P 程序对比
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the robots with IRC5P controller

Target Groups

- Operator
- Electrical maintenance engineer
- Mechanical maintenance engineer
- Project/Process engineer

Prerequisites

- Basic knowledge of painting process

After this training , you are able to

- Understand RAPID program structure
- Understand the usage of data type
- Configure I/O signal independently
- Configure and modifying Brush table
- Be familiar with color changing program
- Write simple movement programs
- Configure the INDEX
- Be familiar with the difference between S4P+ and IRC5P

Contents

- Occupational health and safety with painting robot
- Structure of the painting robot system
- RAPID program structure and data type
- Basic instructions and case study
- I/O signal configuration
- Conveyor tracking
- Introduction of Brush Table
- Program for color changing
- Creating painting path
- Index configuration
- Error code and status report
- Comparison between S4P+ and IRC5P
- Practice

Information

- Duration: 5 Days
- Number of participants: 4-8 Persons

CNPR202 S4P+ 编程

CNPR202 S4P+ Programming

适用机型

- 使用 S4P+ 控制系统的所有机型

课程对象

- 操作工
- 电气维修工程师
- 机械维修工程师
- 项目 / 工艺工程师

知识要求

- 基本喷涂工艺知识

完成此课程后，您将可以

- 了解 Rapid 程序结构及程序数据类型
- 使用喷涂指令编写程序
- 能够配置 I/O 信号并运用编程
- 了解 Brush Table，创建 Brush Table
- 理解并使用换色程序
- 配置 index

培训内容

- 操作安全
- 喷涂机器人系统架构
- RAPID 程序结构及数据类型
- 喷涂指令应用及举例说明
- I/O 信号配置
- 输送链跟踪应用介绍
- Brush Table 使用方法
- 换色程序应用介绍
- Index 配置方法
- 故障日志解读
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the robots with S4P+ controller

Target Groups

- Operator
- Electrical maintenance engineer
- Mechanical maintenance engineer
- Project/Process engineer

Prerequisites

- Basic knowledge of painting process

After this training , you are able to

- Understand RAPID program structure
- Understand the usage of data type
- Configure I/O signal independently
- Configure and modifying Brush Table
- Be familiar with color changing program
- Write simple movement programs
- Configure the INDEX

Contents

- Occupational health and safety with painting robot
- Structure of the painting robot system
- RAPID program structure and data type
- Basic instruction s and case study
- I/O signal configuration
- Conveyor tracking
- Introduction of Brush Table
- Program for color changing
- Creating painting path
- Index configuration
- Error code and status report
- Practice

Information

- Duration: 5 Days
- Number of participants: 4-8 Persons

电气原理及故障处理

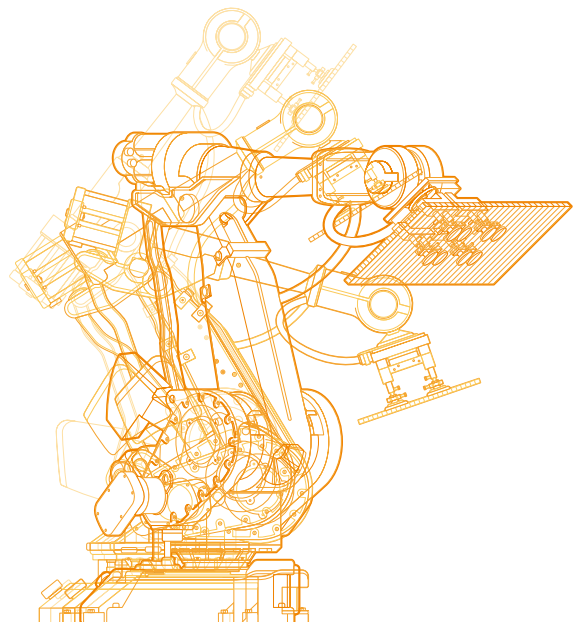
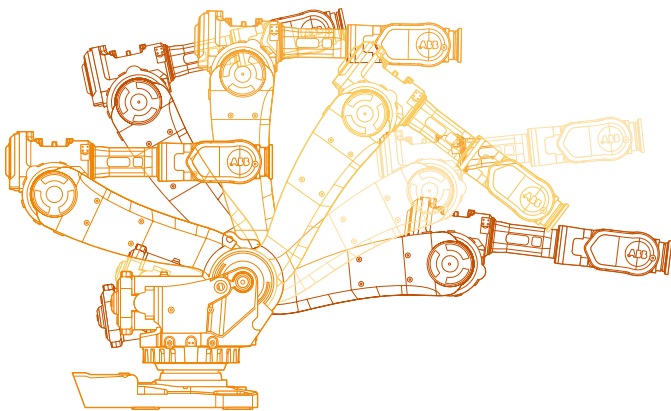
Electrical Principle and Troubleshooting

