

THE FACTORY AUTOMATION COMPANY

FANUC

CR series

Powerful collaborative robots for a wide range of applications



Safe versatile
human-robot collaboration
for more efficiency

Let's work together!

Safety-certified and with payloads up to 35 kg, the FANUC CR series of collaborative robots works hand in hand with humans to add value to your process.



Not sure if a collaborative robot is the right choice for you? The following insights might help:

Want to maximise productivity?



If your processes tend to be repetitive and don't involve additional added-value tasks involving humans, automating them by using standard industrial robots often provides the best solution. **We call this automation.**

Want to reduce safety-related downtime?




If your processes simply require humans to enter the robot's working area without having to stop production, standard robots can be equipped with intelligent safety features, such as Dual Check Safety (DCS), that keep humans safe and eliminate the need for fences. **We call this cooperation.**

Want to combine the power of a robot with human skills?



If you want to combine the strength, precision and repeatability of a robot with human know-how and manual dexterity, collaborative robots make the best choice – by working hand in hand, humans and robots can add real value to your processes. Plus, by doing all the heavy lifting up to 35 kg, collaborative robots also keep their human colleagues safe from strain and repetitive injuries. **We call this collaboration.**



CR-35iA is the strongest collaborative robot on the market.

The strongest collaborative robot series on the market: we lift up to 35 kg

Thanks to payloads of 4 kg, 7 kg and 35 kg and unrivalled reach, the CR series is ideally suited to handling processes that expose human workers to the risk of repetitive strain and other work-related injuries. It also has benefits in terms of quality and repeatability since it controls force with much more precision than human operators.



We don't need fences

The FANUC CR series can work side by side with humans or collaborate with them without the need for external safety devices.

BUILT-IN SAFETY FOR ALL-ROUND PROTECTION

The CR series is equipped with FANUC collision stop protection. For maximum reliability, this uses proven sensor technology. All robots have a function to restart them easily and quickly after a stop. In addition to contact stop, the CR series comes with push back and anti-trap features for additional protection. To prevent the risk of pinching, the larger CR-35iA model comes wrapped in a passive soft cover.



CONTACT STOP

The CR series stops gently after a collision with a fixed object or person and retracts. A safety system ensures that the robot stops at a maximum of 150N. This force threshold can be reduced if required.



PASSIVE SOFT COVER

The larger CR-35iA model is fitted with a soft cover that eliminates pinch points and sharp edges. The cover also reduces contact pressure and, in the event of an impact, provides cushioning.



SAFE STOP FUNCTIONS

CR series robots meet ISO 10218 and ISO 13849 Cat. 3 Pld. All CR models, even the powerful CR-35iA, can also achieve ISO/TS 15066. To further increase productivity, additional third-party safety devices can be fitted.



PUSH BACK FUNCTION

The operators can simply push back the robot's two major axis to free themselves should the robot pose a risk.



ANTI-TRAP PROTECTION

With robots unable to create gaps of less than 120 mm for arms and 5 mm for fingers, anti-trap protection on the CR series meets ISO 13857.



DUAL CHECK SAFETY (DCS)

DCS is a safety system that monitors position and speed. It is a proven technology used on many standard FANUC robots. On the CR series, third-party safety equipment can be connected to DCS to provide an additional level of safety and increase productivity.

We can recognise objects



Depending on what you want to do, the CR series can be equipped with a FANUC 3D Area Sensor, FANUC Force Sensor or FANUC Vision Sensor.

Opening up a wealth of possibilities, the 3D Area Sensor even enables the robot to pick randomly distributed parts from a bin.

FANUC Force Sensor detects force and torque applied to the end effector allowing the robot to carry out collaborative assembly, fitting and weighing operations for example.

Using the Vision Sensor, the CR series is capable of locating workpieces, reading bar codes and sorting by colour.



We're ready to help

The CR series has been designed to offer you a wealth of new collaborative opportunities in industries ranging from automotive, packaging, distribution, metalworking, electronics and chemicals to name but a few. For more flexible layouts, CR-4iA, CR-7iA and CR-7iA/L robots can be upside-down mounted, wall mounted or fixed to a mobile platform.



AUTOMOTIVE MACHINING AND ASSEMBLY

Preventing the risk of repetitive strain injuries amongst assembly line workers, the CR series will lift and position heavy components on machining and assembly lines. The repeatability offered by using a collaborative robot for these processes also improves quality and reduces cycle times.



