
培训手册 2021

Training Manual 2021



欢迎来到 ABB 机器人培训中心

Welcome to ABB Robot Training Center

ABB机器人是工业机器人、协作机器人及先进的数字化服务的开拓者。作为全球领先的工业机器人技术提供商，ABB机器人在53个国家、100多个地区开展业务，全球累计装机量40余万台，涉及广泛的行业和应用领域。ABB致力于帮助客户提高生产柔性、效率、安全性和可靠性，助其走向互联、协作的未来工厂。

ABB机器人是中国工业机器人行业的先行者和领跑者，早在1994年就开始在中国市场推广工业机器人应用，早在2005年就开始在中国开展研发和生产工作，是最早在中国开展工业机器人本地研发和本地生产的跨国企业。

ABB机器人提供完整的产品系列，包括裸机、软件、外围设备、模块单元、多种应用、系统集成及服务，是全球唯一一家提供汽车生产全部四大工艺（冲压、白车身、涂装、总装）的机器人解决方案的供应商，也是截至目前唯一一家在华开展机器人从研发、生产、销售、工程、系统集成到服务全价值链业务的跨国企业。ABB机器人在中国拥有约2,000名员工，遍布20余座城市。

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。

ABB Robotics is a pioneer in industrial and collaborative robots and advanced digital services. As one of the world's leading robotics suppliers, we are active in 53 countries and over 100 locations and have shipped over 400,000 robot solutions in a diverse range of industries and applications. We help our customers to improve flexibility, efficiency, safety and reliability, while moving towards the connected and collaborative factory of the future.

ABB Robotics is an early bird and market leader in the industrial robot industry in China. It started business in China as early as in 1994 and it is the first multi-national company to start local R&D and manufacturing in China as early as in 2005.

ABB Robotics provides full portfolio from naked robot, software, peripheral equipment, module cell, various applications, system integration to service. ABB is the world's only robotics company to provide complete solution from press automation, body-in-white, paint automation to powertrain assembly to auto manufacturing industry. ABB Robotics is the only multi-national robotics company to localize full value chain from R&D, manufacturing, sales, engineering, system integration to service in China. ABB Robotics has around 2,000 employees located in more than 20 cities.

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.

目录

012	机器人培训企业用户课程指南
014	机器人培训企业学员技能等级体系
016	校企合作课程指南和技能等级体系
018	机器人培训课程分类
020	工业机器人
022	工业机器人操作课程汇总
023	CNIO101 IRC5 操作
024	CNIO102 IRB 14000 操作
025	CNIO103 IRC5 现场安装
026	CNIO201 OminCore 操作
027	工业机器人编程课程汇总
028	CNIP001 S4C + 基础编程
029	CNIP002 S4C + 高级编程
030	CNIP101 IRC5 机器人基础编程
031	CNIP102 IRC5 机器人高级编程
032	CNIP103 IRB 14000 基础编程
033	CNIP150 VWRS 基础编程
034	CNIP201 OminCore 基础编程
035	工业机器人电气原理及故障排除课程汇总
036	CNIE101 IRC5 电气原理 & 故障排除
037	CNIE102 IRC5 Compact 电气原理 & 故障排除
038	CNIE103 IRB 14000 电气原理
039	CNIE104 IDFP 电气原理
040	CNIE161 BMW L7 IRC5 电气原理及故障排除

Catalogue

- 012 **Course Selection For Enterprise Users**
- 014 **Skill-Level System For Enterprise Users**
- 016 **Course Guide And Skill-Level System For School-Enterprise Cooperative Students**
- 018 **Training Course Category**
- 020 **Industry Robot**
- 022 **Industry Robot Operation Training Courses**
- 023 CNIO101 IRC5 Operation
- 024 CNIO102 IRB 14000 Operation
- 025 CNIO103 IRC5 Installation Instruction of Industrial Robot
- 026 CNIO201 OminCore Operation
- 027 **Industry Robot Programming Training Courses**
- 028 CNIP001 S4C + Basic Programming
- 029 CNIP002 S4C + Advanced Programming
- 030 CNIP101 IRC5 Basic Programming
- 031 CNIP102 IRC5 Advanced Programming
- 032 CNIP103 IRB 14000 Basic Programming
- 033 CNIP150 VWRS Basic Programming
- 034 CNIP201 OminCore Basic Programming
- 035 **Industry Robot Electrical Principle and Troubleshooting Training Courses**
- 036 CNIE101 IRC5 Electrical Principle & Troubleshooting
- 037 CNIE102 IRC5 Compact Electrical Principle & Troubleshooting
- 038 CNIE103 IRB 14000 Electrical Principle
- 039 CNIE104 IDFP Electrical Principle
- 040 CNIE161 BMW L7 IRC5 Electrical Principle & Troubleshooting

目录

041	CNIE162 BMW G2X IRC5 电气原理及故障排除
042	CNIE201 OminCore 电气原理
043	工业机器人机械维修课程汇总
044	CNIM010 IDFP 机械维修
045	CNIM110 IRB1100 机械维修
046	CNIM120 IRB 120 机械维修
047	CNIM121 IRB 1200 机械维修
048	CNIM140 IRB 140 机械维修
049	CNIM141 IRB 14000 机械维修
050	CNIM142 IRB14050 机械维修
051	CNIM143 IRB 1410 机械维修（兼容IRB 1400）
052	CNIM150 IRB 1520 机械维修
053	CNIM160 IRB 1600 机械维修
054	CNIM240 IRB 2400 机械维修
055	CNIM260 IRB 2600 机械维修（兼容IRB 4600）
056	CNIM360 IRB 360 机械维修（兼容IRB 340）
057	CNIM460 IRB 460 机械维修（兼容IRB 260/IRB 660/IRB 760）
058	CNIM660 IRB 6640 机械维修（兼容IRB 6620）
059	CNIM670 IRB 6700 机械维修
060	CNIM760 IRB7600 机械维修
061	CNIM870 IRB8700 机械维修
062	CNIM910 IRB910 SCARA 机械维修（兼容IRB910 Inv）
063	工业机器人软件课程汇总
064	CNIS101 RobotStudio 软件
065	CNIS110 PickMaster 3 软件

Catalogue

- 041 CNIE162 BMW G2X IRC5 Electrical Principle & Troubleshooting
- 042 CNIE201 OminCore Electrical Principle
- 043 **Industry Robot Mechanical Maintenance Training Courses**
- 044 CNIM010 IDFP Mechanical Maintenance
- 045 CNIM110 IRB1100 Mechanical Maintenance
- 046 CNIM120 IRB 120 Mechanical Maintenance
- 047 CNIM121 IRB 1200 Mechanical Maintenance
- 048 CNIM140 IRB 140 Mechanical Maintenance
- 049 CNIM141 IRB 14000 Mechanical Maintenance
- 050 CNIM142 IRB14050 Mechanical Maintenance
- 051 CNIM143 IRB 1410 Mechanical Maintenance (Compatibility IRB 1400)
- 052 CNIM150 IRB 1520 Mechanical Maintenance
- 053 CNIM160 IRB 1600 Mechanical Maintenance
- 054 CNIM240 IRB 2400 Mechanical Maintenance
- 055 CNIM260 IRB 2600 Mechanical Maintenance (Compatibility IRB 4600)
- 056 CNIM360 IRB 360 Mechanical Maintenance (Compatibility IRB 340)
- 057 CNIM460 IRB 460 Mechanical Maintenance (Compatibility IRB 260/IRB 660/IRB 760)
- 058 CNIM660 IRB 6640 Mechanical Maintenance (Compatibility IRB 6620)
- 059 CNIM670 IRB 6700 Mechanical Maintenance
- 060 CNIM760 IRB7600 Mechanical Maintenance
- 061 CNIM870 IRB8700 Mechanical Maintenance
- 062 CNIM910 IRB910 SCARA Mechanical Maintenance (Compatibility IRB910 Inv)
- 063 **Industry Robot Software Training Courses**
- 064 CNIS101 RobotStudio Software
- 065 CNIS110 PickMaster 3 Software

目录

066	工业机器人应用课程汇总
067	CNIA101 弧焊工艺应用
068	CNIA102 点焊工艺应用
069	CNIA103 SafeMove 1 & EPS 应用
070	CNIA104 SafeMove2 应用
071	CNIA105 视觉系统
072	CNIA106 MultiMove 应用
073	CNIA107 VWRS 应用
074	CNIA108 IDFP 基础应用
075	CNIA109 力控应用
076	CNIA110 总线配置与视觉通讯
077	喷涂机器人
078	喷涂机器人操作课程汇总
079	CNPO001 S4P + 操作
080	CNPO101 IRC5P 操作
081	CNPO102 IRC5P 现场安装
082	喷涂机器人编程课程汇总
083	CNPP001 S4P + 编程
084	CNPP101 IRC5P 编程
085	喷涂机器人电气原理及故障处理课程汇总
086	CNPE001 S4P + 电气原理&故障排除
087	CNPE101 IRC5P 电气原理&故障排除

Catalogue

066 **Industry Robot Application Training Courses**

- 067 CNIA101 Arcwelding Application
- 068 CNIA102 Spotwelding Application
- 069 CNIA103 SafeMove 1 & EPS Application
- 070 CNIA104 SafeMove2 Application
- 071 CNIA105 Integrated Vision
- 072 CNIA106 MultiMove Application
- 073 CNIA107 VWRS Application
- 074 CNIA108 IDFP Basic Application
- 075 CNIA109 Force Control
- 076 CNIA110 Industry Network Configuration And Vision Application

077 **Painting Robot**

078 **Painting Robot Operation Training Courses**

- 079 CNPO001 S4P + Operation
- 080 CNPO101 IRC5P Operation
- 081 CNPO102 Installation Instruction of Painting Robot

082 **Painting Robot Programming Training Courses**

- 083 CNPP001 S4P + Programming
- 084 CNPP101 IRC5P Programming

085 **Painting Robot Electrical Principle & Troubleshooting Training Courses**

- 086 CNPE001 S4P + Electrical Principle & Troubleshooting
- 087 CNPE101 IRC5P Electrical Principle & Troubleshooting

目录

088	喷涂机器人机械维修课程汇总
089	CNPM101 RB926 雾化器
090	CNPM102 RB951 雾化器
091	CNPM110 RB1000 雾化器
092	CNPM540 IRB 5400 机械维修
093	CNPM541 IRB 540 机械维修
094	CNPM550 IRB 5500 机械维修
095	CNPM580 IRB 580 机械维修
096	喷涂机器人软件课程汇总
097	CNPS101 RobotStudio 软件（喷涂）
098	CNPS110 IPS (RW5) 软件
099	CNPS111 IPS (RW6) 软件
100	CNPS120 RobView 5 软件
101	喷涂机器人应用课程汇总
102	CNPA101 涂装工艺（换色、清洗）
103	ABB校企合作——机器人技术及应用
104	CNES101 高校学生初级培训课程
105	CNES102 高校学生中级培训课程
106	CNET101 高校讲师初级培训课程
107	CNET102 高校讲师中级培训课程
108	CNEP101 机器人通用技能社教联合班培训课程
109	CNEP102 机器人高阶技能社教联合班培训课程
110	交通
111	住宿

Catalogue

088 **Painting Robot Mechanical Maintenance Training Courses**

- 089 CNPM101 RB926 Atomizer
- 090 CNPM102 RB951 Atomizer
- 091 CNPM110 RB1000 Atomizer
- 092 CNPM540 IRB 5400 Mechanical Maintenance
- 093 CNPM541 IRB 540 Mechanical Maintenance
- 094 CNPM550 IRB 5500 Mechanical Maintenance
- 095 CNPM580 IRB 580 Mechanical Maintenance

096 **Painting Robot Software Training Courses**

- 097 CNPS101 RobotStudio software (Painting)
- 098 CNPS110 IPS(RW5) Software
- 099 CNPS111 IPS(RW6) Software
- 100 CNPS120 RobView 5 Software

101 **Painting Robot Application Training Courses**

- 102 CNPA101 Painting process (ColorChange and Cleaning)

103 **ABB Robot School-Enterprise Cooperative—Robotics Technology and Application**

- 104 CNES101 College student' Basic Skill Course
- 105 CNES102 College student' Intermediate Skill Course
- 106 CNET101 College Instructor' Basic Skill Course
- 107 CNET102 College Instructor' Intermediate Skill Course
- 108 CNEP101 ABB Robotics General Skill Course
- 109 CNEP102 ABB Robotics Higher Skill Course

110 **Transportation**

111 **Accommodation**

机器人培训

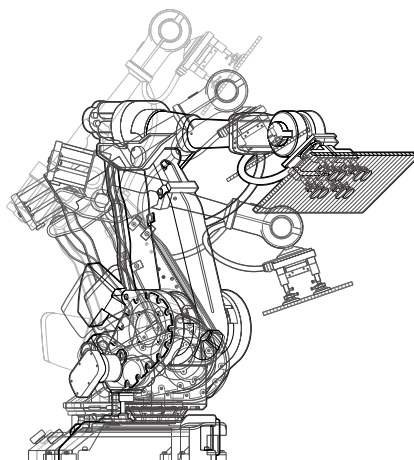
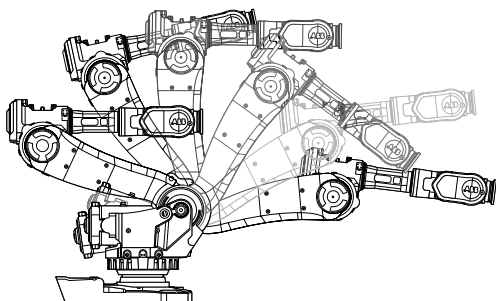
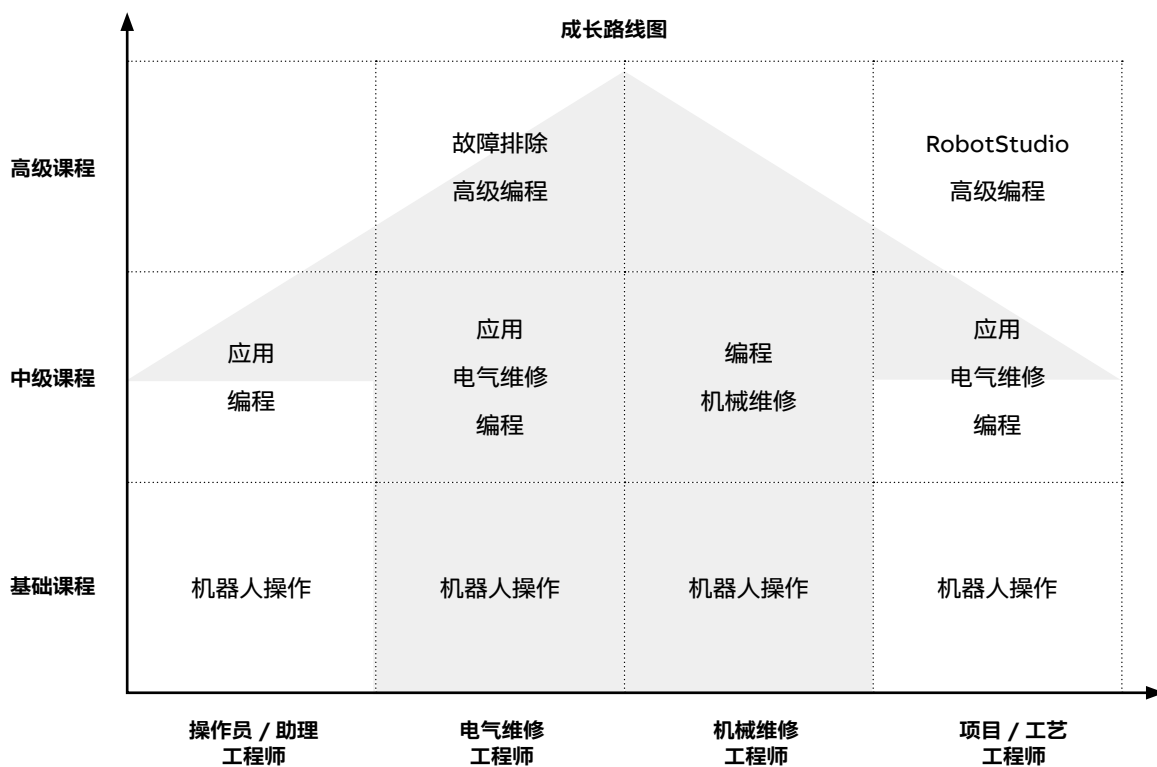
企业用户课程选择