喷涂机器人

- CNPR301 IRC5P 电气原理
- CNPR302 IRC5P 故障排除
- CNPR303 S4P+ 电气原理
- CNPR304 S4P+ 故障排除

Painting Robot

- CNPR301 IRC5P Electrical Principle
- CNPR302 IRC5P Troubleshooting
- CNPR303 S4P+ Electrical Principle
- CNPR304 S4P+ Troubleshooting



CNPR301 IRC5P 电气原理

CNPR301 IRC5P Electrical Principle

适用机型

- 使用 IRC5P 控制系统的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5P 操作培训

完成此课程后，您将可以

- 了解 IRC5P 机器人系统电气结构
- 熟悉 IRC5P 机器人控制柜各电气单元功能及工作原理
- 熟悉 IRC5P 机器人本体各电气单元功能及工作原理
- 了解主要单元在电路及气路图中的连接走向
- 能够独立完成电气设备日常保养维护和备件替换

课程内容

- 机器人操作安全
- IRC5P 机器人系统
- IRC5P 机器人控制柜中各单元介绍。包括主计算机、驱动单元、轴计算单元、PIB、SIB、SCB、PDB、MIB、TIB
- IRC5P 机器人本体中各单元介绍。包括 MCOB、MCCB、SMU、PSIB、RID、HVC
- 主要单元电路图讲解
- 主要电气单元维护保养知识
- 主要电气单元拆装实践操作

课程信息

- 培训时间：3 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the robots with IRC5P controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5P Operation

After this training , you are able to

- Understand the electrical structure of IRC5P system
- Be familiar with the function of the electrical units in IRC5P cabinet
- Be familiar with the function of the electrical units in manipulator
- Work with circuit diagrams
- Implement the basic daily maintenance independently
- Replace the failure part independently

Contents

- Safety instruction
- Structure and function of painting robot system
- The working function of the electrical units in IRC5P cabinet, including main computer, Driver, axis computer, PIB, SIB, SCB, PDB, MIB, TIB & etc.
- The working function of the electrical units in manipulator, including MCOB, MCCB, SMU, PSIB, RID, HVC & etc.
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Replacement of the failure part
- Practice

Information

- Duration: 3 Days
- Number of participants: 4-6 Persons

CNPR302 IRC5P 故障排除

CNPR302 IRC5P Troubleshooting

适用机型

- 使用 IRC5P 控制系统的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5P 操作培训
- IRC5P 电气维修培训

完成此培训后，您将可以

- 熟悉 IRC5P 机器人控制柜及本体内各单元状态指示灯含义
- 熟悉故障代码的分类含义及快速查找相应的解决方法
- 了解 IRC5P 机器人故障处理的基本思路和常用方法
- 掌握不同启动方式的用法
- 能够独立处理常见故障

课程内容

- 机器人操作安全
- 机器人电气知识简介
- IRC5P 机器人控制柜及本体内各单元状态指示灯状态介绍
- IRC5P 机器人故障代码分类介绍
- 机器人部分启动方式对消除故障的作用
- 控制柜及机器人本体主要单元故障介绍及处理方法
- 案例分析
- 故障排除实践。在模拟的故障场景下定位故障并排除

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the robots with IRC5P controller

Target Groups

- Electrical maintenance engineer
- Project / Process engineer

Prerequisites

- IRC5P Programming
- IRC5P Electrical Maintenance

After this training, you are able to

- Work with the circuit diagrams in the manual
- Diagnose the fault, according to LED status and error code
- Develop the executing ability in analysis strategy and basic method
- Troubleshoot the IRC5P robot independently

Contents

- Safety instruction
- Structure and function of painting robot system
- Description of indicators on the basic electrical unit in IRC5P cabinet and manipulator
- Diagnosis with the error code in IRC5P
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in IRC5 robot
- Case study
- Practice. Analyze and diagnose the faults set by the trainer

Information

- Duration: 2 Days
- Number of participants: 4-6 Persons

CNPR303 S4P+ 电气原理

CNPR303 S4P+ Electrical Principle

适用机型

- 使用 S4P+ 控制系统的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- S4P+ 操作培训

完成此课程后，您将可以

- 了解 S4P+ 机器人系统电气结构
- 熟悉 S4P+ 机器人控制柜各电气单元功能及工作原理
- 熟悉 S4P+ 机器人本体各电气单元功能及工作原理
- 了解主要单元在电路及气路图中的连接走向
- 能够独立完成电气设备日常保养维护和备件替换