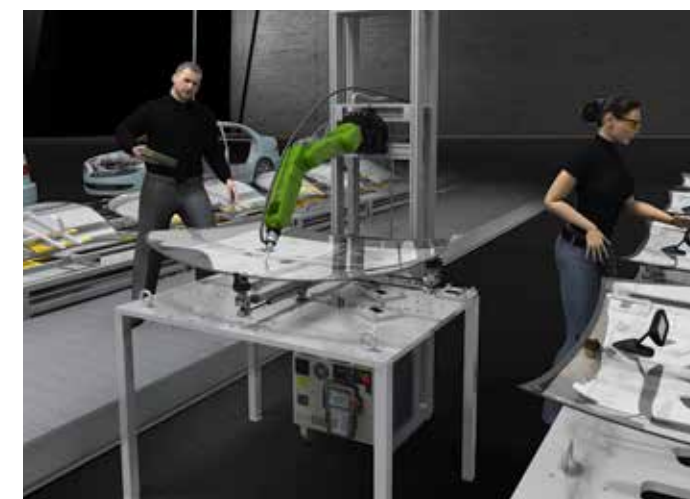
MACHINE TENDING AND PART INSPECTION

The CR series is ideally suited to those machine tending applications that frequently require an operator's presence. Eliminating the need for an additional workstation, the robots can also carry out quality control checks as part of the handling process.



PICKING, PACKAGING AND PALLETISING

On packaging and palletising lines, the CR series can be used to carry out dull, repetitive, dirty and dangerous handling tasks, freeing up staff to perform more complex and diversified jobs requiring human skills.



DISPENSING

Whether they are used to apply sealants, adhesives, paints or other fluids, the CR series works safely next to humans across a range of industries.

The CR-35iA is easy to guide

FANUC Hand Guidance

FOR EASY PROGRAMMING AND HANDLING

FANUC Hand Guidance allows you to teach your collaborative robot by leading it through paths and/or use it to lift heavy objects manually. This is made possible by an emergency stop button and a three-position enabling switch that meets ISO 10218 and ISO/TS 15066.

Teaching with FANUC Hand Guidance function

- teach robots easily by leading them through paths and points
- easy and intuitive
- eliminates the need for a pendant to teach positions
- less training time and costs

Handling with FANUC Hand Guidance function

- robot can be used as a strong arm for individual handling operations
- guide the robot arm and tooling by hand to the right point
- pick up and carry the workpiece using hand guidance
- benefit from human flexibility by allowing manual control of the application
- position parts with minimum effort



We use proven FANUC technology

And a familiar interface



THE CR SERIES OPERATES LIKE ANY OTHER FANUC ROBOT BECAUSE ON THE INSIDE IT'S JUST LIKE ANY OTHER FANUC ROBOT.

Your benefits:

- based on proven LR Mate and M-20 technology
- good repeatability and proven FANUC reliability
- uses the standard FANUC interface for easy learning, programming and setup
- no extensive retraining necessary
- ROBOGUIDE simulation software
- full spare parts availability
- global service & support
- customisable and including a large number of options