欢迎来到上海 ABB 机器人培训中心，我们共有 6 大类 74 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。

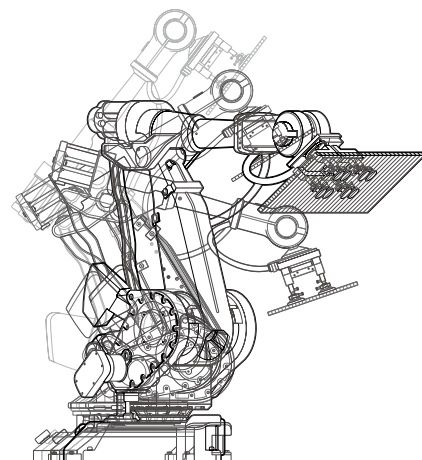
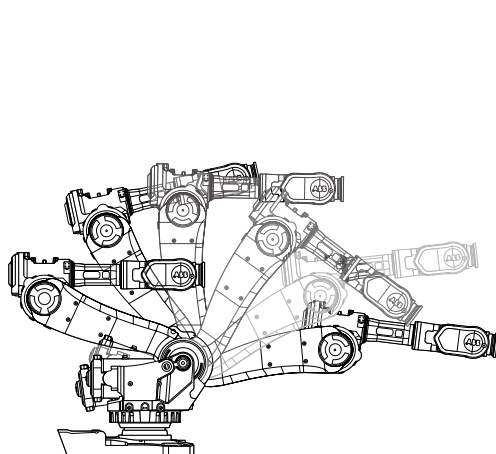
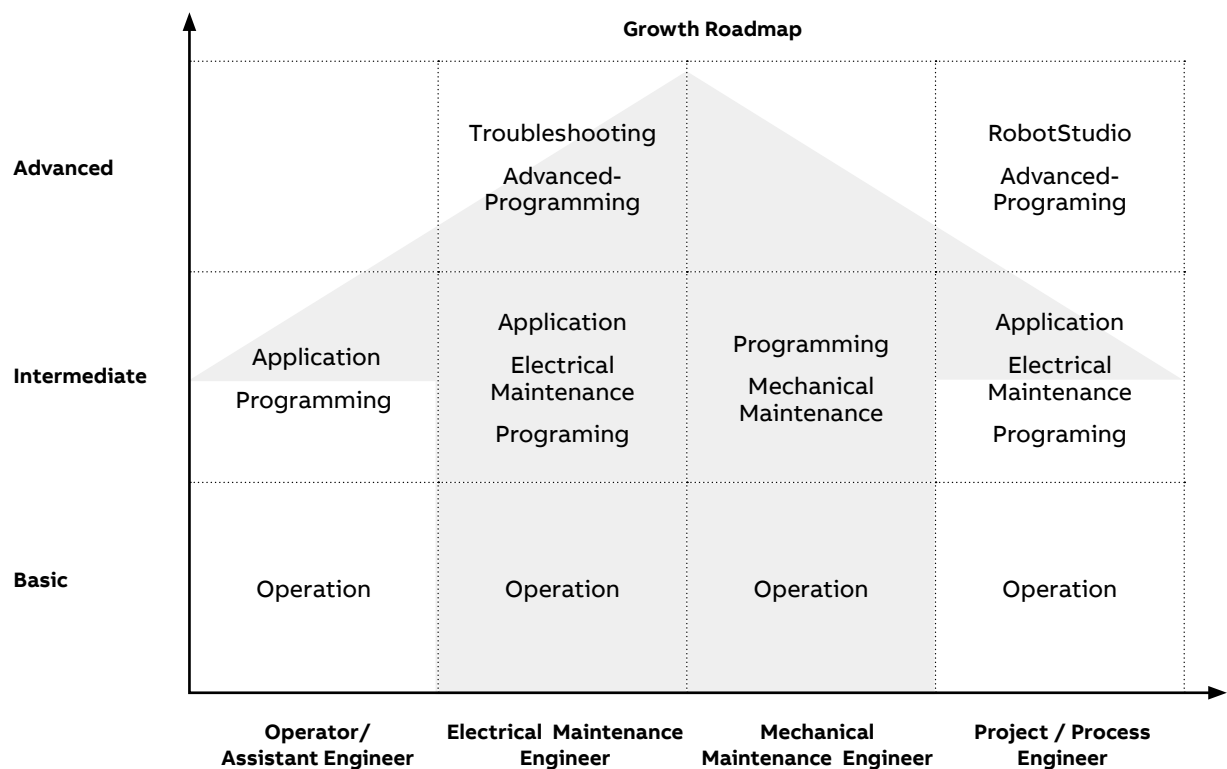
如果您对课程有特别需求，我们也乐意为您提供定制化培训。



Robotics Training

Course Selection For Enterprise Users

Welcome to ABB training center Shanghai. We provide 6 categories, 74 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 .

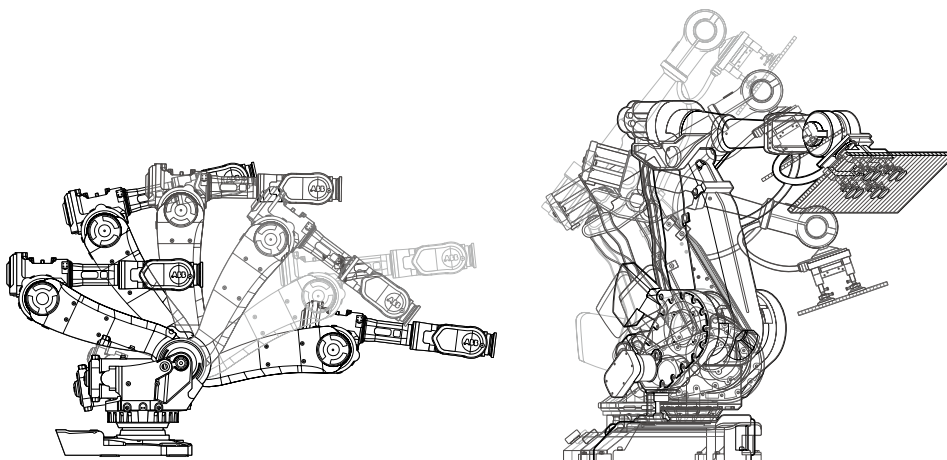


机器人培训

企业学员技能等级体系

高级课程		高级编程 故障排除 CNIP 102		高级编程 RobotStudio CNIP 102 CNIS 101
	应用 编程	应用 编程 电气维修	编程 机械维修	应用 编程 电气维修
	CNIP 101 OP: CNIA103 OP: CNIP103 OP: CNIA105 OP: CNIP001 OP: CNIA106 OP: CNIA101 OP: CNIA102	CNIP 101 CNIA101 CNIE 101 CNIA102 CNIE102 CNIA103 CNIE103 CNIA105 CNIP103 CNIA106 CNIP001	CNIP 101 CNIM142 CNIM 110 CNIM121 CNIM240 CNIM140 CNIM360 CNIM150 CNIM460 CNIM141 CNIM160	CNIP 101 CNIA101 CNIE 101 CNIA102 CNIE102 CNIA103 CNIE103 CNIA105 CNIP103 CNIA106 CNIP001
中级课程				
基础课程	机器人操作 CNIO 101 OP: CNIO 102	机器人操作 CNIO 101 OP: CNIO 102	机器人操作 CNIO 101 OP: CNIO 102	机器人操作 CNIO 101 OP: CNIO 102
	操作员 / 助理 工程师	电气维修工程师	机械维修工程师	项目 / 工艺工程师

备注：需完成指定课程，或指定可选课程中的一门或任意门，即可授予相应证书，或申请更高层级课程。证书中将体现完成课程明细。

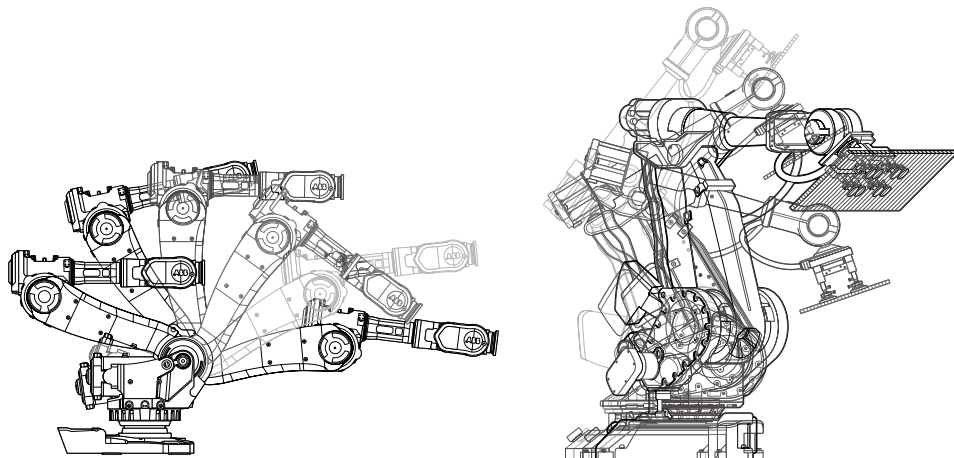


Robotics Training

Skill-Level System For Enterprise Users

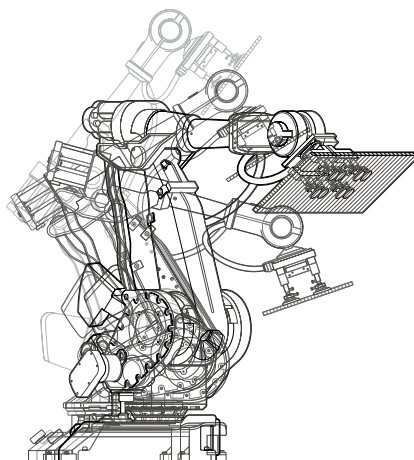
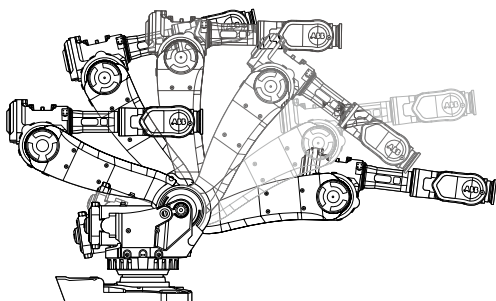
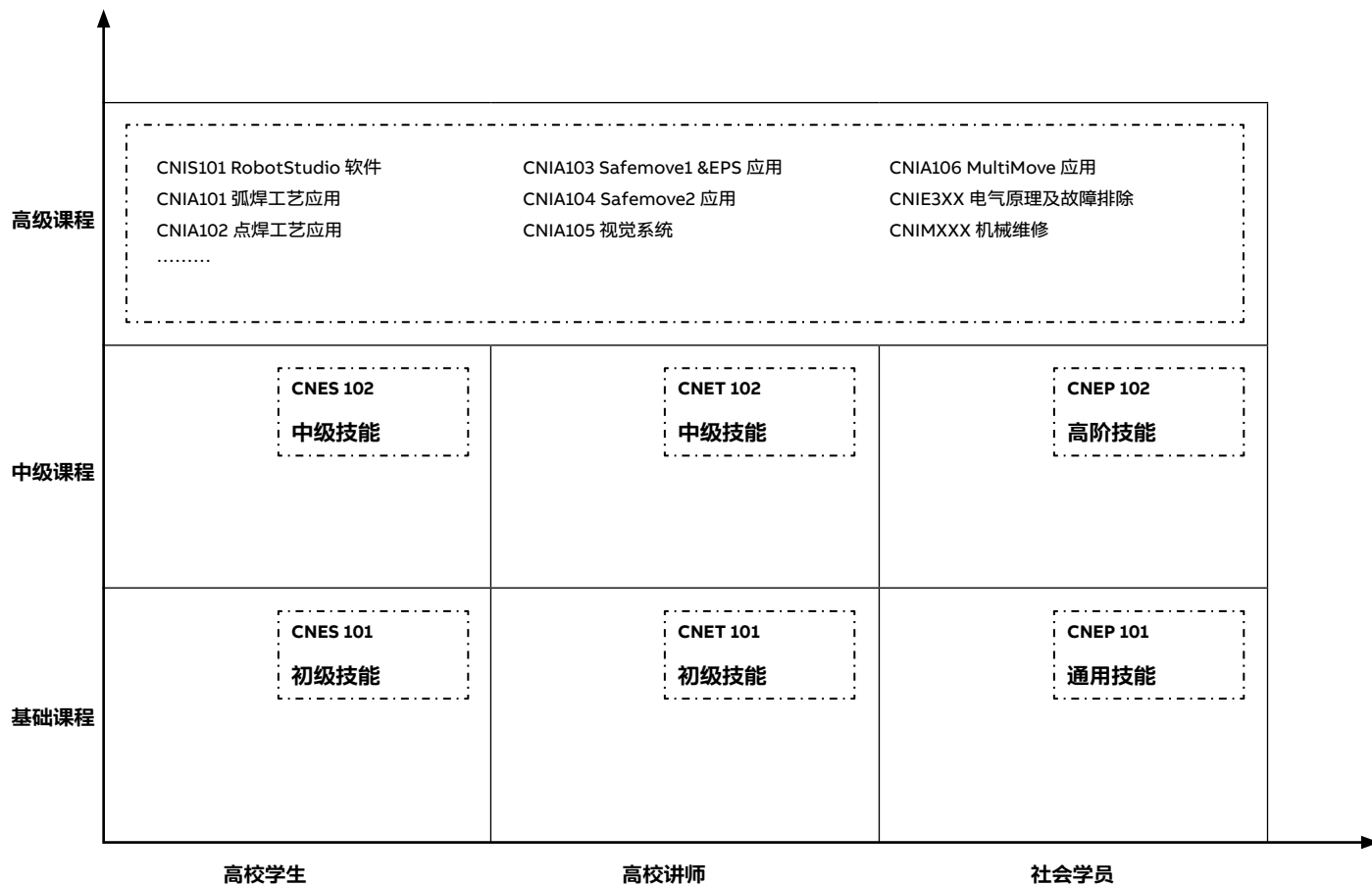
Advanced		Advanced Programming Troubleshooting CNIP 102		Advanced Programming Robotstudio CNIP 102 CNIS 101
	Application Programming	Application Programming Electrical Maintenance	Programming Mechanical Maintenance	Application Programming Electrical Maintenance
Intermediate	CNIP 101 OP: CNIA103 OP: CNIP103 OP: CNIA105 OP: CNIP001 OP: CNIA106 OP: CNIA101 OP: CNIA102	CNIP 101 CNIA101 CNIE 101 CNIA102 CNIE102 CNIA103 CNIE103 CNIA105 CNIP103 CNIA106 CNIP001 	CNIP 101 CNIM142 CNIM 110 CNIM121 CNIM240 CNIM140 CNIM360 CNIM150 CNIM460 CNIM141 CNIM160 	CNIP 101 CNIA101 CNIE 101 CNIA102 CNIE102 CNIA103 CNIE103 CNIA105 CNIP103 CNIA106 CNIP001
	Operation CNIO 101 OP: CNIO 102	Operation CNIO 101 OP: CNIO 102	Operation CNIO 101 OP: CNIO 102	Operation CNIO 101 OP: CNIO 102
Basic	Operator/ Assistant Engineer	Electrical Maintenance Engineer	Mechanical Maintenance Engineer	Project/Process Engineer

Tips: Completed specified courses, one or more optional courses, can authorized certification, or apply for higher level course.
Certification will list course name.



