

MIRKA

Mirka[®] ROBOTIC SOLUTIONS





MIRKA'S ROLE IN AUTOMATION

– Your one-stop shop for automation solutions

Mirka has over 80 years of practical expertise in the surface finishing industry and provides specialized tools and abrasives, designed for industrial applications. As a leading automation solutions provider, Mirka collaborates closely with system integrators and end users to deliver comprehensive automation solutions.

Working alongside system integrators, we not only provide turnkey solutions but also optimize customer processes to maximize the efficiency of robotic sanding, polishing, and grinding applications. At Mirka, we offer a one-stop shop for all your needs, providing a wide range of tools, consumables, accessories, and expert application support.

Mirka's robotic tools are very versatile. You can use them with most types of industrial robots and cobots and for a variety of different sanding purposes, including continuous wet sanding and sanding of hazardous materials. Their compact, lightweight design suits low payload robot arms, and they feature a standardized ISO 9409-1-80-6-M8 flange, customizable with adapters for easy installation. With smart electric technology and modular programming, Mirka sanding tools ensure seamless integration into your production process, delivering consistent quality for most industrial applications.

MIRKA SERVICES

– Expert know-how and tailored industrial services

At Mirka, we deliver specialized industrial services designed to enhance customer value through tailored support from first ideation to full scale operation. Our expertise in automation, particularly in the complex process of surface finishing, sets us apart in the market. Instead of automating the process parameters from manual sanding, we develop processes to suit robotic capabilities.

With our expertise, you can make fact-based decisions that lead to consistent results and less waste. Whether you are looking to improve your current automated processes or taking your first steps into automation, Mirka offers the know-how and support to ensure success in the evolving landscape of industrial automation.



MIRKA EXPERTISE

Receive pre-investment support with testing and validating surface finishing processes.

MIRKA AUTOMATION SERVICE LEVEL AGREEMENT:

We will help you get up and running with your automation and provide ongoing support for updates, troubleshooting, and more.

MIRKA® ROBOTIC TOOLS

– The first smart sanders and polishers for industrial robots

Mirka's robotic tools are an industry first, setting a new standard in efficiency and precision in the market. Our electric smart sanders and polishers, designed for industrial robots, are built inside a durable yet lightweight aluminium housing. Each tool features an ISO 9409-1 compatible flange, ensuring seamless mechanical robot coupling and adaptability across all systems for maximum flexibility. Equipped with a long-life, brushless 48V motor, these robotic tools are specifically engineered for safe wet sanding and operate at a constant, configurable RPM.

1 EASY TO INTEGRATE

- **Lightweight Design:** Mirka's robotic electric tools feature a lightweight design, requiring lower weight handling capacity and saving electricity compared to traditional pneumatic options.
- **Multiple Connections Available:** Ensures faster and easier installation and maintenance, leading to less downtime and improved productivity.
- **Modular Construction:** Equipped with custom flanges for most robot types, allowing maximum flexibility. Adaptable to all mechanical couplings from standard ISO, customizable with an adapter.

2 EXACT RPM MANAGEMENT

- **Built-in Intelligence:** Enables two-way communication between Mirka® robotic tool and the control system.
- **Live Process Control:** Offers full control over the sanding process, ensuring consistent quality.
- **RPM Flexibility:** Customizable RPM for different process phases.

3 MIRKA ECOSYSTEM

- **Dependable Solution:** Mirka® robotic tools are part of the Mirka ecosystem, providing reliable automation solutions.
- **Full Solution:** Includes sanding tools, controller units, abrasives (custom designed for specific needs), and professional know-how and support throughout the entire process.
- **Easy Maintenance:** Separate controller unit for quick part replacement, minimizing downtime.

4 DUST & WATERPROOF

- **IP66 Classified:** Mirka® robotic tools are IP66-classified, suitable for all types of substrates and applications, including wet sanding.
- **Robust Design:** Features a dust and waterproof design combined with a rigid and robust aluminum housing for longer lifetime and safer operations.
- **Maintenance-Free:** No lubrication required.





BUILD YOUR OWN SYSTEM

– Fully customizable solutions for your needs

1

Contact Mirka for first consultation

Contact us when you are about to automate a sanding or polishing process. We assist in defining the optimal process parameters and selecting the necessary products, including robotic tools, abrasives, compounds, and pads.