课程内容

- 机器人操作安全
- S4P+ 机器人系统
- S4P+ 机器人控制柜中各单元介绍。包括主计算机板、轴计算板、IO 板、ACCB、ACPX、FFB、电源电池单元、BCU、变压器、整流及驱动单元、CBG、ACRB、AEXB、ZB、ALED
- S4P+ 机器人本体中各单元介绍。包括 MCOB、MCCB、SMU
- 主要单元电路图讲解
- 主要电气单元维护保养知识
- 主要电气单元拆装实践操作

课程信息

培训时间：2 天
学员人数：4-6 人 / 班

Applicable Robot Type

- All the robots with S4P+ controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- S4P+ Operation

After this training, you are able to

- Understand electrical structure and function of S4P+ paint robot system
- Be familiar with the function of the electrical units in cabinet
- Be familiar with the function of the electrical units in manipulator
- Work with circuit diagrams
- Implement the basic daily maintenance independently
- Replace the failure part independently.

Contents

- Safety instruction
- Structure and function of painting robot system
- Description of the electrical units in S4P+ cabinet. Include Main Computer, Axis computer IO Unit, ACCB, ACPX, FFB, Power Unit, BCU, Transformer, Rectifier & Drive, CBG, ACRB, AEXB, ZB, ALED
- Description of the electrical units in manipulator, includes MCOB, MCCB, SMU & etc
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Replacement of the failure part
- Practice

Information

- Duration: 2 Days
- Number of participants: 4-6 Persons

CNPR304 S4P+ 故障排除

CNPR304 S4P+ Troubleshooting

适用机型

- 使用 S4P+ 控制系统的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- S4P+ 操作培训
- S4P+ 电气维修培训

完成此培训后，您将可以

- 熟悉 S4P+ 机器人控制柜及本体内各单元状态指示灯含义
- 熟悉故障代码的分类含义及快速查找相应的解决方法
- 了解 S4P+ 机器人故障处理的基本思路和常用方法
- 掌握不同启动方式的用法
- 能够独立处理常见故障

课程内容

- 机器人操作安全
- 机器人电气知识简介
- S4P+ 机器人控制柜及本体内各单元状态指示灯介绍
- S4P+ 机器人故障代码分类介绍
- 几种机器人启动方式的原理及用法
- 控制柜及机器人本体主要单元故障介绍及处理方法
- 案例分析
- 故障排除实践。在模拟的故障场景下定位故障并排除

课程信息

- 培训时间：2 天
- 学员人数：4-6 人 / 班

Applicable Robot Type

- All the robots with S4P+ controller

Target Groups

- Electrical maintenance engineer;
- Project/Process engineer

Prerequisites

- S4P+ Programming
- S4P+ Electrical Maintenance

After this training , you are able to

- Work with the circuit diagrams in the manual
- Diagnose the fault , according to LED status and error code
- Develop the executing ability in analysis strategy and basic method
- Troubleshoot the S4P+ robot independently

Contents

- Safety instruction
- Structure and function of painting robot system
- Description of indicators on the electrical unit in S4P+ cabinet and manipulator
- Troubleshooting base on the error code in S4P+
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in S4P+ robot
- Case study
- Practice. Analyze and diagnose the faults set by the trainer