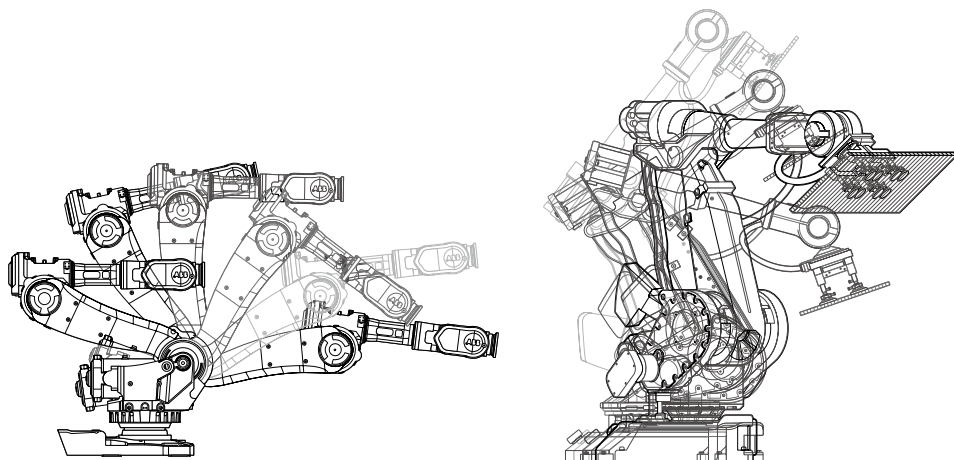
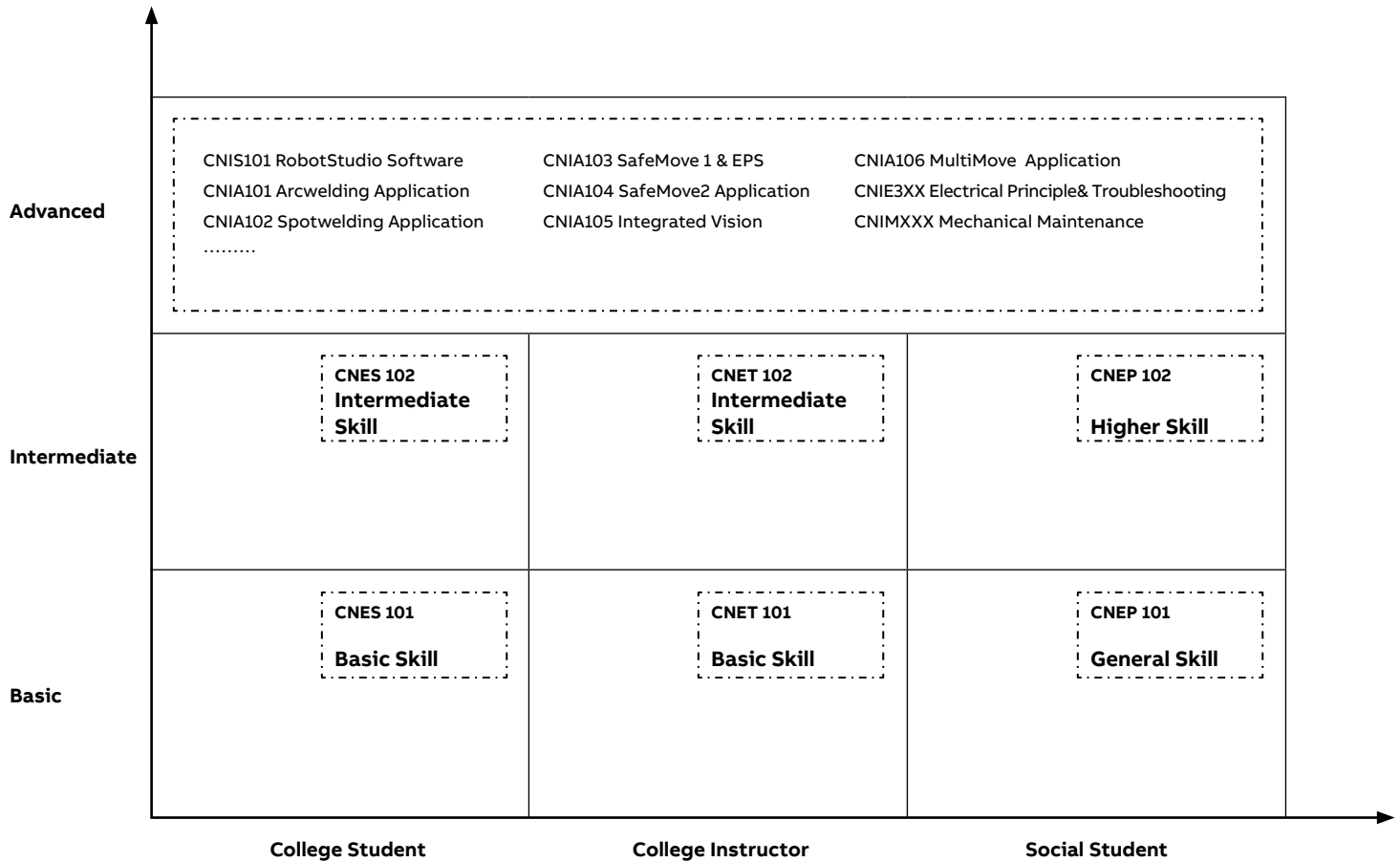
机器人培训

校企合作学员课程指南和技能等级体系



Robotics Training

Course Guide And Skill-Level System For School-Enterprise Cooperative Students



机器人培训

分类



- 操作



- 机械维修



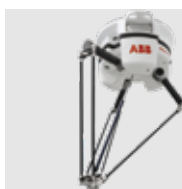
- 编程



- 软件



- 电气维修



- 应用



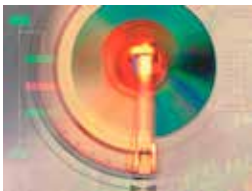
Robotics Training Category



- **Operation**



- **Mechanical Maintenance**



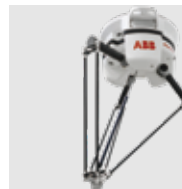
- **Programming**



- **Software**



- **Electrical Maintenance**



- **Application**



工业机器人

Industry Robot

- CNIO101 IRC5 操作
- CNIO102 IRB 14000 操作
- CNIO103 IRC5 现场安装
- CNIO201 OminCore 操作
- CNIP001 S4C + 基础编程
- CNIP002 S4C + 高级编程
- CNIP101 IRC5 机器人基础编程
- CNIP102 IRC5 机器人高级编程
- CNIP103 IRB 14000 基础编程
- CNIP150 VWRS 基础编程
- CNIP201 OminCore 机器人基础编程
- CNIE101 IRC5 机器人电气原理 & 故障排除
- CNIE102 IRC5 Compact 电气原理 & 故障排除
- CNIE103 IRB 14000 电气原理
- CNIE104 IDFP 电气原理
- CNIE161 BMW L7 IRC5 电气原理及故障排除
- CNIE162 BMW G2X IRC5 电气原理及故障排除
- CNIE201 OminCore 电气原理
- CNIM010 IDFP 机械维修
- CNIM110 IRB1100 机械维修
- CNIM120 IRB 120 机械维修
- CNIM121 IRB 1200 机械维修
- CNIM140 IRB 140 机械维修
- CNIM141 IRB 14000 机械维修
- CNIM142 IRB14050 机械维修
- CNIM143 IRB 1410 机械维修（兼容 IRB 1400）

- CNIO101 IRC5 Operation
- CNIO102 IRB 14000 Operation
- CNIO103 IRC5 Installation Instruction of Industrial Robot
- CNIO201 OminCore Operation
- CNIP001 S4C + Basic Programming
- CNIP002 S4C + Advanced Programming
- CNIP101 IRC5 Basic Programming
- CNIP102 IRC5 Advanced Programming
- CNIP103 IRB 14000 Basic Programming
- CNIP150 VWRS Basic Programming
- CNIP201 OminCore Basic Programming
- CNIE101 IRC5 Electrical Principle & Troubleshooting
- CNIE102 IRC5 Compact Electrical Principle & Troubleshooting
- CNIE103 IRB 14000 Electrical Principle
- CNIE104 IDFP Electrical Principle
- CNIE161 BMW L7 IRC5 Electrical Principle & Troubleshooting
- CNIE162 BMW G2X IRC5 Electrical Principle & Troubleshooting
- CNIE201 OminCore Electrical Principle
- CNIM010 IDFP Mechanical Maintenance
- CNIM110 IRB1100 Mechanical Maintenance
- CNIM120 IRB 120 Mechanical Maintenance
- CNIM121 IRB 1200 Mechanical Maintenance
- CNIM140 IRB 140 Mechanical Maintenance
- CNIM141 IRB 14000 Mechanical Maintenance
- CNIM142 IRB14050 Mechanical Maintenance
- CNIM143 IRB 1410 Mechanical Maintenance
(Compatibility IRB 1400)

- CNIM150 IRB 1520 机械维修
 - CNIM160 IRB 1600 机械维修
 - CNIM240 IRB 2400 机械维修
 - CNIM260 IRB 2600 机械维修 (兼容 IRB 4600)
 - CNIM360 IRB 360 机械维修 (兼容 IRB 340)
 - CNIM460 IRB 460 机械维修 (兼容 IRB 260/IRB 660/IRB 760)
 - CNIM660 IRB 6640 机械维修 (兼容 IRB 6620)
 - CNIM670 IRB 6700 机械维修
 - CNIM760 IRB7600 机械维修
 - CNIM870 IRB8700 机械维修
 - CNIM910 IRB910 SCARA 机械维修 (兼容 IRB910 Inv)
 - CNIS101 RobotStudio 软件
 - CNIS110 PickMaster 3 软件
 - CNIA101 弧焊工艺应用
 - CNIA102 点焊工艺应用
 - CNIA103 SafeMove 1 & EPS 应用
 - CNIA104 SafeMove2 应用
 - CNIA105 视觉系统
 - CNIA106 MultiMove 应用
 - CNIA107 VWRS 应用
 - CNIA108 IDFP 基础应用
 - CNIA109 力控应用
 - CNIA110 总线配置与视觉通讯
- CNIM150 IRB 1520 Mechanical Maintenance
 - CNIM160 IRB 1600 Mechanical Maintenance
 - CNIM240 IRB 2400 Mechanical Maintenance
 - CNIM260 IRB 2600 Mechanical Maintenance (Compatibility IRB 4600)
 - CNIM360 IRB 360 Mechanical Maintenance (Compatibility IRB 340)
 - CNIM460 IRB 460 Mechanical Maintenance (Compatibility IRB 260/IRB 660/IRB 760)
 - CNIM660 IRB 6640 Mechanical Maintenance (Compatibility IRB 6620)
 - CNIM670 IRB 6700 Mechanical Maintenance
 - CNIM760 IRB7600 Mechanical Maintenance
 - CNIM870 IRB8700 Mechanical Maintenance
 - CNIM910 IRB910 SCARA Mechanical Maintenance (Compatibility IRB910 Inv)
 - CNIS101 RobotStudio Software
 - CNIS110 PickMaster 3 Software
 - CNIA101 Arcwelding Application
 - CNIA102 Spotwelding Application
 - CNIA103 SafeMove 1 & EPS Application
 - CNIA104 SafeMove2 Application
 - CNIA105 Integrated Vision
 - CNIA106 MultiMove Application
 - CNIA107 VWRS Application
 - CNIA108 IDFP Basic Application
 - CNIA109 Force Control
 - CNIA110 Industry Network Configuration And Vision Application

机器人操作

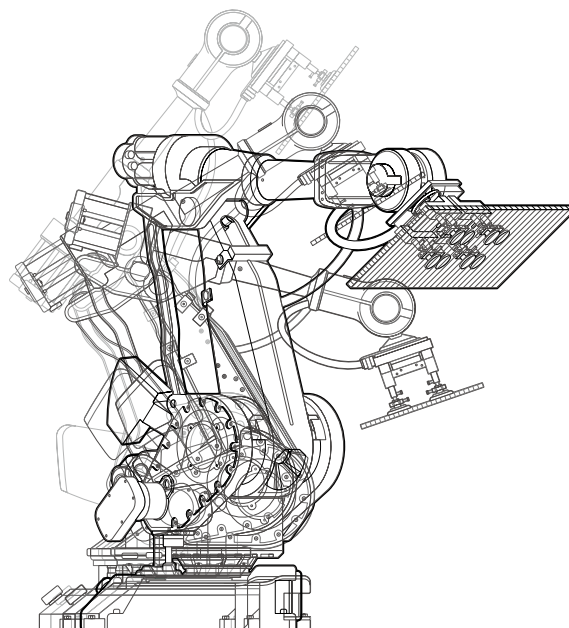
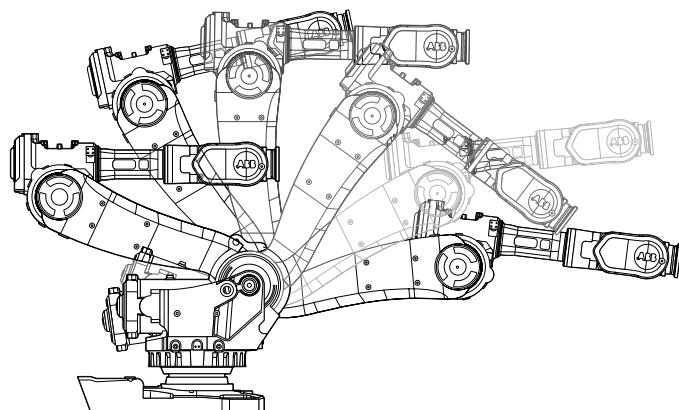
Operation

工业机器人

- CNIO101 IRC5 操作
- CNIO102 IRB 14000 操作
- CNIO103 IRC5 现场安装
- CNIO201 OminCore 操作

Industry Robot

- CNIO101 IRC5 Operation
- CNIO102 IRB 14000 Operation
- CNIO103 IRC5 Installation Instruction of Industrial Robot
- CNIO201 OminCore Operation



CNIO101 IRC5 操作

CNIO101 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: 4-10 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: 4-10 persons

CNIO102 IRB 14000 操作

CNIO102 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 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: 4-10 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: 4-10 persons

CNIO103 IRC5 现场安装

CNIO103 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

CNIO201 OminCore 操作

CNIO201 OminCore Operation

适用机型

- 使用 OmniCore 控制系统的所有机器人

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 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
- 操作实践

课程信息

- 培训时间: 3 天
- 学员人数: 4-10 人 / 班

Applicable Robot Type

- All the ABB robot with OmniCore controller

Target group

- 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 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: 4-10 persons