Technical data CR series

| Specifications | CR-4iA | CR-7iA | CR-7iA/L | CR-35iA |
|--|----------------|----------------|----------------|---------------|
| Type: articulated | • | • | • | • |
| Controlled axes | 6 | 6 | 6 | 6 |
| Max. load capacity at wrist [kg] | 4 | 7 | 7 | 35 |
| Reach [mm] | 550 | 717 | 911 | 1813 |
| Repeatability [mm] *1) | ±0.013 | ±0.018 | ±0.018 | ±0.04 |
| Mass [kg] *2) | 48 | 53 | 55 | 990 |
| Installation: floor upside down wall *3) | • • • | • • • | • • • | • - - |
| Motion range | | | | |
| J1 axis rotation [°] | 340 | 340 | 340 | 370 |
| J2 axis rotation [°] | 150 | 166 | 166 | 165 |
| J3 axis rotation [°] | 354 | 373 | 383 | 258 |
| J4 axis wrist rotation [°] | 380 | 380 | 380 | 400 |
| J5 axis wrist swing [°] | 200 | 240 | 240 | 220 |
| J6 axis wrist rotation [°] | 720 | 720 | 720 | 900 |
| Max. speed [mm / s] *4) | 500 / 1000 *5) | 500 / 1000 *5) | 500 / 1000 *5) | 250 / 750 *5) |
| Allowable load moment at wrist | | | | |
| J4 axis [Nm] | 8.86 | 16.6 | 16.6 | 110 |
| J5 axis [Nm] | 8.86 | 16.6 | 16.6 | 110 |
| J6 axis [Nm] | 4.9 | 9.4 | 9.4 | 60 |
| Allowable load inertia at wrist | | | | |
| J4 axis [kgm ²] | 0.2 | 0.47 | 0.47 | 4 |
| J5 axis [kgm ²] | 0.2 | 0.47 | 0.47 | 4 |
| J6 axis [kgm ²] | 0.067 | 0.15 | 0.15 | 1.5 |
| Installation environment | | | | |
| Acoustic noise level [dB] | 64.7 | 64.7 | 64.7 | < 70 |
| Ambient operating temperature [°C] | 0-45 | 0-45 | 0-45 | 0-45 |
| Protection | | | | |
| Body standard/optional | IP67 | IP67 | IP67 | IP54 |
| Wrist & J3 arm standard/optional | IP67 | IP67 | IP67 | IP67 |

• standard

*1) ISO 9283

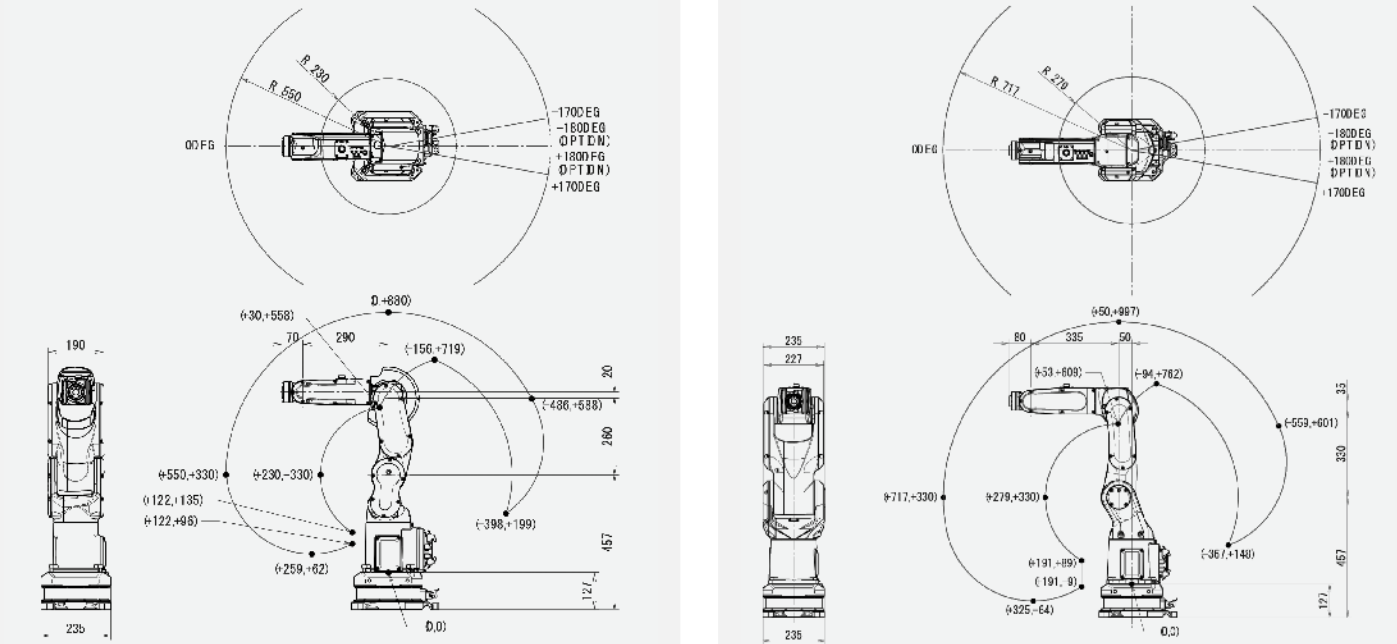
*2) without controller

*3) In case of the wall mount, the operation space will be restricted according with the payload.