2

Choose communication

Mirka offers a wide selection of communication protocols for robotic use, such as Profinet, EtherNet/IP and Digital I/O. We also provide plugins for easier use with some cobot brands.

3

Define your sanding process

Choose the most suitable sanding or polishing tool depending on the surface, shape, substrate, and desired finish.

4

Abrasive/compound selection

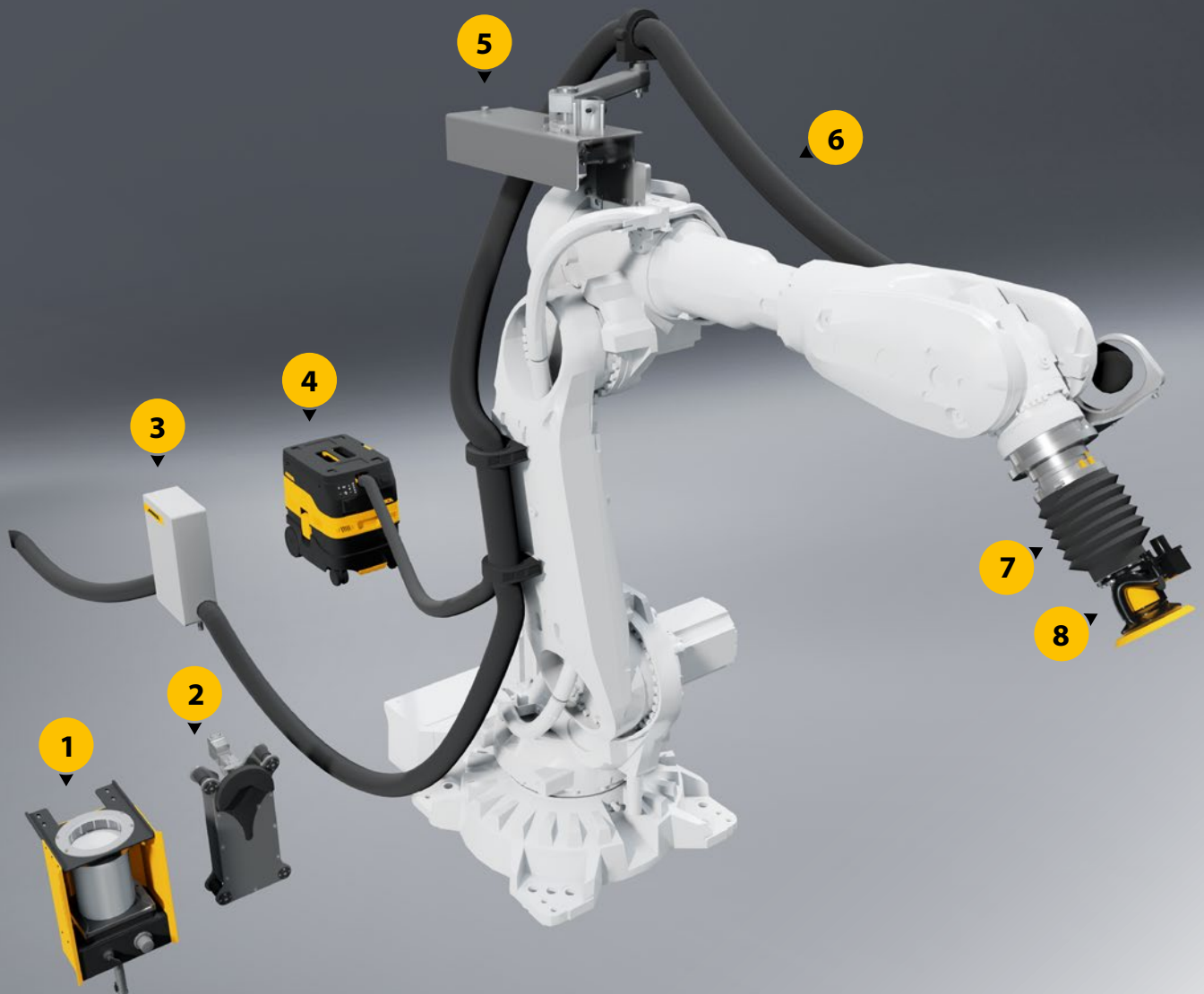
Choose from a wide range of Mirka sanding and polishing products and benefit from Mirka's pioneering net abrasives for dust free environment.