Information

- Duration: 2 Days
- Number of participants: 4-6 Persons

机械维修

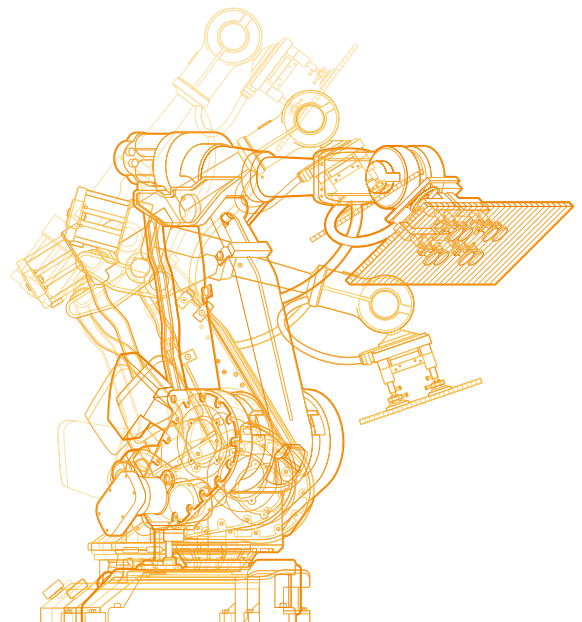
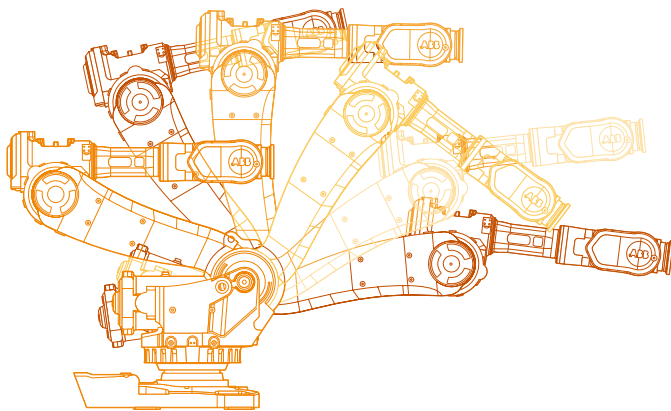
Mechanical Maintenance

喷涂机器人

- CNPR401 IRB 5500 机械维修
- CNPR402 IRB 5400 机械维修
- CNPR403 IRB 580 机械维修
- CNPR404 IRB 540 机械维修

Painting Robot

- CNPR401 IRB 5500 Mechanical Maintenance
- CNPR402 IRB 5400 Mechanical Maintenance
- CNPR403 IRB 580 Mechanical Maintenance
- CNPR404 IRB 540 Mechanical Maintenance



CNPR401 IRB 5500 机械维修

CNPR401 IRB 5500 Mechanical Maintenance

适用机型

- ABB IRB 5500 喷涂机器人

课程对象

- 机械维修工程师

知识要求

- 喷涂机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 参照手册，独立更换各轴电机、电缆
- 参照手册，独立更换机器人手腕、齿轮箱
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人手腕、齿轮箱更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 5500

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Painting robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB painting robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the gearboxes and wrist independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of wrist and gearboxes
- Fine calibration.
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNPR402 IRB 5400 机械维修

CNPR402 IRB 5400 Mechanical Maintenance

适用机型

- ABB IRB 5400 喷涂机器人

课程对象

- 机械维修工程师

知识要求

- 喷涂机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 ABB 工业机器人基本构造
- 掌握机器人本体常用维护保养知识
- 能够独立更换各轴电机、电缆
- 能够独立更换机器人手腕、齿轮箱及平衡装置
- 能够借助仪器对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- ABB 机器人本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人手腕、齿轮箱、平衡装置更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB IRB 5400

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Painting robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of ABB painting robot
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the wrist gearboxes and balancing system independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of the ABB manipulator
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of wrist and gearboxes
- Replacement of balancing system
- Fine calibration
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNPR403 IRB 580 机械维修

CNPR403 IRB 580 Mechanical Maintenance

适用机型

- ABB IRB 580 喷涂机器人

课程对象

- 机械维修工程师

知识要求

- 喷涂机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 IRB 580 喷涂机器人基本构造
- 掌握机器人本体常用维护保养知识
- 能够独立更换各轴电机、电缆
- 能够独立更换机器人手腕、手臂、齿轮箱及平衡装置
- 能够借助校准设备对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- IRB 580 本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人手腕、手臂、齿轮箱、平衡装置更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Painting Robot: IRB 580

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Painting robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of IRB 580
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the arms, wrist and gearboxes independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of IRB 580
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of wrist, arms and gearboxes
- Fine calibration
- Practice

Information

- Duration: 3 days
- Number of participants: 4-8 persons

CNPR404 IRB 540 机械维修

CNPR404 IRB 540 Mechanical Maintenance

适用机型

- ABB IRB 540 喷涂机器人

课程对象

- 机械维修工程师

知识要求

- 喷涂机器人操作培训
- 机械基础知识

完成此课程后，您将可以

- 了解 IRB 540 喷涂机器人基本构造
- 掌握机器人本体常用维护保养知识
- 能够独立更换各轴电机、电缆
- 能够独立更换机器人手腕、手臂、齿轮箱及平衡装置
- 能够借助校准设备对机器人做精校准

培训内容

- ABB 机器人安全操作介绍
- IRB 540 本体硬件结构介绍
- 日常机械维护保养知识介绍及实践
- 各轴电机、电缆更换步骤讲解及实践
- 机器人手腕、手臂、齿轮箱、平衡装置更换方法讲解与实践
- 机器人精校准方法介绍与实践