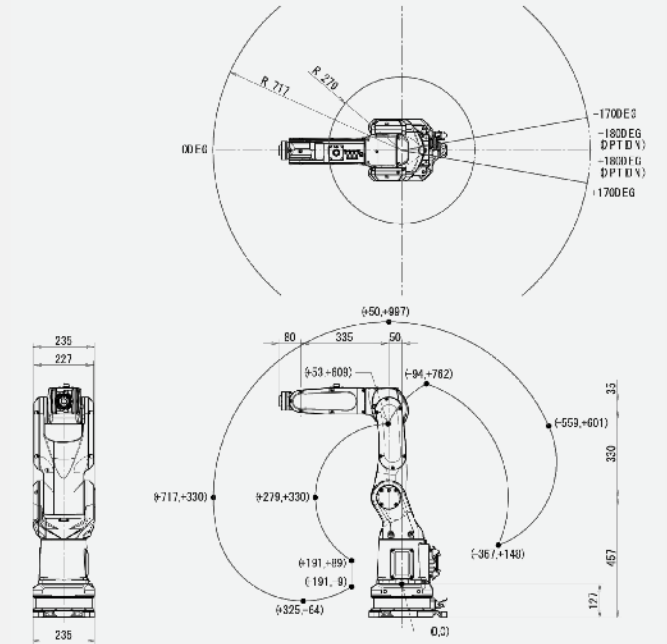
*4) In case of short distance motion, the speed may not reach the maximum value stated.

*5) if the area is monitored by a safety sensor (located separately)