5

Choose suitable AutoChanger Modules

Automated disc changing is an integrated part of the automated sanding and polishing process, significantly speeding up operations by minimizing downtime and ensuring a seamless workflow.

COMPLETE ROBOTIC TOOLKITS AND SOLUTIONS



1. Disc Magazine (Mirka® AutoChanger, 77 or 150 mm)
2. Disc remover unit
3. Mirka control cabinet
4. Mirka® DEXOS 1217 M AFC Dust Extractor
5. Cable holder suitable for different robots
6. Cable assemblies
7. Force control unit
8. Mirka® robotic tools



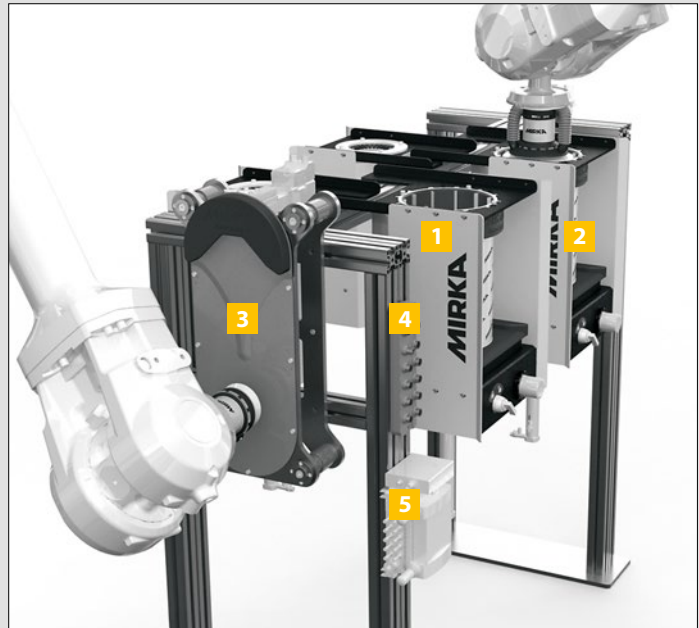
Mirka offers a wide selection of communication protocols that can be used with many type of robots.

Mirka® AutoChanger

- ➔ Modular Automation
- ➔ Flexible Installation
- ➔ Essential Safety
- ➔ Future of Sanding Efficiency

AutoChanger Modules:

- 1 Magazine, 150 mm. MAC1001151
- 2 Magazine, 77 mm. MAC1001071
- 3 Remover. MAC1003991
- 4 Communication kit, Modbus TCP. MAC1009131
- 4 Communication kit, EtherNet/IP. MAC1009141
- 4 Communication kit, Profinet. MAC1009151
- 5 Pneumatic kit. MAC1008101



MIRKA AUTOCHANGER

Automated abrasive replacement



Mirka has developed a special AutoChanger system for instant replacement of Mirka abrasive discs in a robotized sanding process, to work together with Mirka® robotic tools.

Operation

Coupled to the Mirka® AutoChanger, the robotic sanding tool is programmed to pick up a new abrasive from the AutoChanger magazine loaded with abrasive cartridges. After performing the sanding operation for the specified number of times, the sanding tool removes the abrasive using our remover unit, replacing the old abrasive with a new one. This ensures the sanding process is constantly repeated in a reliable way.

Modular Construction

The modular construction of the Mirka AutoChanger provides unparalleled flexibility in integration, with a seamless fit for both new and existing robotic sanding solutions. It can be customized to fit the unique needs of your sanding application.

Choose freely the amount of Abrasive Magazines you want and in what dimensions (77 mm or 150 mm) they should be. See images above and below.



DEDICATED ABRASIVES

For dust-free robotic sanding

Mirka offers a comprehensive range of abrasives tailored to meet all your robotic sanding needs, ensuring top-quality results for any application. Backed by years of experience, Mirka's products are designed to deliver efficiency and durability. For personalized guidance on how to find the right abrasive solution, contact Mirka's team.