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- ABB Painting Robot: IRB 540

Target Groups

- Mechanical maintenance engineer

Prerequisites

- Painting robot operation training
- Basic knowledge about robotics mechanics

After this training, you are able to

- Know the structure of IRB 540
- Understand the maintenance method of manipulator
- Refer to the manual, replace the motors and cables independently
- Refer to the manual, replace the arms, wrist and gearboxes independently
- Calibrate the robot after any replacement of mechanical unit

Contents

- Safety instruction
- Structure of IRB 540
- Mechanical maintenance knowledge
- Replacement of motors and cables
- Replacement of wrist, arms and gearboxes
- Fine calibration
- Practice

Information

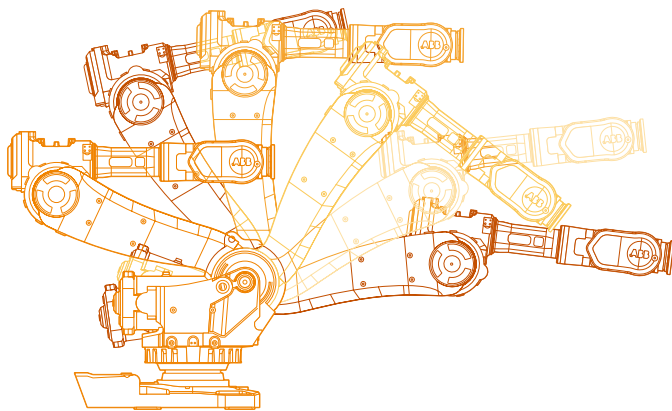
- Duration: 3 days
- Number of participants: 4-8 persons

软件 Software

喷涂机器人

- CNPR501

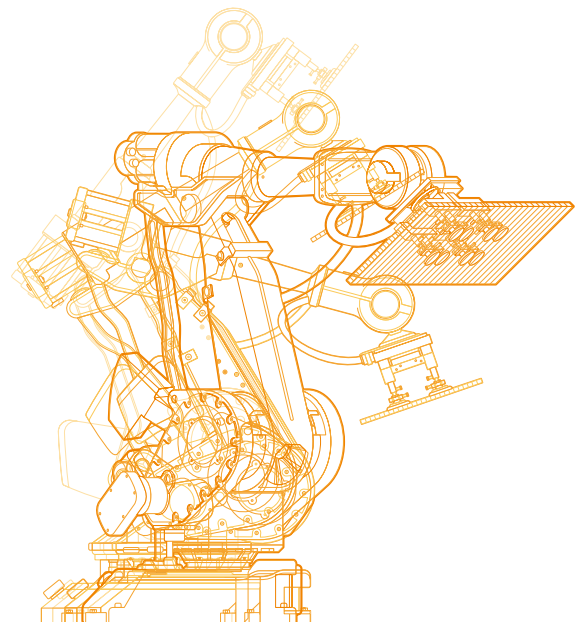
IPS



Painting Robot

- CNPR501

IPS



CNPR501 IPS

CNRP501 IPS

适用机型

- 所有使用 IPS 的 ABB 喷涂机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工

知识要求

- 喷涂机器人操作培训
- 喷涂机器人编程培训
- 喷涂工艺基础知识

完成此课程后，您将可以

- 了解 IPS 系统架构
- 掌握 IPS 的备份与还原方法
- 熟悉 IPS 配置
- 掌握 IPS 版本更新方法
- 了解 IPS 系统诊断（查告警）与调试方法
- 熟悉 IPS 与 EIO 的关系
- 校正常用信号

培训内容

- IPS 系统架构介绍
- IPS 备份与还原的方法
- IPS（2KP）常用参数介绍及配置
- IPS 版本更新方法介绍
- IPS 报警信息查询
- IPS 与 EIO 的关系介绍
- 常用信号校正方法（Fluid, Atom, Shape）

课程信息

- 培训时间：3 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- All the ABB painting robots with IPS

Target Groups

- Project/process engineer
- Electrical maintenance engineer
- Operator

Prerequisites

- Painting robot operation training
- Painting robot programming training
- Basic knowledge about painting process

After this training, you are able to

- Know the structure of IPS
- Backup and restore the IPS
- Be familiar with IPS configuration
- Handle IPS version update
- Troubleshoot the IPS via error code
- Debug the IPS
- Be familiar with the mapping between EIO and IPS
- Adjust the common signal in IPS

Contents

- IPS structure description
- The method of IPS backup and restore
- Common configuration of IPS(2KP)
- IPS version update
- IPS error code
- EIO mapping in IPS
- IPS common signal turning, such as Fluid, Atom, Shape