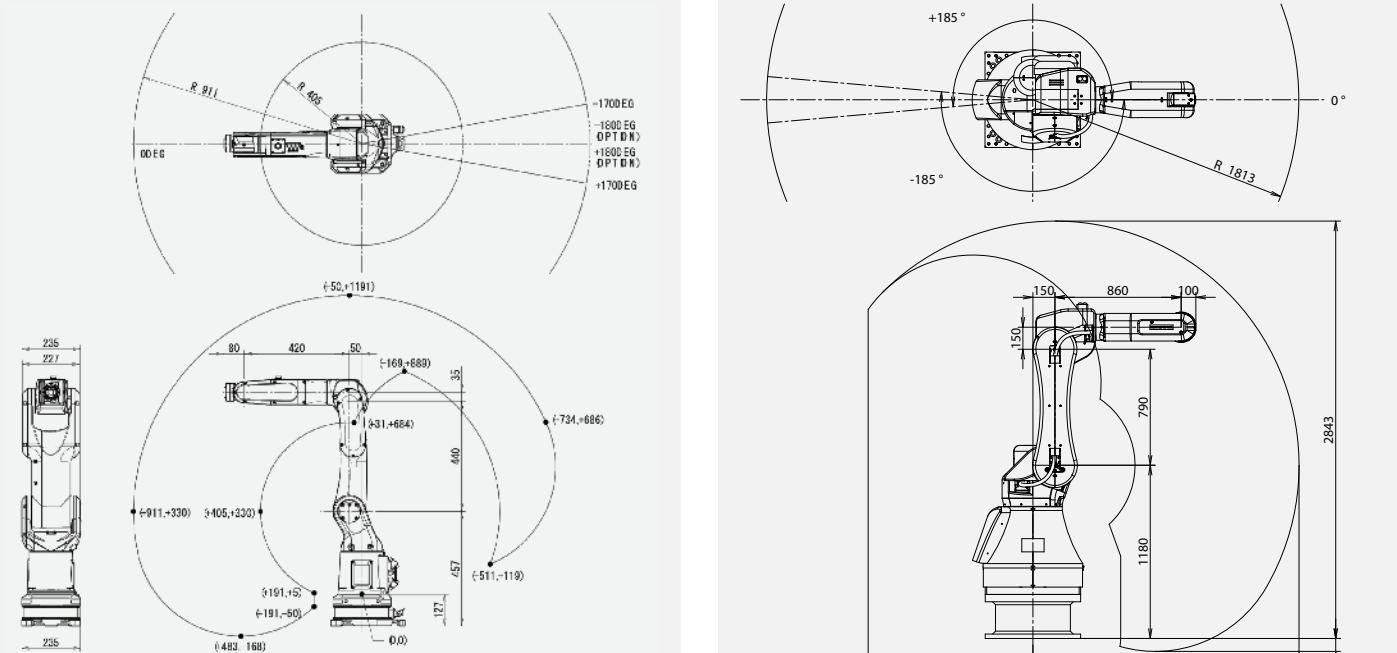
Working range CR-4iA



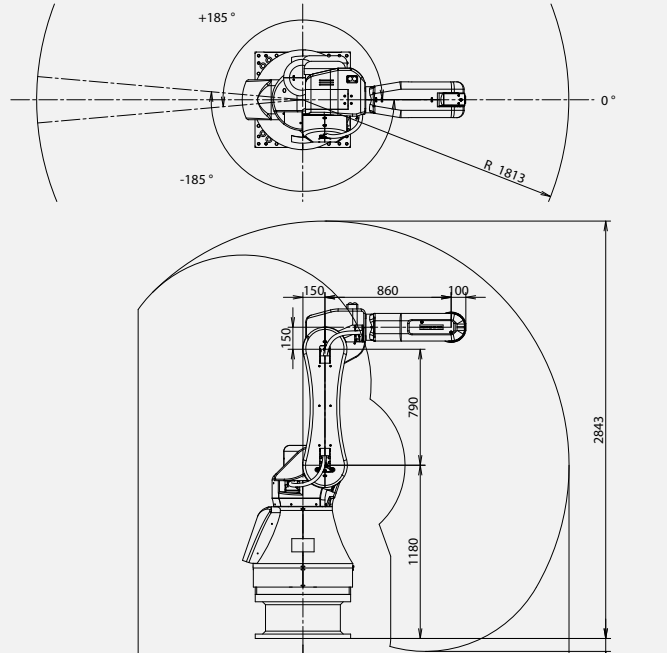
Working range CR-7iA



Working range CR-7iA/L



Working range CR-35iA



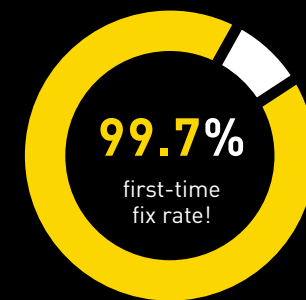
Key benefits at a glance:

- 01 Make the best use of limited space**
The CR series works in a small footprint and does not require peripheral devices such as fences, allowing operators to move around safely
- 02 Improve workspace ergonomics**
The CR series reduces the need for humans to continuously bend or take uncomfortable positions
- 03 Prevent injuries**
The CR series eliminates the need for humans to handle dangerous parts and substances or lift objects weighing up to 35 kg
- 04 Provide flexibility on small batches and custom jobs**
The CR series does repetitive tasks and allows human operators to concentrate on skilled assignments
- 05 Lean quality control**
The CR series assists the operator in conducting inspections safely without slowing or stopping production



Efficient FANUC service worldwide

Wherever you need us, our comprehensive FANUC network provides sales, support and customer service all around the world. That way, you can be sure you have always got a local contact that speaks your language.



Efficient training: FANUC Academy

The FANUC Academy offers everything you need to upskill your teams and increase productivity – from introductory programs for beginners through to courses tailored to the needs of expert users and specific applications. Fast and effective learning, on-site training or cross machine training make up the extensive educational offering.



WWW.FANUC.EU/SERVICE

Efficient long-time productivity: FANUC Maintenance Services

To minimise impact on production and get the most out of your machine, we offer maintenance services designed to lower your machine's TCO. Whatever your production scenario, FANUC solutions keep your machine running via dedicated preventive, predictive and reactive maintenance procedures that maximise uptime and keep downtime to a bare minimum.

Efficient supply: Lifetime OEM spare parts

As long as your machine is in service, we will provide you with original spare parts – for a minimum of 25 years. With more than 20 parts centres all over Europe, dedicated service engineers and direct online access to FANUC stores, availability checks and ordering, we keep you running whatever happens.

24/7
support



MANUFACTURED EFFICIENCY: 5 PRODUCT GROUPS - ONE COMMON SERVO AND CONTROL PLATFORM



FA
CNCs, Servo Motors
and Lasers



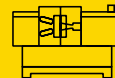
ROBOTS
Industrial Robots,
Accessories and Software



ROBOCUT
CNC Wire-Cut Electric
Discharge Machines



ROBODRILL
Compact CNC Machining
Centres



ROBOSHOT
Electric CNC Injection
Moulding Machines



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