

## AUTOMATED LOADING SYSTEM FOR MACHINING CENTERS

Automation  
**RC20**





## PRODUCTIVE SOLUTIONS

As industrial process experts, we help you meet your challenges.

Productivity, safety, quality, industry 4.0 are themes on which we can offer you our expertise and our solutions. Our dedicated and specialised teams support your progress and recommend solutions and equipment to reach performance levels in line with your industrial strategy requirements.



### Certified quality

From design to commissioning, DOGA guarantees equipment and service quality according to ISO 9001:2015 certification.

## 5 reasons to trust us



### Expertise

Our field experts propose solutions adapted to your environment and specific needs.



### Innovation

By developing tomorrow's products and services, we offer you new perspectives and prospects.



### Performance

Our high value-added solutions improve your performances and guarantee the quality of the final product.



### Commitment

Focusing of your objectives, we commit ourselves to helping you reach them.



### Reliability

Our organisation, ISO 9001 certified since 1996, is the guarantee of your satisfaction.

## DOGA® | USINAGE

Our teams can help you optimise your manufacturing processes and reduce your production costs with high technical added value global machining solutions.

Our cutting tools, turning and milling accessories and palletising robots help increase your productivity, reduce your production costs, and improve your responsiveness and production quality.

We use our know-how to propose cutting edge technology. Our solutions allow you to be competitive on your markets and optimise your production process efficiency.



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# WHY AUTOMATE YOUR PRODUCTION?

In the Industry 4.0 era, automation is no longer an option. This transition has become essential to meet your future challenges in the precision mechanics sector. Regardless of the size of your business, it will allow you to guarantee your activity's long-term sustainability and you can use its performance as a true lever to increase your competitiveness. DOGA gives you some answers on the material benefits of automated production:

## 1 | Increase your production volumes

Using automation, you increase your production capacity in concurrent operation time and considerably extend the range of your available machining system hours, especially in the evenings, at night and on weekends.

## 2 | Improve operator working conditions

Automation significantly reduces the risk of MSDs (Muscular-skeletal disorders) and frees up operator time for more value-added tasks such as part quality control, planning or supervising several machine tools simultaneously.

## 3 | Gain in flexibility

Emergencies, order peaks, mass production variations to manage: using automation you can adapt to production fluctuations flexibly and responsively.

## 4 | Reduce your costs

Automation significantly reduces production costs. The result is a reduced cost price for each produced part while maintaining production quality.

## 5 | Make the most of your investment

By optimising your production time and capacity, your production tool profitability increases. Nothing costs more than equipment not used to its full potential.

## 6 | Boost your competitiveness

The lower production costs achieved using automation will allow you to improve your competitiveness and conquer new markets, including in the increasingly competitive international arena.

You want to know which solution would allow you to make the most of all these benefits? Contact us, we will look at your project together. We can also carry out a personalised simulation of the fast "payback time" for your future installation.

[usage-robot@doga.fr](mailto:usage-robot@doga.fr)



### Adaptability

- Compatibility with the vast majority of new and existing 3 or 5 axis machining centers.
- Low space occupation.
- Front or side loading.
- No need for an air supply on the machine table.
- Communication by simple M function.



### Simplicity

- Easy to install, use and maintain.
- High flexibility due to quick changeover from one series to another.
- Side window or front door automation supplied and installed by us.
- No automation knowledge required.



### Quality

- Precise repositioning of each pallet or vice/pallet on the machine table to within 5 microns.
- French design and manufacture in compliance with the latest CE directives and safety standards.



### Performance

- Increase your productivity.
- Reduce production lead times.
- Automate small and medium series.
- Quick return on investment.

## WHY CHOOSE DOGA?

### Automation for all!

Switch to automation easily and significantly increase your productivity using the DOGA loading and unloading system.

Our automated loading robot can be adapted to the vast majority of new or existing 3 or 5-axis machining centers.

Its simple and user-friendly operation, combined with an excellent price/productivity ratio, guarantee high output and a quick return on investment.

Increase your competitiveness and seize new opportunities by winning market share!



**MADE IN  
FRANCE**



# DOGA SUPPORTS YOUR AUTOMATION PROJECT

Our teams of experts work with you to define your automated loading and unloading project for your machining center, with the following objectives:

- Increased productivity
- Increased process performance
- Meet your requirements and expectations

## A 3-PHASED STRUCTURED APPROACH



### 1 | PROJECT STUDY

- ▶ Analysis of the need
- ▶ Feasibility check
- ▶ Definition of a technical solution



### 2 | BUDGETARY STUDY OF YOUR PROJECT

- ▶ Calculation of return on investment and profitability
- ▶ Detailed commercial proposal



### 3 | INSTALLATION, COMMISSIONING AND TRAINING

- ▶ Transport and installation on site
- ▶ Equipment configuration
- ▶ Tailored user training



## PERSONALIZED, REMOTE, AUGMENTED REALITY PRESENTATION

### An immersive experience

Led by our automation expert product manager, this presentation will let you to discover our automated systems, define your needs and check that our solutions are suitable for your applications.