Information

- Duration: 3 Days
- Number of participants: 4-8 Persons

应用

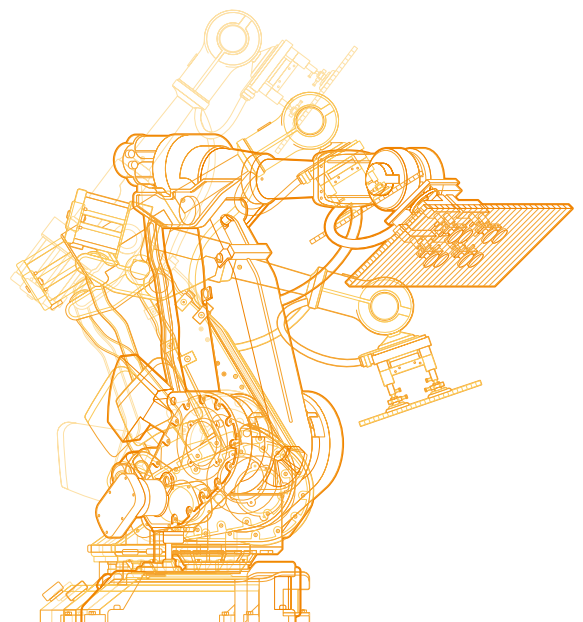
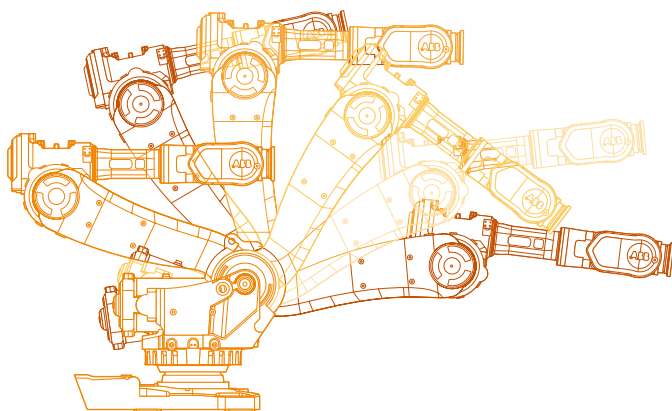
Application

喷涂机器人

- CNPR601 RobView 5
- CNPR602 926 雾化器
- CNPR603 951 雾化器
- CNPR604 RB1000 雾化器

Painting Robot

- CNPR601 RobView 5
- CNPR602 926 Atomizer
- CNRP603 951 Atomizer
- CNRP604 RB1000 Atomizer



CNPR 601 RobView 5

CNPR 601 RobView 5

适用机型

- 使用 ABB 的喷涂机器人

课程对象

- 项目 / 工艺工程师

知识要求

- 喷涂机器人操作培训
- 喷涂机器人编程培训
- 喷涂工艺基础知识

完成此课程后，您将可以

- 灵活管理机器人文件
- 维护管理任务流程
- 实现在线诊断
- IO 在线监控
- 监视与编辑 IPS 参数
- 新建和修改刷子表单
- 新建和修改换色、清洗流程
- 建立和定制用户监控与操作界面

培训内容

- 安装软件与授权激活
- UAS 配置
- File Manager 运用
- Job Queue 管理
- 在线数据诊断与监控
- IPS 监视与编辑
- 刷子表单编辑
- 换色清洗流程编辑
- 监控与操作界面生成

课程信息

- 培训时间： 4 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5P controller

Target group

- Project/Process engineer

Prerequisites

- Painting robot operation training
- Painting robot programming training
- Basic knowledge about painting process

After this training, you are able to

- Manage robot file easily
- Maintain job queue
- Diagnose the data on line
- Monitor the I/O signals on line
- Monitor and edit IPS parameter
- Generate and modify bush table
- Generate and modify color changing and cleaning sequences
- Build and customize user screen for monitoring and operation

Contents

- Software installation and key activation
- User authentication system configuration
- File Manager
- Job Queue Maintenance
- On-line diagnostics and monitoring
- IPS monitoring and configuration
- Bush table editing
- Color changing and cleaning sequences modification
- User screen building

Information

- Duration: 4 Days
- Number of participants: 4-8 Persons

CNPR602 926雾化器

CNRP602 926 Atomizer

适用机型

- 使用 926 雾化器的喷涂机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工

知识要求

- 喷涂机器人操作培训
- 喷涂机器人编程培训
- 喷涂工艺基础知识

完成此课程后，您将可以

- 了解雾化器安全须知
- 掌握 926 雾化器的构造细节及工作原理
- 掌握 926 雾化器的使用注意要点
- 掌握常用雾化器的保养与维护
- 通过调整参数，达到工艺要求