编程

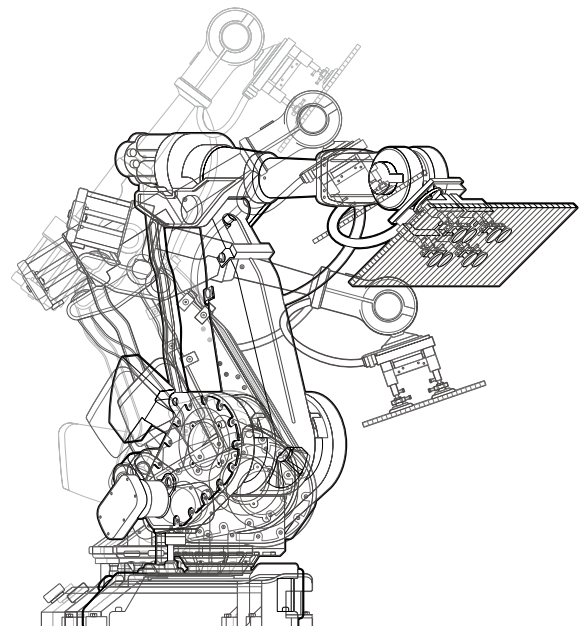
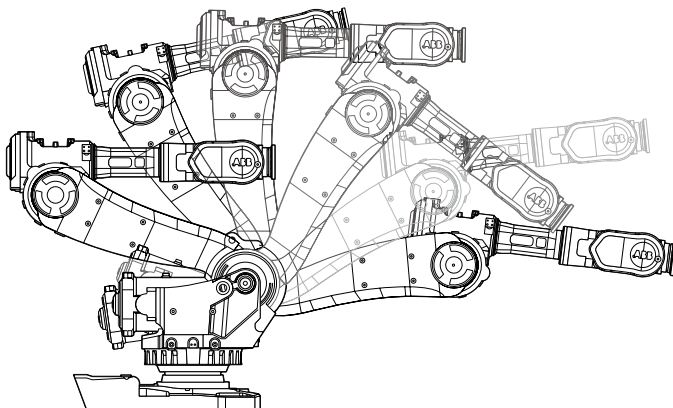
Programming

工业机器人

- CNIP001 S4C + 基础编程
- CNIP002 S4C + 高级编程
- CNIP101 IRC5 基础编程
- CNIP102 IRC5 高级编程
- CNIP103 IRB 14000 编程
- CNIP150 VWRS 基础编程
- CNIP201 OminCore 基础编程

Industry Robot

- CNIP001 S4C + Basic Programming
- CNIP002 S4C + Advanced Programming
- CNIP101 IRC5 Basic Programming
- CNIP102 IRC5 Advanced Programming
- CNIP103 IRB 14000 Basic Programming
- CNIP150 VWRS Basic Programming
- CNIP201 OminCore Basic Programming



CNIP001 S4C + 基础编程

CNIP001 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
- 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: 4-10 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

Information

- Duration: 5 days
- Number of participants: 4-10 persons

CNIP002 S4C + 高级编程

CNIP002 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：4-10 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: 4-10 persons

CNIP101 IRC5 基础编程

CNIP101 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: 4-10 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

Information

- Duration: 5 days
- Number of participants: 4-10 persons

CNIP102 IRC5 高级编程

CNIP102 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：4-10 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: 4-10 persons

CNIP103 IRB 14000 基础编程

CNIP103 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
- 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: 4-10 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

Information

- Duration: 5 days
- Number of participants: 4-10 persons

CNIP150 VWRS 基础编程

CNIP150 VWRS Basic Programming

适用机型

- 使用 VWRS 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 设备维护工程师

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 机器人系统组成
- 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
- 了解 VWRS 标准下的 RAPID 语言结构并能调试简单例程
- 备份 / 加载程序，备份 / 恢复系统
- 对机器人进行转速计数器更新

培训内容

- 系统安全
- IRC5 系统介绍
- ABB 示教器标准菜单及功能介绍
- 手动操作机器人
- ABB 机器人坐标系介绍及定义
- RAPID 程序结构与基本指令介绍
- 系统备份与恢复
- 转速计数器更新
- VWRS 自动生产界面常规功能介绍
- VWRS RAPID 编程基础入门
- VWRS 应用调试窗口介绍及基本指令入门
- VWRS 基本信号介绍
- Profinet 信号配置

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 VWRS

Target group

- Project/Process engineer
- Maintenance engineer

Prerequisites

- Basic English skill

After this training, you are able to

- Understand the structure of ABB robot
- Understand coordinates in robot system
- Operate robot with TPU in manual mode
- Know basic RAPID in VWRS, debug the simple program
- Save and load program. Backup and restore system
- Update revolution counter

Contents

- System safety
- IRC5 system introduction
- ABB FPU menu and function introduction
- Operating robot in manual mode
- ABB coordinate systems
- Structure & basic instruction of RAPID
- System backup & restore
- Revolution counter update
- Production Screen (VWRS standards)
- Basic knowledge of RAPID Programming (VWRS standards)
- Application service windows and basic instructions in VWRS
- I/O Signals (VWRS standards)
- Profinet configuration in robot

Information

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

CNIP201 OminCore 基础编程

CNIP201 OminCore Basic Programming

适用机型

- 使用 OmniCore 控制系统的所有机器人

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

培训内容

- 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
- 校准方式介绍
- 操作实践

课程信息

- 培训时间: 5 天
- 学员人数: 4-10 人 / 班

Applicable Robot Type

- All the ABB robot with OmniCore controller

Target group

- 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
- Calibration: revolution counter update and fine calibration
- Practice

Information

- Duration: 5 days
- Number of participants: 4-10 persons

电气原理及故障处理

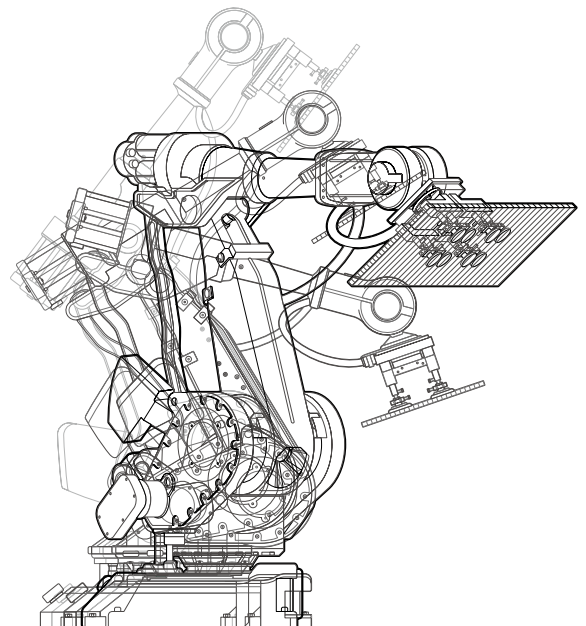
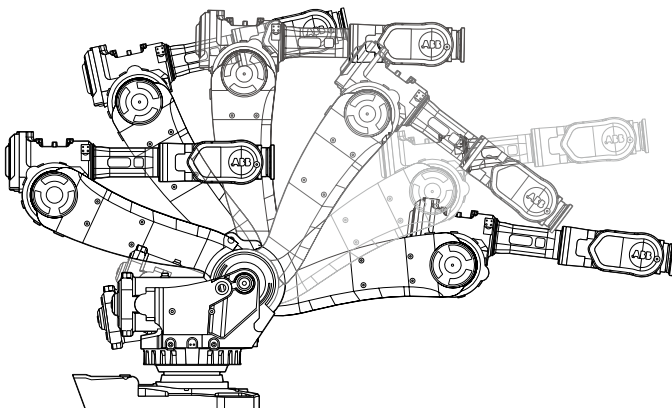
Electrical Principle and Troubleshooting

工业机器人

- CNIE101 IRC5 机器人电气原理 & 故障排除
- CNIE102 IRC5 Compact 电气原理 & 故障排除
- CNIE103 IRB 14000 电气原理
- CNIE104 IDFP 电气原理
- CNIE161 BMW L7 IRC5 电气原理及故障排除
- CNIE162 BMW G2X IRC5 电气原理及故障排除
- CNIE201 OminCore 电气原理

Industry Robot

- CNIE101 IRC5 Electrical Principle & Troubleshooting
- CNIE102 IRC5 Compact Electrical Principle & Troubleshooting
- CNIE103 IRB 14000 Electrical Principle
- CNIE104 IDFP Electrical Principle
- CNIE161 BMW L7 IRC5 Electrical Principle & Troubleshooting
- CNIE162 BMW G2X IRC5 Electrical Principle & Troubleshooting
- CNIE201 OminCore Electrical Principle



CNIE101 IRC5 电气原理 & 故障排除

CNIE101 IRC5 Electrical Principle & 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 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
- 备件替换
- 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
- 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
- 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: 4 天
- 学员人数: 4-8 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
- Be familiar with the LED status
- Be familiar with the error code
- 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
- 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
- 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

Course information

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

CNIE102 IRC5 Compact 电气原理以及故障排除

CNIE102 IRC5 Compact Electrical Principle & Troubleshooting

适用机型

- 使用 IRC5C 紧凑柜的所有机型

课程对象

- 电气维修工程师
- 项目 / 工艺工程师

知识要求

- IRC5C 操作培训

完成此课程后, 您将可以

- 了解 IRC5C 机器人系统结构
- 熟悉 IRC5C 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 IRC5C 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
- 备件替换
- 熟悉 IRC5C 机器人安全面板、主机箱中的指示灯状态含义
- 熟悉 IRC5C 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
- IRC5C 机器人系统介绍
- IRC5C 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
- IRC5C 机器人安全面板、主机箱中的指示灯状态介绍
- IRC5C 机器人故障代码介绍
- 机器人不同启动方式的原理及介绍
- IRC5C 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: 4 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- All the ABB robot with IRC5C compact controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- IRC5C Operation

After this training, you are able to

- Be familiar with the structure of IRC5C 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
- Be familiar with the LED status
- Be familiar with the error code
- 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 IRC5C robot independently

Contents

- Safety instruction
- IRC5C 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
- Introduction of LED status in the controller cabinet
- Introduction of IRC5C error code
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in IRC5C robot Case study
- Practice. Analyze and diagnose the faults set by the trainer

Course information

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

CNIE103 IRB 14000 电气原理

CNIE103 IRB 14000 Electrical Principle

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

CNIE104 IDFP 电气原理

CNIE104 IDFP Electrical Principle

适用机型

- 使用 IDFP 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 现场设备维护

知识要求

- IRC5 基础编程培训
- IRC5 电气原理培训
- IDFP 基础应用

完成此课程后，您将可以

- 了解 IDC 柜内电气构成
- 更换 IDC 柜内元器件

培训内容

- 操作安全
- IDC 控制柜电气原理介绍
- IDC 元器件更换
- Doser 电气简介
- 利用 RobView 优化参数
- 应用实践

课程信息

- 培训时间: 2 天
- 学员人数: 3-6 人 / 班

Applicable Robot Type

- ABB robot with IDFP

Target group

- Project/Process engineer
- Electrical maintenance engineer
- Site Equipment Maintenance Person

Prerequisites

- IRC5 Basic programming
- IRC5 Electrical Principle
- IDFP Basic Application

After this training, you are able to

- Understand IDC Electric Principle
- Change components in IDC

Contents

- Occupational health and safety
- IDC electric principle introduction
- Change components of IDC
- Doser electric principle introduction
- Optimize parameter using RobView
- Practice

Information

- Duration: 2 Days
- Number of participants: 3-6 Persons

CNIE161 BMW L7 IRC5 电气原理及故障排除

CNIE161 BMW L7 IRC5 Electrical Principle & Troubleshooting

适用机型

- BMW L7 项目的 IRC5 控制器

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
- 读懂 L7 项目的控制器电路图

培训内容

- 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
- L7 补充电路图讲解
- 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

- IRC5 controller for BMW L7 project

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
- Work with the supplemental customization circuit diagram

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
- Supplemental customization circuit diagram explanation
- Practice

Course information

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

CNIE162 BMW G2X IRC5 电气原理及故障排除

CNIE162 BMW G2X IRC5 Electrical Principle & Troubleshooting

适用机型

- BMW G2X 项目的 IRC5 控制器

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
- 读懂 G2X 项目的控制器电路图
- 了解 L7 与 G2X 项目标准在 IRC5 控制器中的区别

培训内容

- 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
- G2X 补充电路图讲解
- L7 与 G2X 标准的 IRC5 控制器差异
- 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

- IRC5 controller for BMW G2X project

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
- Work with the supplemental customization circuit diagram
- Difference between L7 and G2X project

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
- Supplemental customization circuit diagram explanation
- Difference between L7 and G2X project
- Practice

Course information

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

CNIE201 OminCore 电气原理

CNIE201 OminCore Electrical Principle

适用机型

- 使用 OmniCore 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

- 操作培训

完成此课程后，您将可以

- 了解 OmniCore 功能架构
- 熟悉 OmniCore 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 OmniCore 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
- 备件替换
- 熟悉机器人安全面板、主机箱中的指示灯状态含义
- 熟悉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 状态和示教器上的警告信息定位故障
- 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

培训内容

- 机器人操作安全
- OmniCore 机器人系统介绍
- OmniCore 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，信号交互系统，驱动系统，I/O 系统，冷却系统和 SMB 板
- 电路图讲解
- 机器人中各电气模块维护保养注意事项
- OmniCore 机器人故障代码介绍
- 机器人不同启动方式的原理及介绍
- OmniCore 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: 5 天
- 学员人数: 4-10 人 / 班

Applicable Robot Type

- All the ABB robot with OmniCore controller

Target Groups

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- OmniCore Operation

After this training, you are able to

- Be familiar with the structure of OmniCore 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
- Be familiar with the LED status
- Be familiar with the error code
- 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 independently

Contents

- Safety instruction
- robot system introduction
- The principle of each electrical unit, including power system, computer system, Signal Exchange Proxy, driver system, I/O system, cooling system and SMB
- Circuit diagram explanation
- Introduction of daily maintenance of each unit
- Introduction of error code
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in robot Case study
- Practice. Analyze and diagnose the faults set by the trainer

Course information

- Duration: 5 days
- Number of participants: 4-10 persons

机械维修

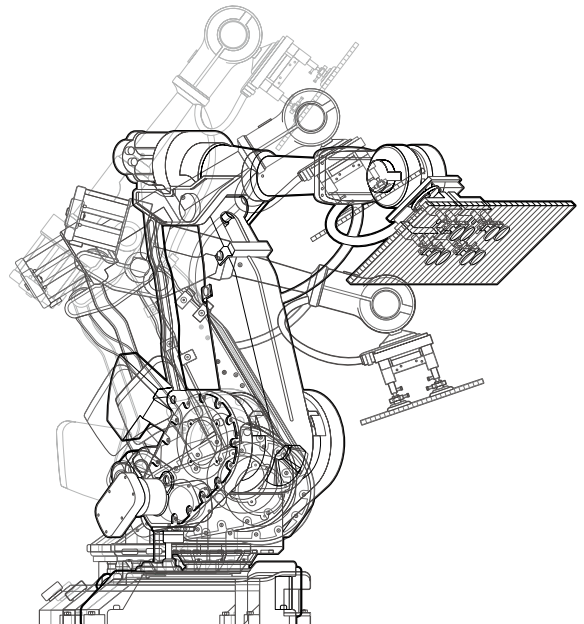
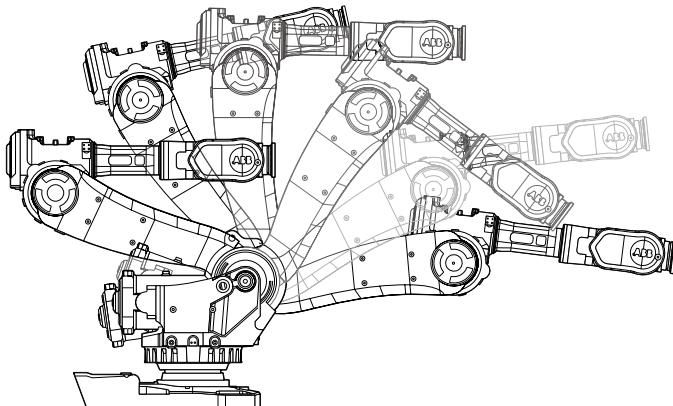
Mechanical Maintenance