### 1 hour of personalised discussions

- ▶ Analysis of your needs
- ▶ Demonstration of the automation system and its functions for your application
- ▶ Calculation of your return on investment
- ▶ Questions and answers



Get as close as you can



Watch operations



Operate the elements



Discover the variants and options



Check out the points of interest

Get your personalised presentation and let us guide you!



## A SOLUTION FOR EVERY NEED

# Automation RC20

Compact structures and high capacity storage are not contradictory!  
This Automation system proves it.

### Ideal for:

- ▶ Wide parts
- ▶ Load weight optimisation
- ▶ Machining of single parts, small and medium series

- ▶ SIMPLICITY
- ▶ ADAPTABILITY
- ▶ PROFITABILITY





# Specifications

Automation  
**RC20**



Description	RC20 - Pallet storage and handling
Pallet quantity	20
Weight carried	40 kg
Maximum dimensions on pallet (LxWxH)	L 225 x 200 x H 300 mm (fully loaded) L 400 x 200 x H 300 mm (1 pallet out of 2)
Minimum space occupation.	2 x 2 m
Height	2 m
Total weight	2,000 kg
Loading arm extension	1.2 m
Reverse kit (optional)	yes
Certification	CE
Code	1-2034458

## Compose your automation system

Find all the components and worholding solutions common to the RC20 assemblies on page 14.



SOLIDPoint  
pneumatic base



SOLIDPoint  
Point Zero Plate



Automated  
side window



Front door  
automation



SOLIDGrip  
automation  
vice



SOLIDChuck  
chuck



Support  
pallet



SOLIDClean  
Automated  
cleaning

# RC20 AUTOMATION SYSTEM

The RC20 automated loading/unloading system considerably increases the productivity of your new or existing 3- or 5-axis machining center. Its unique technology and ease of use guarantee optimal use and fast payback time. Its ease of installation, use and maintenance make it a major workshop asset.



- 1 Control panel
- 2 Storage table  
Capacity 20 pallets or vices
- 3 Reverse kit (optional)
- 4 Storage table access door

- 5 Loading arm  
Extension up to 1.2 m  
Loads up to 40 kg
- 6 Colour customisation
- 7 Low space occupation  
only 2 x 2 m.





## Optimised production unit potential

- ▶ **Increased machining center autonomy**  
Concurrent operating time during the day, additional time at night and/ or on weekends, guaranteeing a significant increase in production capacity without human intervention.
- ▶ **Possibility of loading small or large parts** using every other position loading.
- ▶ **Overall increased competitiveness** through the optimisation of production tool profitability
  - Reduced cost of every produced part
  - Improved responsiveness
  - Reduced delivery lead times
- ▶ **Fast return on investment** thanks to an excellent productivity/price ratio.



## Simple and safe operation

- ▶ **Ease of use**
  - Optimal use without specific knowledge thanks to the simple and user-friendly operating principle.
  - Direct and permanent access to the pallets on the storage table through the double front door.
- ▶ **Loading process control**
  - Total safety during loading thanks to the pneumatic locking of the pallet on the fork.
  - Control of perfect pallet positioning on the pneumatic base thanks to the pallet drop off sensor.
  - CE certification.



## Adaptability, easy integration and simple maintenance

- ▶ **Easy installation**
  - Adaptable to the vast majority of new or existing 3 or 5 axis machining centers.
  - Optimal space occupation/storage capacity ratio.
  - Side or front loading on a rotating reverse kit for access to the machine table for adjustment operations, manual loading, etc.
  - Communication between the machining center and the RC20 system using a simple M function (no "robot interface" required).
  - The pneumatic interface located under the handling fork supplies the pneumatic base placed on the machining center. No other air supply is required on the machining center.
- ▶ **Overall turnkey solution**
  - Automated side window or front door automation, pneumatic base on Point Zero, workholding, etc.
  - Installation in 2 to 3 days.
- ▶ **System reliability and simple maintenance**  
All movements are provided by pneumatic cylinders and controlled by sensor.
- ▶ **Customisation at no extra cost!**  
Choose the corner guard RAL colour to match your RC20 with your machining center.



# EXAMPLES OF RC20 AUTOMATION SYSTEM INSTALLATIONS

Similarly to the examples of our systems shown on this page, we will be able to propose an installation adapted to your needs thanks to the many possibilities of our automated loading systems.