ABRANET

Grit range: P80–P180, P240, P320–P1000



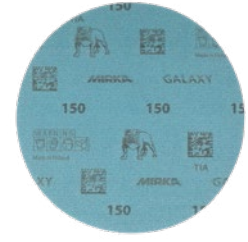
ABRANET ACE

Grit range: P80–P240, P320–P1000



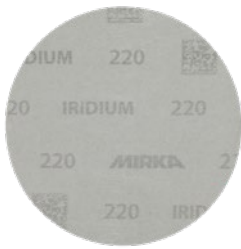
ABRANET ACE HD

Grit range: P40–P120



GALAXY

Grit range: 40–2000



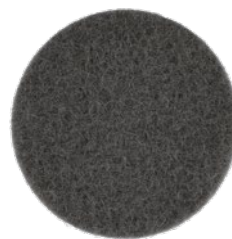
IRIDIUM

Grit range: 40–1000



ABRALON

Grit range: 180, 360, 500, 600, 1000, 2000, 3000, 4000



MIRLON

Grit range: General Purpose – 320, Very Fine – 360, Ultra Fine – 1500, Micro Fine – 2000



CARTRIDGE

Abrasive cartridge with a selectable number of discs (150–250)

Easy and fast loading of abrasives into magazine

Load 200 discs in a heartbeat

1 Turn manual switch on the front of Magazine to "Unlock"-position. The Magazine will automatically be lowered.

2 Remove the old cartridge.

3 Remove top lid of the new cartridge.

4 Insert new cartridge into Magazine.

5 Turn manual switch to 'Lock' position. Magazine base will automatically rise upwards and lock the new cartridge in place.

CUSTOMER CASES

Customer Success With Robotic Solutions

Volkswagen

Surface Finishing in the Volkswagen Factory

The Wolfsburg Volkswagen plant in Germany is one of the biggest factories in the world. It's also one of many modern production sites that utilize Mirka's automation solutions.

Volkswagen has really put Mirka's robotic AIROS sanders to the test and relied heavily on them for over 18 months with great success.

Volkswagen describes how the Mirka® AIROS has revolutionized their production line: 'It was incredibly easy to integrate into our system. Its flexibility and



precision have streamlined our surface finishing processes, improving efficiency across the board.'



INCOsystems

Carbon Fibre Parts With Mirka's Robotic Sanders

When INCOsystems sought to streamline their production processes, they chose Mirka's robotic sanding solutions. The result? A partnership that delivered beyond expectations.

'The entire process, from initial consultation to final installation, was handled with the outmost professionalism'

– INCOsystems management team

Working alongside integration partner Servind, Mirka delivered a comprehensive automation solution that transformed INCOsystems' production capabilities.



AeroSpline

Robot Integrator Favours Mirka's Solutions

In 2019, AeroSpline, a French robot integrator, set out to develop an automated mobile sanding unit. They contacted Mirka and initiated a collaboration. The partnership was a great success and AeroSpline now has several mobile sanding units equipped with Mirka's sanding tools, abrasives, dust extraction system and AutoChanger.

AeroSpline:

AeroSpline's recent automation development began with Mirka pneumatic sanders. By the end of 2019, Mirka had introduced their first electric robotic tool, the AIROS 650CV, which AeroSpline integrated following a request from a French industrial vehicle manufacturer.

'The development of the mobile sanding unit was highly successful, and Mirka's technical team, with its business expertise, assisted us in the deployment of our equipment,' says AeroSpline.

Since 2019, AeroSpline has been developing different sanding units with varied working capacities for automotive bodywork, railways, construction, etc. All these units are equipped with Mirka's AIROS range: 650CV, 350CV, and soon also the 150NV and 1230 Dust Extractors. The extractors have HEPA class M filtration, which is essential for capturing dust particles.

The reliability and robustness of AIROS tools are no longer needed to be demonstrated. AeroSpline has had an AIROS 650CV tool in operation for more than 2 years, over 8,000 Abranet P80 and P150 discs with two Mirka AutoChanger Magazines and one Mirka AutoChanger Remover.

'Thanks to the joint cooperation of our two business' expertises, AeroSpline now has a new market'

– AeroSpline

AeroSpline affirms that the AIROS system has consistently performed well, with no failures reported in the tools or the controller. The company has been using the initial version of the controller, which does not include the Mirka URCAP for Universal Robots. The rotation speed was managed using command bits.