培训内容

- 操作安全
- 926 雾化器的构造细节及工作原理
- 926 雾化器的使用注意要点
- 926 雾化器的保养与维护
- 雾化器参数调整
- 案例分析

课程信息

- 培训时间： 3 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB painting robots with Atomizer(926)

Target Groups

- Project/process engineer
- Electrical maintenance engineer
- Operator

Prerequisites

- Painting robot operation training
- Painting robot programming training
- Basic knowledge about painting process

After this training, you are able to

- Know the safety precaution of atomizer
- Understand the structure and principle of 926
- Understand the key points in 926 application
- Implement the routine maintenance of atomizer
- Modify the parameters to reach the process requirement

Contents

- Safety instruction
- The structure and principle of 926
- Notice in 926 application
- Routine maintenance of 926
- Parameter modification
- Case study

Information

- Duration: 3 Days
- Number of participants: 4-8 Persons

CNPR603 951 雾化器

CNRP603 951 Atomizer

适用机型

- 使用 951 雾化器的喷涂机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工
- 知识要求
- 喷涂机器人操作培训
- 喷涂机器人编程培训
- 喷涂工艺基础知识

完成此课程后，您将可以

- 了解雾化器安全须知
- 掌握 951 雾化器的构造细节及工作原理
- 掌握 951 雾化器的使用注意要点
- 掌握常用雾化器的保养与维护
- 通过调整参数，达到工艺要求

培训内容

- 雾化器发展历史
- 常用雾化器构造
- 951 雾化器的构造细节及工作原理
- 951 雾化器的使用注意要点
- 951 雾化器的保养与维护
- 雾化器参数调整
- 案例分析

课程信息

- 培训时间： 3 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB painting robots with Atomizer(951)

Target Groups

- Project/process engineer
- Electrical maintenance engineer
- Operator

Prerequisites

- Painting robot operation training
- Painting robot programming training
- Basic knowledge about painting process

After this training, you are able to

- Know the safety precaution of atomizer
- Understand the structure and principle of 951
- Understand the key points in 951 application
- Implement the routine maintenance of atomizer
- Modify the parameters to reach the process requirement

Contents

- Safety instruction
- The structure and principle of 951
- Notice in 951 application
- Routine maintenance of 951
- Parameter modification
- Case study

Information

- Duration: 3 Days
- Number of participants: 4-8 Persons

CNPR604 RB1000雾化器

CNRP604 RB1000 Atomizer

适用机型

- 使用 RB1000 雾化器的喷涂机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 操作工

知识要求

- 喷涂机器人操作培训
- 喷涂机器人编程培训
- 喷涂工艺基础知识

完成此课程后，您将可以

- 了解雾化器安全须知
- 掌握 RB1000 雾化器的构造细节及工作原理（外加电、内加电）
- 掌握 RB1000 雾化器的使用注意要点
- 掌握常用雾化器的保养与维护
- 通过调整参数，达到工艺要求

培训内容

- 操作安全
- RB1000 雾化器的构造细节及工作原理
- RB1000 雾化器的使用注意要点
- RB1000 雾化器的保养与维护
- 雾化器参数调整
- 案例分析

课程信息

- 培训时间： 3 天
- 学员人数： 4-8 人 / 班

Applicable Robot Type

- All the ABB painting robots with Atomizer(RB1000)

Target Groups

- Project/process engineer
- Electrical maintenance engineer
- Operator

Prerequisites

- Painting robot operation training
- Painting robot programming training
- Basic knowledge about painting process

After this training, you are able to

- Know the safety precaution of atomizer
- Understand the structure and principle of RB1000
- Understand the key points in RB1000 application
- Implement the routine maintenance of atomizer
- Modify the parameters to reach the process requirement