工业机器人

- CNIM010 IDFP 机械维修
- CNIM110 IRB1100 机械维修
- CNIM120 IRB 120 机械维修
- CNIM121 IRB 1200 机械维修
- CNIM140 IRB 140 机械维修
- CNIM141 IRB 14000 机械维修
- CNIM142 IRB14050 机械维修
- CNIM143 IRB 1410 机械维修 (兼容 IRB 1400)
- CNIM150 IRB 1520 机械维修
- CNIM160 IRB 1600 机械维修
- CNIM240 IRB 2400 机械维修
- CNIM260 IRB 2600 机械维修 (兼容 IRB 4600)
- CNIM360 IRB 360 机械维修 (兼容 IRB 340)
- CNIM460 IRB 460 机械维修
(兼容 IRB 260/IRB 660/IRB 760)
- CNIM660 IRB 6640 机械维修 (兼容 IRB 6620)
- CNIM670 IRB 6700 机械维修
- CNIM760 IRB7600 机械维修
- CNIM870 IRB8700 机械维修
- CNIM910 IRB910 SCARA 机械维修 (兼容 IRB910 Inv)

Industry Robot

- CNIM010 IDFP Mechanical Maintenance
- CNIM110 IRB1100 Mechanical Maintenance
- CNIM120 IRB 120 Mechanical Maintenance
- CNIM121 IRB 1200 Mechanical Maintenance
- CNIM140 IRB 140 Mechanical Maintenance
- CNIM141 IRB 14000 Mechanical Maintenance
- CNIM142 IRB14050 Mechanical Maintenance
- CNIM143 IRB 1410 Mechanical Maintenance
(Compatibility IRB 1400)
- CNIM150 IRB 1520 Mechanical Maintenance
- CNIM160 IRB 1600 Mechanical Maintenance
- CNIM240 IRB 2400 Mechanical Maintenance
- CNIM260 IRB 2600 Mechanical Maintenance
(Compatibility IRB 4600)
- CNIM360 IRB 360 Mechanical Maintenance
(Compatibility IRB 340)
- CNIM460 IRB 460 Mechanical Maintenance
(Compatibility IRB 260/IRB 660/IRB 760)
- CNIM660 IRB 6640 Mechanical Maintenance
(Compatibility IRB 6620)
- CNIM670 IRB 6700 Mechanical Maintenance
- CNIM760 IRB7600 Mechanical Maintenance
- CNIM870 IRB8700 Mechanical Maintenance
- CNIM910 IRB910 SCARA Mechanical Maintenance
(Compatibility IRB910 Inv)



CNIM010 IDFP 机械维修

CNIM010 IDFP Mechanical Maintenance

适用机型

- 使用 IDFP 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 机械维修工程师
- 现场设备维护

知识要求

- IRC5 基础编程培训
- IDFP 基础应用

完成此课程后，您将可以

- 独立维护 DOSER
- 根据实际更换 DOSER 电机及减速机齿轮

培训内容

- IDFP 介绍
- DOSER 介绍
- DOSER 电机介绍及更换
- DOSER 机械介绍及齿轮拆装
- 应用实践

课程信息

- 培训时间: 2 天
- 学员人数: 3-6 人 / 班

Applicable Robot Type

- ABB robot with IDFP

Target group

- Project/Process engineer
- Mechanical maintenance engineer
- Site Equipment Maintenance Person

Prerequisites

- IRC5 Basic programming
- IDFP Basic Application

After this training, you are able to

- DOSER Maintenance
- Change DOSER motor and gear

Contents

- Introduction of IDFP function
- Introduction of DOSER
- DOSER motor change
- DOSER gear change
- Practice

Information

- Duration: 2 Days
- Number of participants: 3-6 Persons

CNIM110 IRB1100 机械维修

CNIM110 IRB1100 Mechanical Maintenance

适用机型

- IRB 1100

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

- IRB 1100

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
- 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

Information

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

CNIM120 IRB 120 机械维修

CNIM120 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 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
- Refer to the manual, replace the 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

CNIM121 IRB 1200 机械维修

CNIM121 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及实践
- 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

CNIM140 IRB 140 机械维修

CNIM140 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
- Refer to the manual, replace the 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

CNIM141 IRB 14000 机械维修

CNIM141 IRB 14000 Mechanical Maintenance

适用机型

- IRB14000

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
- 通过释放抱闸或者示教器移动机器人
- 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: 1 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: 1 days
- Number of participants: 4-8 persons

CNIM142 IRB14050 机械维修

CNIM142 IRB14050 Mechanical Maintenance

适用机型

- IRB 14050

课程对象

- 机械工程师
- 项目工程师

知识要求

- IRB 14050 操作培训

完成此课程后，您将可以

- 了解 IRB 14050 机器人系统结构
- 通过释放抱闸或者示教器移动机器人
- 参照手册，独立更换手臂
- 能够更新转数计数器
- 对 IRB 14050 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 14050 日常维护介绍

课程信息

- 培训时间: 1 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- ABB Robot: IRB 14050

Target Groups

- project engineer
- Mechanical engineer

Prerequisites

- IRB 14050 operation

After this training, you are able to

- Know the structure of IRB 14050
- Move robot by break release or TPU
- Refer to product manual, replace arm
- Update revolution counter
- Daily Maintenance

Contents

- Introduce IRB 14050 structure
- Introduce motor replace steps
- Introduce arm replacement
- Calibration introduce Practice
- IRB 14050 daily maintenance introduction

Information

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

CNIM143 IRB 1410 机械维修（兼容 IRB 1400）

CNIM143 IRB 1410 Mechanical Maintenance (Compatibility IRB 1400)

适用机型

- IRB 1410（IRB 1400）

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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间：2 天
- 学员人数：4-8 人 / 班

Applicable Robot Type

- IRB 1410（IRB 1400）

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
- Refer to the manual, replace the 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
- Replacement of linkage system
- Fine calibration
- Practice

Information

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

CNIM150 IRB 1520 机械维修

CNIM150 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 3 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
- Refer to the manual, replace the 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
- Replacement of Gearboxes
- Replacement of gearboxes Oil
- Fine calibration Practice

Information

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

CNIM160 IRB 1600 机械维修

CNIM160 IRB 1600 Mechanical Maintenance

适用机型

- IRB 1600

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

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

CNIM240 IRB 2400 机械维修

CNIM240 IRB 2400 Mechanical Maintenance

适用机型

- IRB 2400, 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 3 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- ABB IRB 2400, 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 Replacement of gearboxes Oil
- Fine calibration
- Practice

Information

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

CNIM260 IRB 2600 机械维修（兼容 IRB 4600）

CNIM260 IRB 2600 Mechanical Maintenance (Compatibility IRB 4600)

适用机型

- 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 3 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- ABB IRB 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: 3 days
- Number of participants: 4-8 persons

CNIM360 IRB 360 机械维修

CNIM360 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

CNIM460 IRB 460 机械维修

CNIM460 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 4 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
- Replacement of gearboxes Oil
- Fine calibration Practice

Information

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

CNIM660 IRB 6640 机械维修

CNIM660 IRB 6640 Mechanical Maintenance

适用机型

- 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 4 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- 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
- Replacement of gearboxes Oil and Practice

Information

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

CNIM670 IRB6700 机械维修

CNIM670 IRB6700 Mechanical Maintenance

适用机型

- IRB 6700

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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 4 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- IRB 6700

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
- Replacement of gearboxes Oil and Practice

Information

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

CNIM760 IRB7600 机械维修

CNIM760 IRB7600 Mechanical Maintenance

适用机型

- IRB 7600

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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- IRB 7600

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
- Replacement of gearboxes Oil and Practice

Information

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

CNIM870 IRB8700 机械维修

CNIM870 IRB8700 Mechanical Maintenance

适用机型

- IRB 8700

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
- 机器人平行臂更换方法讲解与实践
- 机器人精校准方法介绍与实践
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- IRB 8700

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
- Replacement of Parallel arm
- Fine calibration
- Replacement of gearboxes Oil and Practice

Information

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

CNIM910 IRB910 SCARA 机械维修（兼容 IRB910 Inv）

CNIM910 IRB910 SCARA Mechanical Maintenance (Compatibility IRB910 Inv)

适用机型

- IRB 910

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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 2 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- IRB 910

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 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

Information

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

软件

Software

工业机器人

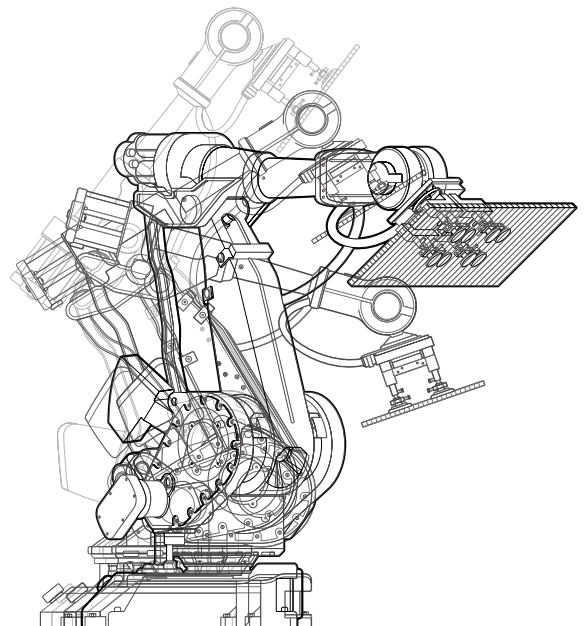
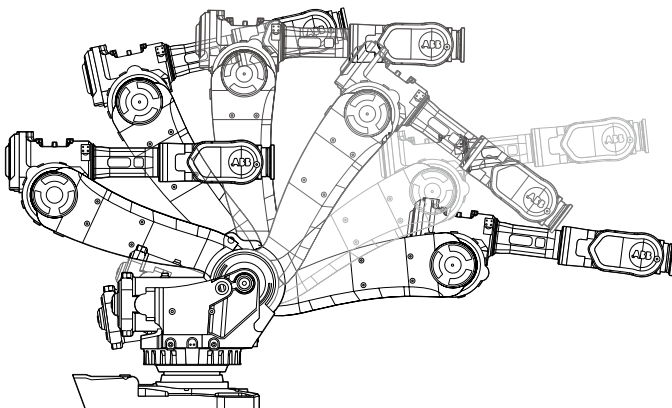
- CNIS101
- CNIS110

RobotStudio 软件
PickMaster 3 软件

Industry Robot

- CNIS101
- CNIS110

RobotStudio Software
PickMaster 3 Software



CNIS101 RobotStudio 软件

CNIS101 RobotStudio Software

适用机型

- ABB 所有机型

课程对象

- 项目 / 工艺工程师

知识要求

- 机器人基础编程培训

完成此培训后，您将可以

- 根据实际需要创建自己的工作站，及工作站内的组件
- 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
- 仿真 SafeMove 区域，定义相关参数
- 优化转弯区域。
- 导出工作站的布局
- 同时操作多台机器人

培训内容

- 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）；输送链跟踪
- 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
- 仿真 SafeMove
- 转弯区域可视化
- 工作站布局
- Job 功能

课程信息

- 培训时间：5 天
- 学员人数：6-10 人 / 班

Applicable Robot Type

- All the ABB robot

Target Groups

- Project/Process engineer

Prerequisites

- Basic programming

After this training , you are able to

- Build a station, Create and move the components
- Program offline
- Simulate the station with smart component, and make video
- Program with ABB additional option, including MultiMove, external axis ,conveyor tracking
- Analysis the movement of robot with tools in RobotStudio
- Take advantage of 3D environment to define the parameters
- Visualize zone data and automatically reduce them
- Export the station layout to a 2D drawing.
- Using jobs to operate on several robots simultaneously.

Contents

- Creating a station,Creating a system
- Creating the geometries and mechanical unit
- Creating Tool, WorkObject, Targets and Paths
- Programming offline and simulation
- Using SmartComponent to simulate the 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
- Visual SafeMove
- Zone Visualization
- Layout Tools
- Jobs

Information

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

CNIS110 PickMaster 3 软件

CNIS110 PickMaster 3 Software

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

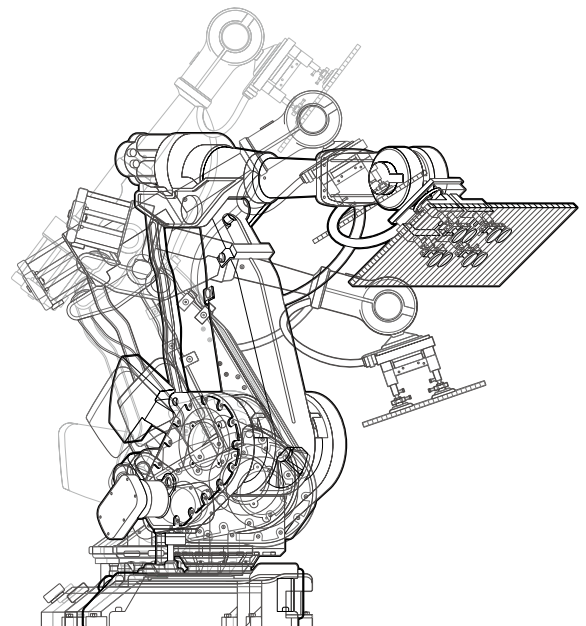
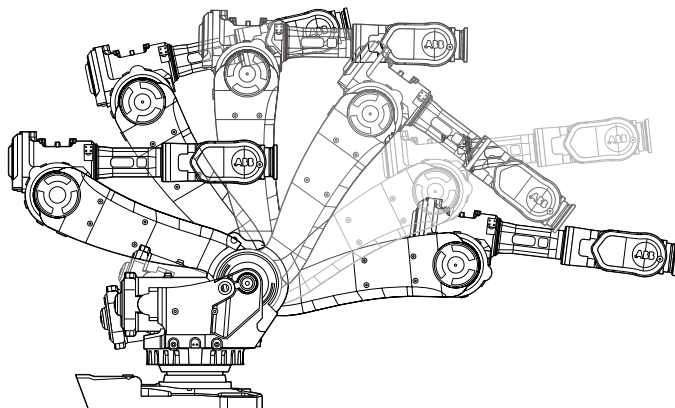
Application

工业机器人

- CNIA101 弧焊工艺应用
- CNIA102 点焊工艺应用
- CNIA103 SafeMove 1 & EPS 应用
- CNIA104 SafeMove2 应用
- CNIA105 视觉系统
- CNIA106 MultiMove 应用
- CNIA107 VWRS 应用
- CNIA108 IDFP 基础应用
- CNIA109 力控应用
- CNIA110 总线配置与视觉通讯

Industry Robot

- CNIA101 Arcwelding Application
- CNIA102 Spotwelding Application
- CNIA103 SafeMove 1 & EPS Application
- CNIA104 SafeMove2 Application
- CNIA105 Integrated Vision
- CNIA106 MultiMove Application
- CNIA107 VWRS Application
- CNIA108 IDFP Basic Application
- CNIA109 Force Control
- CNIA110 Industry Network Configuration And Vision Application



CNIA101 弧焊应用

CNIA101 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

CNIA102 点焊应用

CNIA102 Spot-welding Application

适用机型

- 使用 ABB 点焊系统的所有机器人

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

- 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
- 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
- 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

Target group

- Project/Process engineer
- Electrical maintenance engineer
- Operator

Prerequisites

- 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
- Program for spot-welding system
- 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
- Programming for basic spot-welding process
- Troubleshooting for spot-welding application
- RobotSpot system configuration

Information

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

CNIA103 SafeMove 1 & EPS 应用

CNIA103 SafeMove 1 & EPS Application

适用机型

- 使用 Safemove 1 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 1 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

CNIA104 SafeMove2 应用

CNIA104 SafeMove2 Application

适用机型

- 使用第二代 Safemove 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

- 独立更换 SafetyBoard (DSQC1015)
- 配置 Safemove2 功能
- 在 RobotStudio 中仿真 SafeMove, 定义相关参数
- 在界面上查看 Safemove2 相关信息