'The dual hose dust extraction at the tool offers excellent dust removal when connected to Mirka dust extraction systems,' says AeroSpline.



ISYCOD Automated Wood Sanding With AIROS

The French robotic systems integrator ISYCOD required an automatable and programmable sander for a Universal Robots robot. They chose Mirka's AIROS sanders, and the results exceeded their expectations.

'The choice of Mirka came naturally, as they are the leader in the wood market, and our client directed us towards this brand, which they use for manual sanding,' ISYCOD explains. The company adds that they are highly satisfied with their AIROS sanders and the entire acquisition process: 'The installation went smoothly and professionally, thanks to the support from Mirka's technical team.'

'These machines exceeded our expectations.'

– ISYCOD

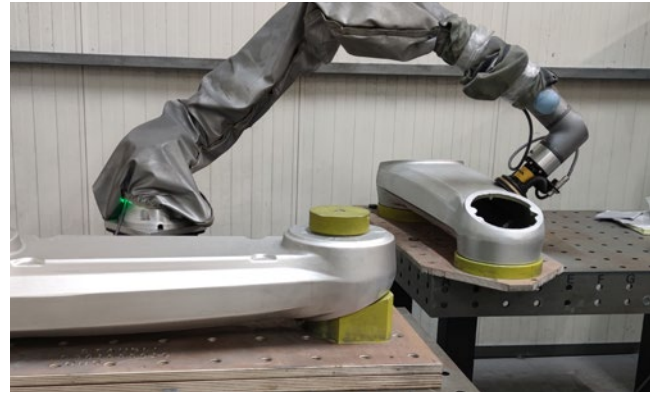
ISYCOD has found the machines easy to operate and highly efficient. The sanders' precision and ability to perform intensive work have optimised the production processes.

'Not only do they save time, but they also significantly improve the quality of the finishes.'

Outstanding After-Sales

ISYCOD describes the post-installation follow-up as impeccable.

'Mirka's team remained attentive to ensure everything was functioning correctly, and we appreciated the responsive and competent support we received. In summary, the experience was very positive from start to finish, and we are delighted to have chosen Mirka's machines,' ISYCOD concludes.



Loire Fonderie Metal Processing in France

One of automation's indisputable advantages is consistency. This is one of the reasons why French precision casting company Loire Fonderie chose to invest in robots and Mirka's AIROS sanders.

'Quality and consistency of sanding was the biggest benefit, after three parts, operator fatigue sets in, but the robot maintains perfect consistency.'

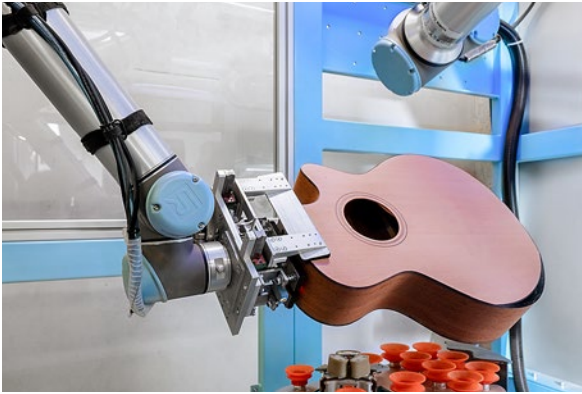
– Loire Fonderie

Key Implementation Success Factors:

- 18-month qualified testing period
- Seamless integration of Universal Robot and Mirka AIROS 550CV
- Expert support throughout testing and implementation
- Complete quality target achievement

Strategic Workforce Optimization

While maintaining equivalent processing speeds, the solution frees skilled operators for higher-value tasks. 'This is a new colleague 4.0,' notes Loire Fonderie, who's already planning expansions into grinding, cutting, and 3D vision applications.



Furch Guitars

Making Premium Instruments with Mirka® AIROS

Sanding and finishing acoustic guitar bodies is a delicate job. A well-crafted guitar is an object of utility that should withstand careful inspection and handling by quality-conscious hands. Consequently, Czech guitar manufacturer Furch Guitars had high standards when looking for suitable sanding machines for their robots.



The renowned guitar maker has been using Mirka's sanding tools for about two years. The robotic tools' excellent sanding quality and consistent performance were deciding factors when Furch Guitars chose the AIROS sanders.