- On new or existing machining centers
- Compatible with all machining center brands

Machining center brands we have already equipped:

**AKIRA SEIKI / AWEA / DMG MORI / DOOSAN / FANUC / HAAS / HARDINGE / HEDELIUS /  
HERMLE / HURCO / MATEC / MATSUURA / MAZAK / MIKRON / OKK / OKUMA / QUASER /  
SPINNER / STAMA / VICTOR**



*DMG MORI DMU 60 EVO*



*DMG MORI DMU 50*



*MAZAK VCN530C*

Contact us for a personalised study  
of your existing or future machining  
center!

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## Example of composition



**x 1 RC20 automation**  
*Bare without pallet*



**x 1 SOLIDPoint Ø 246 plate**  
*For the quick positioning and fixing of the pneumatic base on the machine table*



**x 1 pneumatic base**



**x 1 automated side window**



**x 20 automation vices**  
*Jaw width: 125 mm  
Max. opening between jaws: 205 mm*



**x 1 SOLIDClean automated cleaning**

**x 1 installation / commissioning / training**

**x 1 packaging / transport**



The above composition is based on a side loading configuration. It may not perfectly match your machine configuration. We are available for any study and personalised price proposal.



**ESTIMATED  
PAYBACK TIME  
OF LESS THAN  
1 YEAR**

Average values reported by our customers following the installation of their RC20 automation system.

**+230  
H/MONTH**

**Additional production time**

**+75%**

**Production capacity**



Find out more about  
the RC20 automation  
system





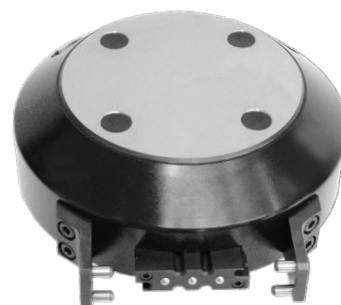
# ACCESSORIES

## Pneumatic base and Point Zero system

### Pneumatic base

This base includes pneumatic actuation of the proven SOLIDPoint® technology. It is positioned and fixed on the machining center using a SOLIDPoint® Zero Point Plate.

Description	Code
SOLIDPoint® pneumatic base, height 80 mm	<b>1-2036852</b>



### Zero Point plate

The SolidPoint® plate provides accurate repositioning to 0.05 mm and quick pneumatic base fixing.

The 6 000 kg of holding force guarantees excellent assembly rigidity.

Description	Code
SOLIDPoint® Ø 246 plate, thickness 27 mm	<b>660103 (HWR)</b>



## Automated opening / closure

### Automated side window

This standard pneumatically operated side window is supplied and installed by us. Depending on the machining center guard specifications, a specific adapter plate may also be required (optional).

Description	Code
RC20 automated side window	<b>1-2000266</b>



### Front door automation

For front loading, we can propose the study and manufacture the elements needed for the automatic opening and closure of your machining center front door.

Description	Code
Automated front door system	<b>on request</b>



## Automation's workholding

### Automation vice

This vice is perfectly adapted to the RC20 automation system. It provides optimised access to parts during 5-axis machining and the strongest gripping power on the market (on a 3 mm clamping height only) thanks to the "form-closure" clamping technology.

Description	Code
125 automation vice Max. opening between jaws: 205 mm	<b>681205-125-DRC</b> (HWR)



### Automation chuck

The SOLIDChuck is ideal for milling operations on round parts. Their compatibility with both hard and soft stud jaws increases the number of clamping possibilities and therefore the number of applications.

Description	Code
SOLIDChuck (without jaw)	<b>684016</b> (HWR)
Set of 3 soft jaws for SOLIDChuck	<b>684162</b> (HWR)
Set of 3 hard jaws for SOLIDChuck	<b>684161</b> (HWR)



### Automation support pallet

The steel support pallet (Ø 178 mm) is the ideal solution for fixing your own tools, workholding or parts for machining.

Description	Code
Support pallet, thickness 27 mm, without holes	<b>6900097</b> (HWR)
Support pallet, thickness 24 mm, with holes For positioning and fixing SOLIDGrip 46 and 77 vices (grid 52) (screws and calibrated bushings not included)	<b>on request</b> (HWR)



## Automated cleaning

### Chip fan

The SOLIDClean is used to automatically remove chips and lubricant from parts / pallets / vices prior to unloading by the automation system.

Description	Code
SOLIDClean diameter 160 mm	<b>686160</b> (HWR)
SOLIDClean diameter 260 mm	<b>686260</b> (HWR)
SOLIDClean diameter 330 mm	<b>686330</b> (HWR)



Find all our MACHINING products on our  
website by scanning this QR code



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