培训内容

- 操作安全
- 第二代 SafeMove 与第一代 SafeMove 的区别
- SafetyBoard 板卡的安装
- SafeMove Pro 功能介绍
- 生成带 SafeMove2 选项的机器人系统
- 用户系统
- Keyless 模式选择
- 配置 SafeMove2
- RobotStudio 中的仿真 SafeMove 用户界面
- 示教器中的 SafeMove 用户界面
- 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 Safemove2

Target group

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

Prerequisites

- Basic programming

After this training, you are able to

- Replace the SafetyBoard independently
- Configuration of SafeMove2
- Take advantage of 3D environment to define the safemove parameters
- View the information of SafeMove2 on the TPU interface

Contents

- Safety
- Difference between 1st and 2nd generation SafeMove
- Install the SafetyBoard
- SafeMove Pro functions overview
- Producing a system with the SafeMove2 option
- The UAS System
- Keyless mode selector
- Configuration of SafeMove2
- The Visual SafeMove user interface in RobotStudio
- The FlexPendant user interface
- Practice

Information

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

CNIA105 视觉系统

CNIA105 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

CNIA106 MultiMove 应用

CNIA106 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: 3 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: 3 days
- Number of participants: 4-8 persons

CNIA107 VWRS 应用

CNIA107 VWRS Application

适用机型

- 使用 VWRS 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 设备维护工程师

知识要求

- 基本英语阅读能力
- 已参加 VWRS 编程培训

完成此课程后，您将可以

- 了解焊枪配置过程
- 掌握 VWRS 调试标准
- 掌握点焊相关指令应用
- 掌握修磨相关指令应用
- 掌握涂胶相关指令应用
- 掌握抓手相关指令应用
- 掌握换枪盘相关指令应用

培训内容

- 焊枪配置过程与操作
- VWRS 调试标准
- 点焊相关指令与练习
- 修磨相关指令与练习
- 涂胶设置与练习
- 抓手设置与练习
- 换枪盘设置与练习

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 VWRS

Target group

- Project/Process engineer
- Maintenance engineer

Prerequisites

- Basic English skill
- Have joined VWRS Basis Programming course

After this training, you are able to

- Understand process of Servo Gun Setting
- Get to know the guideline of the Commissioning
- Be familiar with the instruction and data of WPS RZ
- Be familiar with the instruction and data of WPS KF
- Be familiar with the instruction and data of KL
- Be familiar with the instruction and data of G
- Be familiar with the instruction and data of DS

Contents

- Servo gun setup
- Guideline of Debugging in VWRS Standard
- Instruction of Spot Welding and practice
- Instruction of Tip dressing and practice
- Dispensing setup and practice
- Gripper setup and practice
- Tool Changer setup and practice

Information

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

CNIA108 IDFP 基础应用

CNIA108 IDFP Basic Application

适用机型

- 使用 IDFP 的 ABB 机器人

课程对象

- 项目 / 工艺工程师
- 电气维修工程师
- 现场设备维护

知识要求

- IRC5 基础编程培训
- IRC5 电气原理培训

完成此课程后，您将可以

- 独立安装 IDFP 功能
- 独立调试 IDFP 功能

培训内容

- 操作安全
- IDFP 功能介绍
- IDFP 安装
- 必备基本调测方法
- 用户界面的使用
- Doser 参数
- 应用实践

课程信息

- 培训时间: 3 天
- 学员人数: 3-6 人 / 班

Applicable Robot Type

- ABB robot with IDFP

Target group

- Project/Process engineer
- Electrical maintenance engineer
- Site Person

Prerequisites

- IRC5 Basic programming
- IRC5 Electrical Principle

After this training, you are able to

- Installation of the IDFP
- Configuration of the IDFP

Contents

- Occupational health and safety
- Introduction of IDFP function
- Installation of IDFP
- Basic testing method and step
- How to use IDFP GUI
- Parameters of Doser
- Practice

Information

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

CNIA109 力控应用

CNIA109 Force Control

适用机型

- ABB 机器人含 Force Control Base (option 661-2) 选项

课程对象

- 项目工程师
- 工艺工程师
- 设备工程师

知识要求

- ABB 机器人基础编程培训

完成此课程后，您将可以

- 了解 ABB 工业机器人基本安全知识
- 能独立安装力控硬件
- 能独立安装力控软件选项
- 能独立完成简单力控编程
- 能运用工具调试力控系统

培训内容

- ABB 机器人安全操作介绍
- 力控系统硬件组成介绍
- 力控应用系统参数配置
- 力控应用基本指令介绍
- 力控应用基本数据介绍
- 力控轨迹编程与调试

课程信息

- 培训时间: 3 天
- 学员人数: 4-8 人 / 班

Applicable Robot Type

- ABB robot Which have Force Control Base (option 661-2)

Target Groups

- Project engineer
- Process engineer
- Robot maintenance engineer

Prerequisites

- ABB robot basic programming training

After this training, you are able to

- know basic safety knowledge of ABB industry robot
- assemble the Force control parts independently
- install the Force control software option independently
- be able to do programming in Force control system
- use tools to debug the Force control system

Contents

- Safety instruction
- Structure of Force Control system
- Basic configuration of Force Control system
- Basic commands of Force Control system
- Basic data of Force Control system
- Programming and debugging in Force Control system

Information

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

CNIA110 总线配置与视觉通讯

CNIA110 Industry Network Configuration And Vision Application

适用机型

- 具有相关通讯选项的 IRC5 控制系统机器人

课程对象

- 机器人工程师

知识要求

- 机器人基础编程培训或具有 ABB 机器人相关知识
- 了解常用现场总线，了解机器人视觉应用原理

完成此课程后，您将可以

- 配置 ABB 机器人基于 PROFINET 的总线通讯
- 配置 ABB 机器人基于 Ethernet/IP 的总线通讯
- 配置 ABB 机器人基于 DeviceNet 的总线通讯
- 配置 ABB 机器人基于 CC-LINK 的总线通讯
- ABB 机器人与外部设备 socket 通讯程序编写
- ABB 集成视觉应用
- ABB 机器人与智能相机视觉应用

培训内容

- 基于 PROFINET 总线的机器人配置
 - 机器人作为 Controller，添加 Device
 - 机器人作为 Device 与 PLC 通讯
- 基于 Ethernet/IP 总线的机器人配置
 - 机器人作为 Scanner，添加 Adapter
 - 机器人作为 Adapter 与 Scanner 通讯
- 基于 DeviceNet 总线的机器人配置
 - 机器人作为从站 Slave 与 PLC 通讯
 - 两台机器人 DeviceNet 通讯
- 基于 CC-LINK 总线的机器人配置
- Socket 通讯与编程
- ABB 集成视觉应用
 - 坐标系校准与视觉设置
 - 机器人程序
- ABB 机器人与智能相机视觉应用
 - 智能相机软件介绍与使用
 - 机器人与智能相机的 socket 通讯与处理
 - 基于智能相机的视觉引导与抓取

课程信息

- 培训时间: 4 天

Applicable Robot Type

- ABB robots with communication options

Target Groups

- Robot Engineers

Prerequisites

- Basic programming and knowledge of industry network and vision application

Completed this course, you may able to:

- Configure ABB robot in PROFINET network
- Configure ABB robot in Ethernet/IP network
- Configure ABB robot in DeviceNet network
- Configure ABB robot in CC-LINK network
- Socket communication program with ABB robot
- Use ABB robot integrated vision application
- Use Intelligent camera with ABB robot

Contents

- PROFINET configuration
 - Robot as Controller and Robot as Device
 - Communication between 2 ABB robots
- Ethernet/IP configuration
 - Robot as Scanner and robot as adapter
- DeviceNet configuration
 - Robot as Slave on the network
 - Communication between 2 ABB robots
- CC-LINK configuration
- Socket communication and programming
- ABB Integrated vision
 - Coordinate Calibration
 - Vision settings and robot programming
- ABB robot with Industrial Intelligent Camera
 - Intelligent vision software introduction and application
 - Socket communication between robot and Intelligent camera
 - Robot programming with vision guide

Information

- Duration: 4 days

喷涂机器人

Painting Robot

- CNPO001 S4P + 操作
- CNPO101 IRC5P 操作
- CNPO102 IRC5P 现场安装
- CNPP001 S4P + 编程
- CNPP101 IRC5P 编程
- CNPE001 S4P + 电气原理 & 故障排除
- CNPE101 IRC5P 电气原理 & 故障排除
- CNPM101 RB926 雾化器
- CNPM102 RB951 雾化器
- CNPM110 RB1000 雾化器
- CNPM540 IRB 5400 机械维修
- CNPM541 IRB 540 机械维修
- CNPM550 IRB 5500 机械维修
- CNPM580 IRB 580 机械维修
- CNPS101 RobotStudio 软件（喷涂）
- CNPS110 IPS (RW5) 软件
- CNPS111 IPS (RW6) 软件
- CNPS120 RobView 5 软件
- CNPA101 涂装工艺（换色、清洗）

- CNPO001 S4P + Operation
- CNPO101 IRC5P Operation
- CNPO102 Installation Instruction of Painting Robot
- CNPP001 S4P + Programming
- CNPP101 IRC5P Programming
- CNPE001 S4P + Electrical Principle & Troubleshooting
- CNPE101 IRC5P Electrical Principle & Troubleshooting
- CNPM101 RB926 Atomizer
- CNPM102 RB951 Atomizer
- CNPM110 RB1000 Atomizer
- CNPM540 IRB 5400 Mechanical Maintenance
- CNPM541 IRB 540 Mechanical Maintenance
- CNPM550 IRB 5500 Mechanical Maintenance
- CNPM580 IRB 580 Mechanical Maintenance
- CNPS101 RobotStudio software (Painting)
- CNPS110 IPS (RW5) Software
- CNPS111 IPS (RW6) Software
- CNPS120 RobView 5 Software
- CNPA101 Painting process (ColorChange and Cleaning)

机器人操作

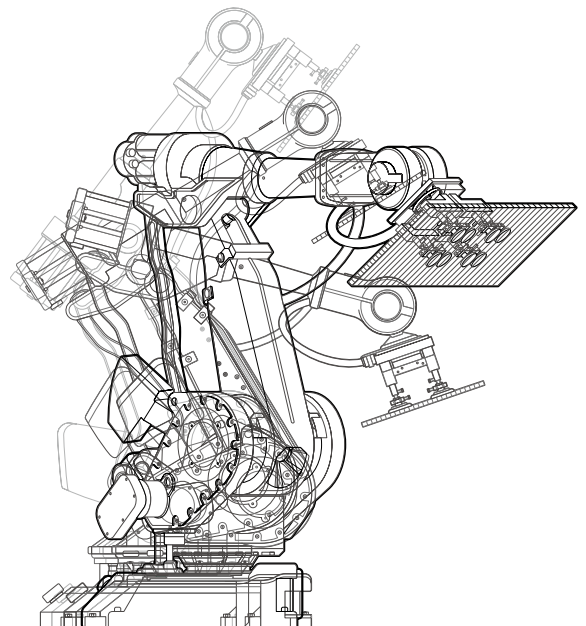
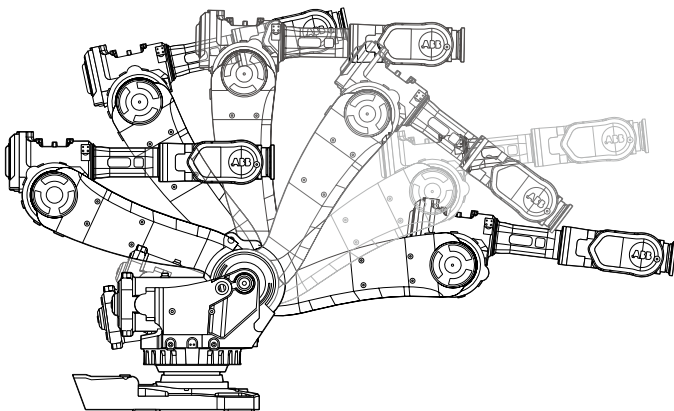
Operation

喷涂机器人

- CNPO001
 - CNPO101
 - CNPO102
- S4P+ 操作
IRC5P 操作
IRC5P 现场安装

Painting Robot

- CNPO001
 - CNPO101
 - CNPO102
- S4P + Operation
IRC5P Operation
Installation Instruction of Painting Robot



CNPO001 S4P + 操作

CNPO001 S4P + Operation

适用机型

- 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: 4-10 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
- Master the ABB spraying robot teaching operations
- Operation with PTPU
- 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 and Structure of RAPID program
- Description of data type
- Writing program with basic instructions
- Saving and loading programs
- System backup and Practice

Information

- Duration: 3 days
- Number of participants: 4-10 person

CNPO101 IRC5P 操作

CNPO101 IRC5P Operation

适用机型

- 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: 4-10 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
- Master the ABB spraying robot teaching operations
- 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 and Description of data type
- Writing program with basic instructions
- Saving and loading programs
- System backup and Practice

Information

- Duration: 3 days
- Number of participants: 4-10 persons

CNPO102 IRC5P 现场安装

CNPO102 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

编程

Programming

喷涂机器人

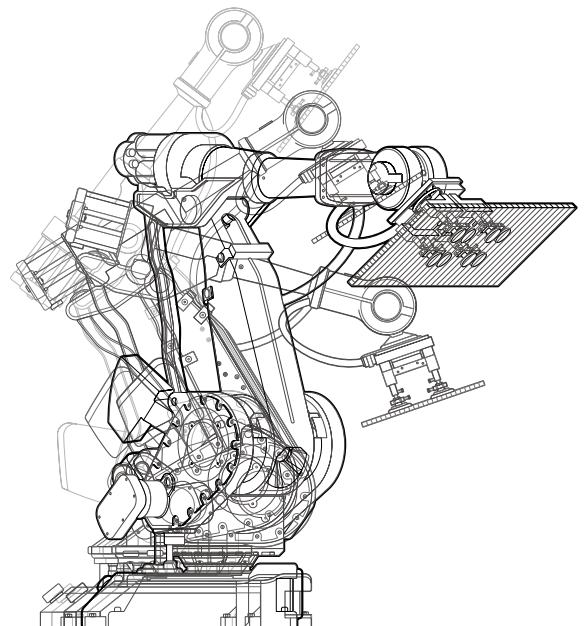
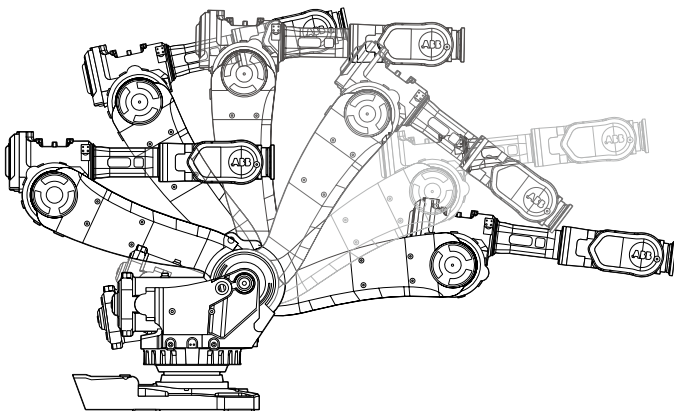
- CNPP001
- CNPP101

S4P + 编程
IRC5P 编程

Painting Robot

- CNPP001
- CNPP101

S4P + Programming
IRC5P Programming



CNPP001 S4P + 编程

CNPP001 S4P + Programming

适用机型

- 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: 4-10 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 and Configure the INDEX

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
- Index configuration
- Error code and status report
- Practice

Information

- Duration: 5 Days
- Number of participants: 4-10 Persons

CNPP101 IRC5P 编程

CNPP101 IRC5P Programming

适用机型

- 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: 4-10 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 and 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: 4-10 Persons