'We are very satisfied with the application and we have no reason to look for another manufacturer if we order additional equipment.'

– Furch Guitars

The automation solution was provided in collaboration with Furch's integration partner Servind.



Aquaestil

Bathtub Finishing with Mirka® AIROS

Croatian Aquaestil are dedicated to continuous innovation and efficiency in their production processes.

'The integration of the AIROS system, along with the advanced disc exchange unit, robotic sanding, and surface finishing technologies, has been a game-changer.'

– Aquaestil

Achieving a flawless finish has always been the goal. Thanks to the new automation solutions, it can now be accomplished faster and smoother than ever.

MIRKA'S ELECTRICAL SANDERS AND POLISHERS FOR ALL ROBOTS

➔ Robotic Sanding



AIROS 150NV

Random Orbital Sander
32 mm • 5.0 mm Orbit



AIROS 350CV/NV

Random Orbital Sander
77 mm • 5.0 mm Orbit



AIROS 550CV/NV

Random Orbital Sander
125 mm • 5.0 mm Orbit



AIROS 650CV/NV

Random Orbital Sander
150 mm • 5.0 mm Orbit



AIOS 130NV

Orbital Sander
32 mm • 3.0 mm Orbit



AIOS 353CV

Orbital Sander
81 x 133 mm • 3.0 mm Orbit

➔ Robotic Polishing



AIROP 312NV

Random Orbital Polisher
77 mm • 12.0 mm Orbit



AIRP 300

Rotary Polisher
77 mm

MIRKA

WARRANTY

**Automated Robotic Solutions
with 12-month warranty**

Mirka products are built to the highest standards of quality and performance. Our robotic tools have a 12-month warranty, covering defects in material and workmanship.

Easily access spare parts, services, and aftersales support by contacting us.

Specifications

The control electronics are separate from the tool and are preinstalled in a Mirka® motor drive cabinet or available as separate components. The electronics include:

- Motor drive with speed controller, relay, Modbus RTU and Digital I/O
- 48 VDC power supply compatible with 90–264 VAC
- Profinet and EtherNet I/P gateway (optional)

MIRKA AUTOMATION SANDING TOOLS

Technical Data	AIROS 150 NV*	AIROS 350 CV/NV*	AIROS 550 CV/NV*	AIROS 650 CV/NV*
Power	50 W	350 W	350 W	350 W
Input voltage	90–264 VAC	90–264 VAC	90–264 VAC	90–264 VAC
DC voltage to sander	48 VDC	48 VDC	48 VDC	48 VDC
Speed	4,000–8,000 rpm	4,000–10,000 rpm	4,000–10,000 rpm	4,000–10,000 rpm
Orbit	5.0 mm	5.0 mm	5.0 mm	5.0 mm
Weight	0.8 kg	1.1 kg	1.3 kg	1.3 kg
Height	107 mm	113 mm	113 mm	113 mm
Size of pad	32 mm (1")	77 mm (3")	125 mm (5")	150 mm (6")
Ambient operating temp.	0–45 °C	0–45 °C	0–45 °C	0–45 °C
Vacuum hose	Not applicable	Ø 27 mm	Ø 27 mm	Ø 27 mm

*CV = Central Vacuum, NV = Non Vacuum

MIRKA AUTOMATION SANDING TOOLS

Technical Data	AIOS 130 NV*	AIOS 353 CV*
Power	50 W	350 W
Input voltage	90–264 VAC	90–264 VAC
DC voltage to sander	48 VDC	48 VDC
Speed	4,000–8,000 rpm	5,000–10,000 rpm
Orbit	3.0 mm	3.0 mm
Weight	0.7 kg	1.2 kg
Height	127 mm	117 mm
Size of pad	32 mm (1")	81 x 133 mm (3 x 5")
Ambient operating temp.	0–45 °C	0–45 °C
Vacuum hose	Not applicable	Ø 27 mm

*CV = Central Vacuum, NV = Non Vacuum

MIRKA AUTOMATION POLISHING TOOLS

Technical Data	AIROP 312 NV*	AIRP 300
Power	350 W	350 W
Input voltage	90–264 VAC	90–264 VAC
DC voltage to sander	48 VDC	48 VDC
Speed	4,000–8,000 rpm	1,000–3,000 rpm
Orbit	12.0 mm	0 mm
Weight	1.1 kg	1.4 kg (3.1 lbs)
Height	113 mm	122 mm
Size of pad	77 mm (3")	77 mm (3")
Ambient operating temp.	0–45 °C	0–45 °C
Vacuum hose	Not applicable	Not applicable