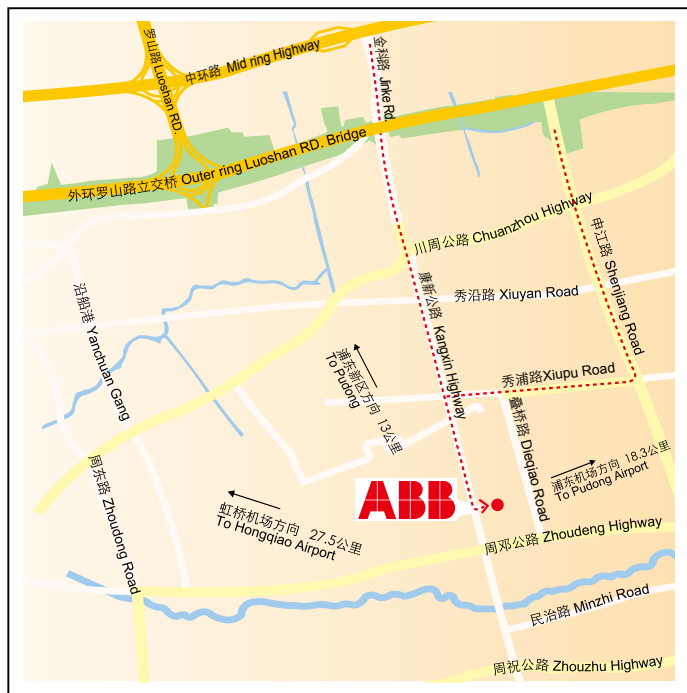
Contents

- Safety instruction
- The structure and principle of RB1000
- Notice in RB1000 application
- Routine maintenance of RB1000
- Parameter modification
- Case study

Information

- Duration: 3 Days
- Number of participants: 4-8 Persons

交通 Transportation



上海ABB机器人培训中心位于上海ABB工程有限公司内部，具体地址为上海市浦东新区康新公路4528号。

- 培训中心距离上海火车站和上海长途汽车总站约30公里左右，出租车单程约100元左右。
- 培训中心距离虹桥国际机场和虹桥火车站约35公里左右，出租车单程约120元左右。
- 培训中心距离浦东国际机场约25公里左右，出租车单程约90元左右。

ABB Robotics Shanghai Training Center is located in ABB Engineering (Shanghai) Ltd. The detailed address is No.4528, Kangxin Highway, Pudong New District, Shanghai.

- The distance between ABB Robotics Shanghai Training Center and Shanghai railway station or Shanghai long-distance bus station is about 30KM, the one way taxi fee is about 100 RMB.
- The distance between ABB Robotics Shanghai Training Center and Hongqiao international airport or Hongqiao railway station is about 35KM, the one way taxi fee is about 120 RMB.
- The distance between ABB Robotics Shanghai Training Center and Pudong international airport is about 25KM, the one way taxi fee is about 90 RMB.

住宿 Accommodation

距离我司较近的宾馆信息如下（仅供参考，详情请直接联系宾馆的预定电话）

- 上海如家快捷酒店（周浦店）
价格：ABB 协议价 RMB175
地址：上海浦东新区沪南公路 3218 号（距离我司 6 公里）
电话：021-68052666
- 上海康桥凯莱酒店
价格：ABB 协议价 RMB300
地址：上海浦东新区康桥川周公路 2689 号近申江路（距离我司约 3 公里）
电话：021-68070000
- 上海浦东假日盛高酒店
价格：ABB 协议价 RMB500
地址：上海浦东新区秀沿路 1088 号（距离我司 2 公里）
电话：021-38291888
- 上海利爵商务酒店
价格：ABB 协议价 RMB278，酒店早晚有车接送
地址：上海浦东新区周康路 169 号，近年家浜路万达广场（距离我司约 2 公里）
电话：021-38100123

Several recommended hotels near ABB Robotics Shanghai Training Center below

- Home Inns, Shanghai Zhoupu
Price : ABB contract price is RMB175
Address : No. 3218, Hunan Road, Pudong, Shanghai.
(6km away from ABB)
Tel : 021-68052666
- Kai Lai Hotel Shanghai Kangqiao
Price : ABB contract price is RMB300
Address : No. 2689, road Chuanzhou, Pudong, Shanghai.
(3km away from ABB)
Tel : 021-68070000
- Holiday Inn Shanghai Pudong Kangqiao
Price : ABB contract price is RMB500
Address : No. 1088, Xiuyan Road, Pudong, Shanghai.
(2km away from ABB)
Tel : 021-38291888
- Li Jue Business Hotel ,Shanghai Kangqiao.
Price : ABB contract price is RMB278 (Hotel provides shuttle bus to ABB)
Address : No. 169, road Zhoukang, Pudong, Shanghai.
(2km away from ABB)
Tel : 021-38100123

联系我们

Contact us

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ABB Robot Webpage: <http://www.abb.com.cn/robotics>

ABB机器人上海培训中心主页: <http://www.abb.com.cn/product/zh/9AAC128749.aspx?country=CN>
ABB Robotics Training Center Webpage: <http://www.abb.com.cn/product/zh/9AAC128749.aspx?country=CN>