电气原理及故障处理

Electrical Principle and Troubleshooting

喷涂机器人

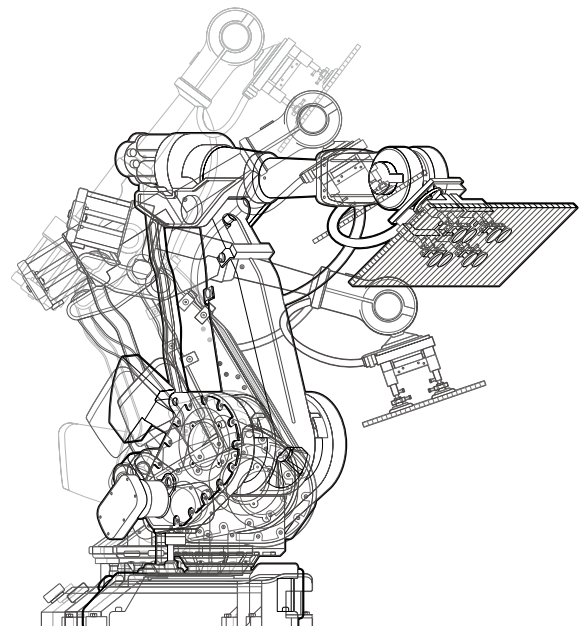
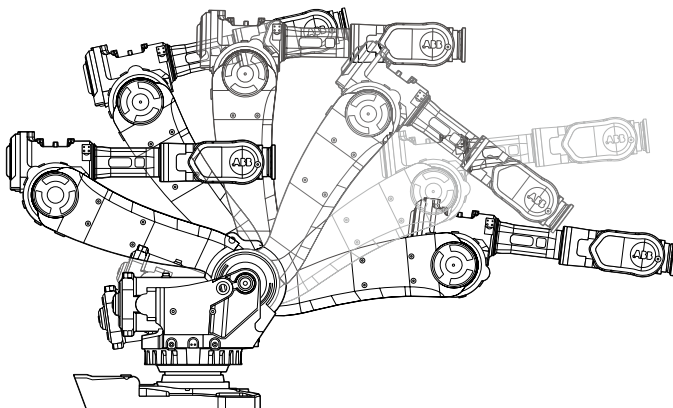
- CNPE001
- CNPE101

S4P + 电气原理 & 故障排除
IRC5P 电气原理 & 故障排除

Painting Robot

- CNPE001
- CNPE101

S4P + Electrical Principle
& Troubleshooting
IRC5P Electrical Principle
& Troubleshooting



CNPE001 S4P + 电气原理 & 故障排除

CNPE001 S4P + Electrical Principle & Troubleshooting

适用机型

- 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
- 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
- S4P + 机器人系统
- S4P + 机器人控制柜中各单元介绍
- S4P + 机器人本体中各单元介绍
- 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
- S4P + 机器人控制柜及本体内各单元状态指示灯状态介绍
- S4P + 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
- 案例分析和故障排除实践。

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

- Electrical maintenance engineer
- Project/Process engineer

Prerequisites

- S4P + Operation

After this training , you are able to

- Understand the electrical structure of S4P+system
- Be familiar with the function of the electrical units in S4P+cabinet
- Be familiar with the function of the electrical units in manipulator
- Work with circuit diagrams and Implement the basic daily maintenance independently
- Replace the failure part independently
- 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
- To grasp the usage of different startup mode
- Troubleshoot the S4P+robot independently

Contents

- Safety instruction
- Structure and function of painting robot system
- The working function of the electrical units in S4P+cabinet
- The working function of the electrical units in manipulator
- Circuit diagram explanation and Introduction of daily maintenance of each unit
- Replacement of the failure part
- Description of indicators on the basic electrical unit in S4P + cabinet and manipulator
- Diagnosis with the error code in S4P +
- Introduction the usage of restart mode in troubleshooting
- Common faults of each electrical unit in IRC5 robot
- Case study & Practice

Information

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

CNPE101 IRC5P 电气原理 & 故障排除

CNPE101 IRC5P Electrical Principle & Troubleshooting

适用机型

- 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
- 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
- IRC5P 机器人系统
- IRC5P 机器人控制柜中各单元介绍。
- IRC5P 机器人本体中各单元介绍。
- 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
- 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
- 案例分析和故障排除实践。

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

- 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 and Implement the basic daily maintenance independently
- Replace the failure part independently
- 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
- To grasp the usage of different startup mode
- Troubleshoot the IRC5P robot independently

Contents

- Safety instruction
- Structure and function of painting robot system
- The working function of the electrical units in IRC5P cabinet
- The working function of the electrical units in manipulator
- Circuit diagram explanation and Introduction of daily maintenance of each unit
- Replacement of the failure part
- 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

Information

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

机械维修

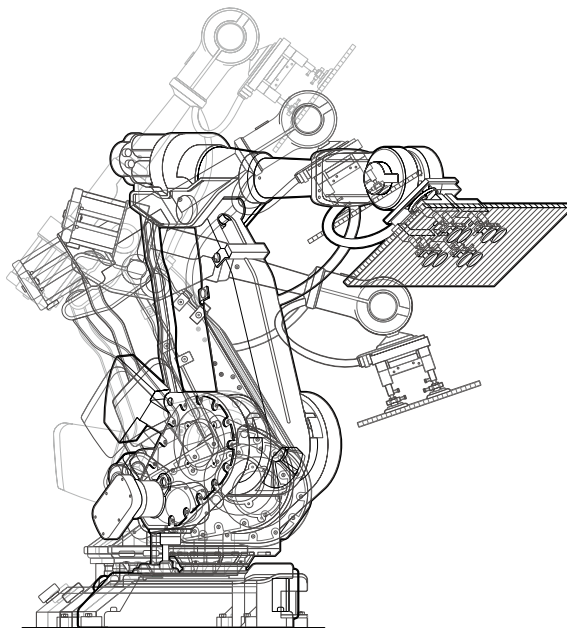
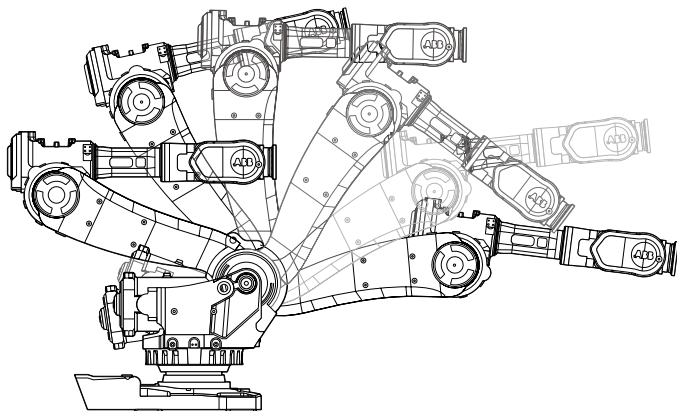
Mechanical Maintenance

喷涂机器人

- CNPM101 RB926 雾化器
- CNPM102 RB951 雾化器
- CNPM110 RB1000 雾化器
- CNPM540 IRB 5400 机械维修
- CNPM541 IRB 540 机械维修
- CNPM550 IRB 5500 机械维修
- CNPM580 IRB 580 机械维修

Painting Robot

- CNPM101 RB926 Atomizer
- CNPM102 RB951 Atomizer
- CNPM110 RB1000 Atomizer
- CNPM540 IRB 5400 Mechanical Maintenance
- CNPM541 IRB 540 Mechanical Maintenance
- CNPM550 IRB 5500 Mechanical Maintenance
- CNPM580 IRB 580 Mechanical Maintenance



CNPM101 RB926 雾化器

CNPM101 RB926 Atomizer

适用机型

- 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
- 掌握雾化器参数调整方法

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: 2 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
- Understand how to Modify the parameters

Contents

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

Information

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

CNPM102 RB951 雾化器

CNPM102 RB951 Atomizer

适用机型

- 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
- 掌握雾化器参数调整方法

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: 2 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
- Understand how to Modify the parameters

Contents

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

Information

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

CNPM110 RB1000 雾化器

CNPM110 RB1000 Atomizer

适用机型

- 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
- 掌握雾化器参数调整方法

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: 2 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
- Understand how to Modify the parameters

Contents

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

Information

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

CNPM540 IRB 5400 机械维修

CNPM540 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 IRB5400 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 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
- Replacement of gearboxes Oil and Fine calibration
- Practice

Information

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

CNPM541 IRB 540 机械维修

CNPM541 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 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
- Replacement of gearboxes Oil
- Fine calibration
- Practice

Information

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

CNPM550 IRB 5500 机械维修

CNPM550 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 IRB5500 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 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
- Replacement of gearboxes Oil and Fine calibration
- Practice

Information

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

CNPM580 IRB 580 机械维修

CNPM580 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
- 机器人各轴齿轮箱润滑油的更换步骤及实践

课程信息

- 培训时间: 5 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
- Replacement of gearboxes Oil and Fine calibration
- Practice

Information

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

软件

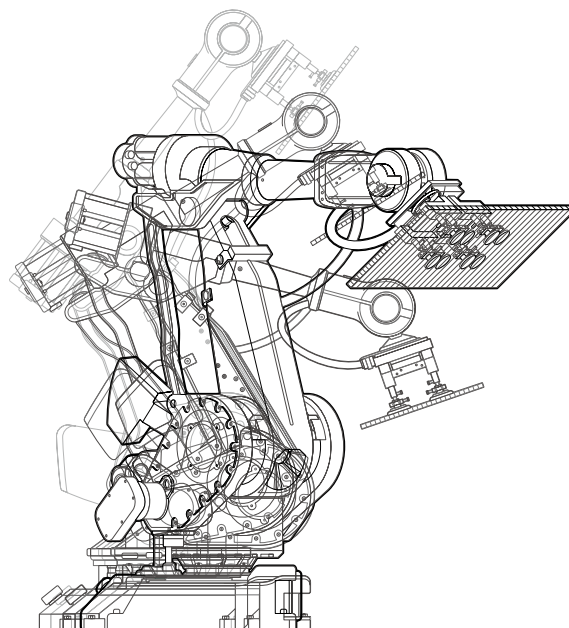
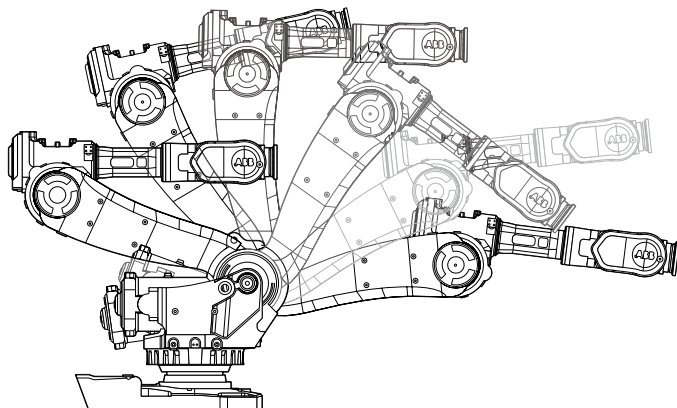
Software

喷涂机器人

- CNPS101 RobotStudio 软件 (喷涂)
- CNPS110 IPS (RW5) 软件
- CNPS111 IPS (RW6) 软件
- CNPS120 RobView 5 软件

Painting Robot

- CNPS101 RobotStudio software (Painting)
- CNPS110 IPS (RW5) Software
- CNPS111 IPS (RW6) Software
- CNPS120 RobView 5 Software



CNPS101 RobotStudio 软件（喷涂）

CNPS101 RobotStudio software (Painting)

适用机型

- 所有 ABB 喷涂机器人

课程对象

- 项目 / 工艺工程师

知识要求

- IRC5P 基础编程培训

完成此课程后，您将可以

- 使用 Robotstudio 进行产品布局
- 根据实际需要创建工作站
- 创建和布置工作站的组件（例如工具，坐标系，几何体）
- 使用 RobtStudio 进行离线编程并仿真
- 创建外轴
- 制作机器人工作视频
- 创建多台机器人工作站

培训内容

- 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
- 创建外轴
- 利用创建的组件和数据进行离线编程和仿真
- ABB 机器人的可选项使用，包括外轴，输送链跟踪
- 学习制作自定义视频录像

课程信息

- 培训时间: 5 天
- 学员人数: 6-10 人 / 班

Applicable Robot Type

- All the ABB Painting robot

Target group

- Project/Process engineer

Prerequisites

- IRC5P Basic programming

After this training, you are able to

- Layout product in RobotStudio
- Build a station according to requirement
- Create the components in the station(such as Tools, Coordinates, Geometries)
- Program offline
- Creating external axis
- Make a video of the running station
- Build station with more than one robot

Contents

- Creating a station
- Creating a system
- Creating the geometries and mechanical unit
- Creating Tool, WorkObject, Targets and Paths
- Creating external axis
- Programming offline and simulation
- Program with ABB additional option, such as external axis, conveyor tracking
- Making a video

Information

- Duration: 5 Days
- Number of participants: 6-10 Persons

CNPS110 IPS (RW5) 软件

CNPS110 IPS (RW5) Software

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 and 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

CNPS111 IPS (RW6) 软件

CNPS111 IPS (RW6) Software

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
- 设备维护工程师

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

- 了解 IPS RW6.0 系统架构
- 掌握 IPS 的备份与还原
- 熟悉 IPS 配置
- 掌握 IPS 版本更新方法
- 了解 IPS 系统诊断与调试方法
- 了解参数校准

培训内容

- IPS RW6.0 系统架构介绍
- IPS 备份与还原
- IPS 常用参数介绍及配置
- IPS 升降级方法介绍
- IPS 报警信息查询
- IPS RW6.0 与之前版本的差别
- 参数校准方法

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 group

- Project/Process engineer
- Maintenance engineer

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 and Debug the IPS
- Adjust the common signal in IPS

Contents

- IPS RW6.0 structure
- IPS backup and restore
- Common configuration of IPS
- IPS upgrade and downgrade
- IPS error code
- New function in IPS RW6.0
- Calibration of Fluid, Atom, Shape

Information

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

CNPS120 RobView 5 软件

CNPS120 RobView 5 Software

适用机型

- 所有 ABB 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: 2 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: 2 Days
- Number of participants: 4-8 Persons

应用

Application

喷涂机器人

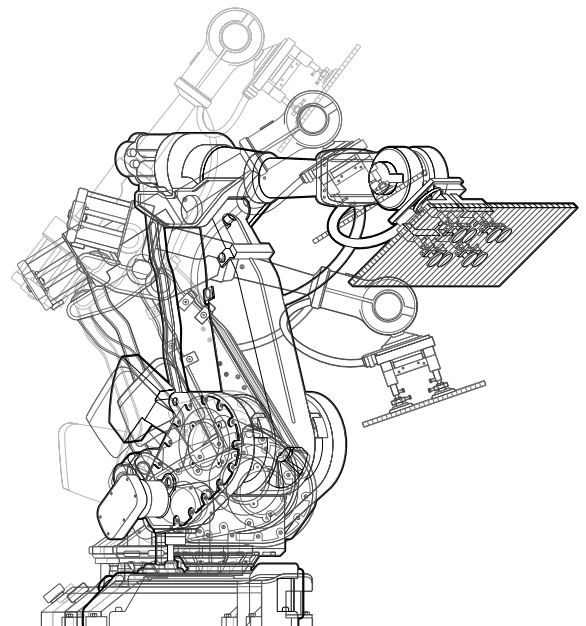
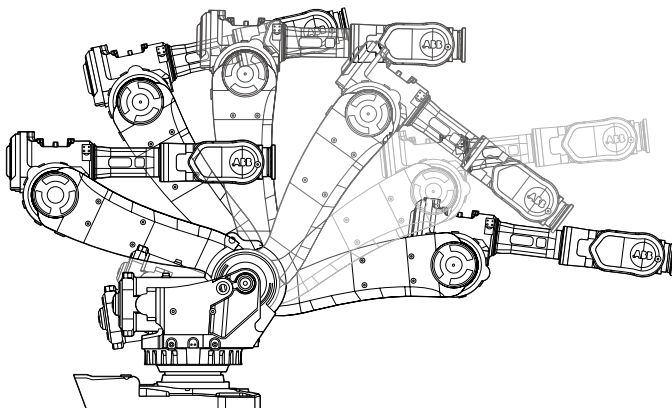
• CNPA101