*CV = Central Vacuum, NV = Non Vacuum



MIRKA SERVICES

– Support every step of the process



Moving to automated surface finishing is more than just simply copying manual tasks with a robot. To fully harness the benefits of automation, it is essential to rethink the process and utilize the capabilities of robotic arms. What makes robots particularly effective are their high sanding pressure, speed, and consistency. Our end-effectors and consumables are engineered to help you take full advantage of these capabilities. Coupled with our extensive knowledge in surface finishing, we enable you to achieve superior outcomes by optimizing every aspect of the process.

Through our tailored services, we support you at every stage, ensuring your automated surface finishing process is set up for success – from initial commissioning to continuous improvement.

MIRKA EXPERTISE:

- Provides pre-investment support
- Tests and validates surface finishing processes on your workpieces
- Deliverables depending on selected service tier, from verbal feasibility confirmation to detailed process parameters for optimal setup

MIRKA SERVICE LEVEL AGREEMENT:

- We will help you get up and running with your automation and provide ongoing support for updates, troubleshooting, and more.
- Choose level that match your needs:

STANDARD

- Designed for those seeking extensive support, with the option to pay for additional in-depth assistance as needed
- 5 h remote consultancy and on-site annual audit

PREMIUM

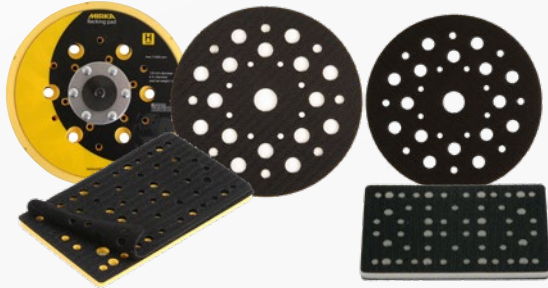
- Ideal for those wanting greater predictability and comprehensive support, especially if you're seeking added confidence in the service area
- 10 h remote consultancy and annual on-site audit
- On-site consultancy at reduced price

ACCESSORIES

Robotics and Automation
products and accessories:



➔ Backing Pads



Backing pads

32 mm – 150 mm and 81 x 133 mm

Pad savers

32 mm – 150 mm and 81 x 133 mm

Interfaces

77 mm – 150 mm and 81 x 133 mm (54 holes grip)

More information and choices at mirka.com

➔ Motor Drive Cabinets for Mirka Tools



Mirka® motor drive cabinet, Profinet

Mirka code: MIA6514212

Mirka® motor drive cabinet, Modbus

Mirka code: MIA6514112

Mirka® motor drive cabinet, EtherNet I/P

Mirka code: MIA6514312

➔ Dust Extraction



Filters, hoses, dust extractors, autostart modules and more. We have everything you need for a healthy, dust-free work environment.



➔ Polishing



Add the final touches to your project with Mirka's premium polishing products.

Our wide selection of polishing compounds and pads thoroughly removes imperfections and enhances the surface finish of various materials.





Mirka Ltd
Finland

Brazil Mirka Brasil Ltda.

Belgium Mirka Belgium Logistics NV

Canada Mirka Canada Inc.

China Mirka Trading Shanghai Co., Ltd

Finland & Baltics Mirka Ltd

France Mirka France Sarl

Germany Mirka GmbH

India Mirka India Pvt Ltd

Italy Mirka Italia s.r.l., Mirka Superabrasives S.p.A

Mexico Mirka Mexicana S.A. de C.V.

Netherlands Mirka Benelux B.V

Poland Mirka Poland Sp. z o.o

Singapore Mirka Asia Pacific Pte Ltd

Spain KWH Mirka Ibérica S.A.U.

Sweden Mirka Scandinavia AB

Turkey Mirka Turkey Zımpara Ltd Şirketi

United Kingdom Mirka (UK) Ltd

United Arab Emirates Mirka Middle East FZCO

USA Mirka USA Inc.

For contact information,
please visit [mirka.com](https://www.mirka.com)

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