涂装工艺（换色、清洗）

Painting Robot

• CNPA101

Painting process
(ColorChange and Cleaning)



CNPA101 涂装工艺(换色、清洗)

CNPA101 Painting process (ColorChange and Cleaning)

适用机型

- 所有 ABB 喷涂机器人

课程对象

- 工艺工程师
- 维修工程师
- 操作工

知识要求

- 喷涂工艺基本知识

完成此课程后, 您将可以

- 掌握换色阀的构造细节及工作原理
- 掌握换色阀使用的注意要点
- 理解换色程序
- 理解清洗程序
- 换色操作
- 清洗操作

培训内容

- 换色阀的构造细节及工作原理
- 换色阀使用的注意要点
- 换色程序及过程
- 清洗程序及过程
- 换色操作
- 清洗操作

课程信息

- 培训时间: 2 天
- 学员人数: 4-10 人 / 班

Applicable Robot Type

- All the ABB Painting robot

Target group

- Process engineer
- Maintenance engineer
- Operator

Prerequisites

- Basic knowledge about painting process

After this training, you are able to

- Understand the structure of ColorChanger
- Understand the attentions of ColorChanger
- Understand the ColorChange program
- Understand the cleaning program
- ColorChange operation
- Cleaning operation

Contents

- The structure of ColorChanger
- The attention of ColorChanger
- The ColorChange program and process
- The cleaning program and process
- ColorChange operation
- Cleaning operation

Information

- Duration: 2 Days
- Number of participants: 4-10 Persons

ABB 校企合作

ABB University-Enterprise Cooperation

机器人技术及应用

- CNES101 高校学生初级培训课程
- CNES102 高校学生中级培训课程
- CNET101 高校讲师初级培训课程
- CNET102 高校讲师中级培训课程
- CNEP101 机器人通用技能社教联合班培训课程
- CNEP102 机器人高阶技能社教联合班培训课程

Robotics Technology and Application

- CNES101 College student' Basic Skill Course
- CNES102 College student'Intermediate Skill Course
- CNET101 College Instructor'Basic Skill Course
- CNET102 College Instructor'Intermediate Skill Course
- CNEP101 ABB Robotics General Skill Course
- CNEP102 ABB Robotics Higher Skill Course

CNES101 高校学生初级培训课程

CNES101 College student' Basic Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

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
- 了解机器人工作中涉及到的各种坐标
- 能够在手动模式下使用示教器操作机器人
- 了解 RAPID 语言结构，并能调试简单例程
- 能够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
- 了解机器人控制柜及本体的安装
- 了解 IRC5 机器人各电气单元
- 了解机器人本体结构

培训内容

- 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
- 基本指令
- 程序保存
- 系统备份
- 操作实践

课程信息

- 培训时间：4 天
- 学员人数：每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Understand ABB industrial robots structure and principle
- Familiar with ABB robots operation and safety
- Understand coordinate systems
- Operate robot with TPU in manual mode
- Understand RAPID structure, debug the simple program
- Be able to modify target position
- Be able to Load program and debug Rapid in auto mode
- Be able to save program
- Backup controller system
- Understand installation of controller and manipulator
- Understand function of each electronic module
- Understand structure of manipulator

Contents

- Safety instruction
- ABB industry robot introduction
- Operating the robot in manual mode
- Robot coordinate systems
- RAPID structure
- Common instructions
- Program save as
- System backup
- Hands-on job

Information

- Duration: 4 days
- Number of participants: 8-10 persons per robot

CNES102 高校学生中级培训课程

CNES102 College student' Intermediate Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

完成此课程后，您将可以

- 定义、修改机器人 I/O 信号
- 使用 RAPID 手册帮助编程
- 了解安全区域设置 ,WorldZone
- 掌握常用的中断处理指令
- 掌握常用的错误处理指令
- 了解 IRC5 机器人电气原理
- 了解机器人本体机械保养知识
- RobotStudio 简单应用
- 了解某类应用的常规用法（例如搬运、集成视觉 ……）

培训内容

- RAPID 程序结构
- TRAP 类型的例行程序
- 中断处理
- 错误处理
- WorldZone 功能介绍
- IRC5 电气原理简介
- 机器人本体机械保养
- RobotStudio 简介
- 相关应用案例分析
- 操作实践

课程信息

- 培训时间：5 天
- 学员人数：每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Be able to define or modify IO signals
- Be able to complete program with help of Rapid manual
- Understand safety working area by WorldZone setting
- Dealing with Interrupt routine
- Dealing with error handler routine
- Understand robotics electronic principle
- Understand manipulator maintenance
- Play with RobotStudio
- Understand the usual method of an application (Material Handling, Integrated Vision)

Contents

- RAPID program structure
- Routine type
- Interrupt routine
- Error handler
- WorldZone function
- Electrical principle
- Manipulator maintenance
- RobotStudio introduction
- Case study
- Hands-on Job

Information

- Duration: 5 days
- Number of participants: 8-10 persons per robot

CNET101 高校讲师初级培训课程

CNET101 College Instructor' Basic Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

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
- 了解机器人工作中涉及到的各种坐标
- 能够在手动模式下使用示教器操作机器人
- 能够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
- 了解机器人控制柜及本体的安装
- 了解 IRC5 机器人各电气单元
- 了解机器人本体结构
- 了解常见 IO 通讯方式
- 机器人安装系统

培训内容

- 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
- 基本指令
- 程序保存
- 系统备份
- 操作实践
- IO 通讯介绍
- 安装机器人系统

课程信息

- 培训时间: 5 天
- 学员人数: 每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Understand ABB industrial robots structure and principle
- Familiar with ABB robots operation and safety
- Understand coordinate systems
- Operate robot with TPU in manual mode
- Be able to modify target position
- Be able to Load program and debug Rapid in auto mode
- Be able to save program
- Backup controller system
- Understand installation of controller and manipulator
- Understand function of each electronic module
- Understand structure of manipulator
- Understand common IO communication
- Install controller system on-line

Contents

- Safety instruction
- ABB industry robot introduction
- Operating the robot in manual mode
- Robot coordinate systems
- RAPID structure
- Common instructions
- Program save as
- System backup
- Hands-on job
- IO Communication introduction
- install robot system on-line

Information

- Duration: 5 days
- Number of participants: 8-10 persons per robot

CNET102 高校讲师中级培训课程

CNET102 College Instructor' Intermediate Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

完成此课程后，您将可以

- 定义、修改机器人 I/O 信号
- 使用 RAPID 手册帮助编程
- 了解安全区域设置 ,WorldZone
- 中断处理指令
- 错误处理指令
- 了解 IRC5 机器人电气原理
- 了解机器人本体机械保养知识
- RobotStudio 简介
- 了解数据属性介绍
- 编辑带参数的例行程序
- 了解常用系统参数
- 掌握某类应用的常规用法（例如搬运、集成视觉）

培训内容

- RAPID 程序结构
- TRAP 类型的例行程序
- 中断处理
- 错误处理
- WorldZone 功能介绍
- IRC5 电气原理简介
- 机器人本体机械保养
- RobotStudio 简介
- 相关案例分析
- 操作实践
- 数据属性介绍
- 带参数的例行程序
- 系统参数介绍
- 应用案例

课程信息

- 培训时间: 5 天
- 学员人数: 每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Be able to define or modify IO signals
- Be able to complete program with help of Rapid manual
- Understand safety working area by WorldZone setting
- Dealing with Interrupt routine
- Dealing with error handler routine
- Understand robotics electronic principle
- Understand manipulator maintenance
- Play with RobotStudio
- Understand data type
- Edit routine with parameter
- Understand system parameter
- Understand the usual method of an application (Material Handling, Integrated Vision)

Contents

- RAPID program structure
- Routine type
- Interrupt routine
- Error handler
- WorldZone function
- RobotStudio introduction
- Case study
- Hands-on Job
- Data type introduction
- Routine with parameter
- System parameter introduction
- Case study

Information

- Duration: 5 days
- Number of participants: 8-10 persons per robot

CNEP101 机器人通用技能社教联合班培训课程

CNEP101 ABB Robotics General Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

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
- 了解机器人工作中涉及到的各种坐标
- 能够在手动模式下使用示教器操作机器人
- 能够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

- 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
- 基本指令
- 程序保存
- 系统备份
- 机器人零位更新方法介绍
- 操作实践

课程信息

- 培训时间: 3 天
- 学员人数: 每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Understand ABB industrial robots structure and principle
- Familiar with ABB robots operation and safety
- Understand coordinate systems
- Operate robot with TPU in manual mode
- Be able to modify target position
- Be able to Load program and debug Rapid in auto mode
- Be able to save program
- Backup controller system
- Update revolution counter

Contents

- Safety instruction
- ABB industry robot introduction
- Operating the robot in manual mode
- Robot coordinate systems
- RAPID structure
- Common instructions
- Program save as
- System backup
- Introduction of robot calibration
- Hands-on job

Information

- Duration: 3 days
- Number of participants: 8-10 persons per robot

CNEP102 机器人高阶技能社教联合班培训课程

CNEP102 ABB Robotics Higher Skill Course

适用机型

- 使用 IRC5 控制系统的所有机器人

完成此课程后，您将可以

- 了解机器人 I/O 信号
- 使用 RAPID 手册帮助编程
- 了解安全区域设置 ,WorldZone
- 了解中断处理指令
- 了解错误处理指令
- 了解 IRC5 机器人电气原理
- 了解机器人本体机械保养知识
- RobotStudio 简单应用
- 了解某类应用的常规用法（例如搬运、集成视觉）

培训内容

- RAPID 程序结构
- TRAP 类型的例行程序
- 中断处理
- 错误处理
- WorldZone 功能介绍
- IRC5 电气原理简介
- 机器人本体机械保养
- RobotStudio 简介
- 相关应用案例分析
- 操作实践

课程信息

- 培训时间: 5 天
- 学员人数: 每台机器人 8-10 人

Applicable Robot Type

- All the ABB robots with IRC5 controller

Completed this course, you may able to

- Understand IO signals
- Be able to complete program with help of Rapid manual
- Understand safety working area by WorldZone setting
- Understand Interrupt routine
- Understand error handler routine
- Understand robotics electronic principle
- Understand manipulator maintenance
- Play with RobotStudio
- Understand the usual method of an application (Material Handling, Integrated Vision)

Contents

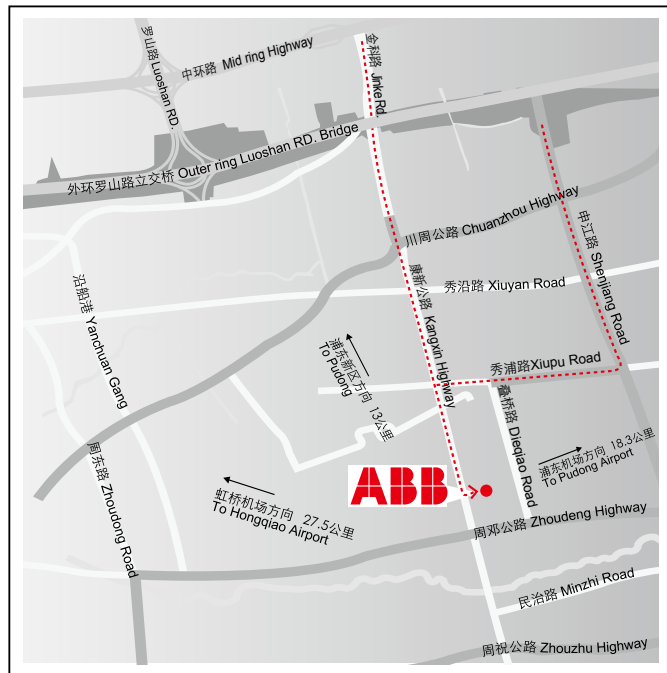
- RAPID program structure
- Routine type
- Interrupt routine
- Error handler
- WorldZone function
- Electrical principle
- Manipulator maintenance
- RobotStudio introduction
- Case study
- Hands-on Job

Information

- Duration: 5 days
- Number of participants: 8-10 persons per robot

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（地铁11号康新公路2号口）。

- 培训中心距离虹桥国际机场和虹桥火车站约35公里左右。
- 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。
- 培训中心距离浦东机场约28公里。

ABB Robotics Shanghai Training Center is located in ABB Engineering (Shanghai) Ltd. The detailed address is No.4528, Kangxin Highway, Pudong New District, Shanghai Metro line 11 (Kang Xin highway) No. 2 door.

- The distance between ABB Robotics Shanghai Training Center and Hongqiao international airport or Hongqiao railway station is about 35KM.
- The distance between ABB Robotics Shanghai Training Center and Shanghai railway station or Shanghai long-distance bus station is about 30KM.
- The distance between ABB Robotics Shanghai Training Center and PuDong airpost is about 28KM.

住宿

Accommodation

距离 ABB 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）

Several recommended hotels near ABB Robotics Shanghai Training Center below

- **上海如家快捷酒店（周浦店）**

价格：ABB 协议价 RMB180

地址：上海市浦东新区秀浦路 886，近年家浜路万达广场
（距离 ABB 约 2 公里）

电话：021-6176 0058-9

- **Home Inns, Shanghai Zhoupu**

Price : ABB contract price is RMB180

Address : No. 886, XiuPu Road, Near Nian Jia bang road
in Wanda plaza,Pudong, Shanghai.
(2km away from ABB)

Tel : 021-6176 0058-9

- **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 ABB 约 2 公里）

电话：021-3801 0101

- **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 : 021-3801 0101

- **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 ABB 约 3 公里）

电话：021-6807 0000

- **Kai Lai Hotel Shanghai Kangqiao**

Price : ABB contract price is RMB300

Address : No. 2689, road Chuanzhou, Pudong,
Shanghai. (3km away from ABB)

Tel : 021-6807 0000

- **上海浦东绿地假日酒店（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 ABB 2 公里）

电话：021-3829 1888

- **Holiday Inn Shanghai Pudong Kangqiao**

Price : ABB contract price is RMB500

Address : No. 1088, Xiuyan Road, Pudong, Shanghai.
(2km away from ABB)

Tel : 021-3829 1888

- **上海康桥万豪酒店**

价格：ABB 单人协议价 800RMB，双人间 900RMB

地址：上海浦东新区康新公路 4499 号
（距离 ABB 只需步行 10 分钟）

电话：021-6898 7691

- **Shanghai Marriott Hotel Kangqiao**

Price : ABB Contract Price is 800 RMB

Address : 4499 kangxin road, pudong new area,
Shanghai(only walk ten minutes from ABB)

Tel : 021-6898 7691



ABB机器人客户服务热线: 400 920 9090

ABB Robot Customer Service Hot Line: 400 920 9090

ABB机器人客户服务邮箱: cs.robot@cn.abb.com

ABB Robot Customer Service e-mail: cs.robot@cn.abb.com

ABB机器人中文网站: <https://new.abb.com/cn>

ABB Robot Webpage: <https://new.abb.com/cn>

ABB 机器人培训中心公共邮箱: cn-cs.training@abb.com

ABB Robotics Training Center Public Email: cn-cs.training@abb.com



课程 / 技能等级
证书查询平台



ABB中国大学介绍



备注

Note

