

CRAF Robot Arms

Product Name		CR5AF	C R10A F	CR20AF
Weight		25.5kg	40.5kg	74kg
Maximum Payload		5kg	10kg	20kg
Working Radius		900mm	1300mm	1700mm
Maximum Linear Speed		2m/s	2m/s	2m/s
Joint Range of Motion	J1	±360°	±360°	±360°
	J2	±360°	±360°	±360°
	J3	±160°	±160°	±165°
	J4	±360°	±360°	±360°
	J5	±360°	±360°	±360°
	J6	±360°	±360°	±360°
Maximum Joint Speed	J1	180°/s	150°/s	120°/s
	J2	180°/s	150°/s	120°/s
	J3	180°/s	180°/s	150°/s
	J4	223°/s	223°/s	180°/s
	J5	223°/s	223°/s	180°/s
	J6	223°/s	223°/s	180°/s
Force Sensor	Range	Force(Fx/Fy/Fz):150N Torque(Mx/My/Mz):15Nm	Force(Fx/Fy/Fz):300N Torque(Mx/My/Mz):30Nm	Force(Fx/Fy/Fz):500N Torque(Mx/My/Mz):50Nm
	Overload	500% F.S.	500% F.S.	500% F.S.
	Accuracy	1% F.S.	1% F.S.	1% F.S.
	Precision	0.5% F.S.	0.5% F.S.	0.5% F.S.
End-Effector I/O	DI	2 Channels	2 Channels	4 Channels
	DO	2 Channels	2 Channels	4 Channels
	AI	2 Channels (shared with RS485)	2 Channels (shared with RS485)	4 Channels (shared with RS485)
	RS485	Supported	Supported	Supported
Repeatability		±0.02mm	±0.03mm	±0.05mm
IP Rating		IP54	IP54	IP54
Temperature Range		0~50°C	0~50°C	0~50°C
Power Consumption		150W	350W	500W
Installation Method		Upright Installation		
Cable Length		5m	5m	6m
Material(s)		Aluminum Alloy, ABS Plastic		

Control Cabinet

Product Name		CC262	CC263
Dimensions		345mm*345mm*145mm	400mm*400mm*175mm
Weight	AC Version	9.5kg	15.5kg
	DC Version	8.5kg	/
Power Supply	AC Version	100~240V, 47~63Hz	
	DC Version	30~60V	/
I/O Power Supply		24V, Max3A, per Channel Max 0.5A	
IO interface	DI	24 Channels (NPN or PNP)	
	DO	24 channels (NPN or PNP)	
	AI	2 Channels (Voltage/Current Mode: 0~10V, 4~20mA)	
	AO	2 Channels (Voltage/Current Mode: 0~10V, 4~20mA)	
Remote Power On/Off		Supported	
Communication Interfaces	Ethernet	2 Ports (TCP/IP, Modbus TCP, Ethernet/IP, Profinet)	
	USB	2 Ports (file import/export)	
	RS485	1 Port (Modbus RTU)	
	Encoder	1 ABZ Incremental Encoder Interface	
Environmental Specifications	Temperature	0~50°C	
	Humidity	≤95% (non-condensing)	
Protection Rating		IP20 (optional IP54)	
Cooling Method		Fan Cooling	
Teaching Methods		PC, APP (Android), Teach Pendant	
Compatible Models		CR5AF, CR10AF	CR20AF



DOBOT CRAF Series

Built-in Force Soul, Born to Collaborate

DOBOT CRAF Series – Force Control Cobots

The CRAF Series builds on the CRA Series by integrating a high-precision 6-axis force sensor directly into the flange end. This embedded design equips the cobot with enhanced compliant force control and precision task capabilities.



Product Structure

All-in-one Force Control Design

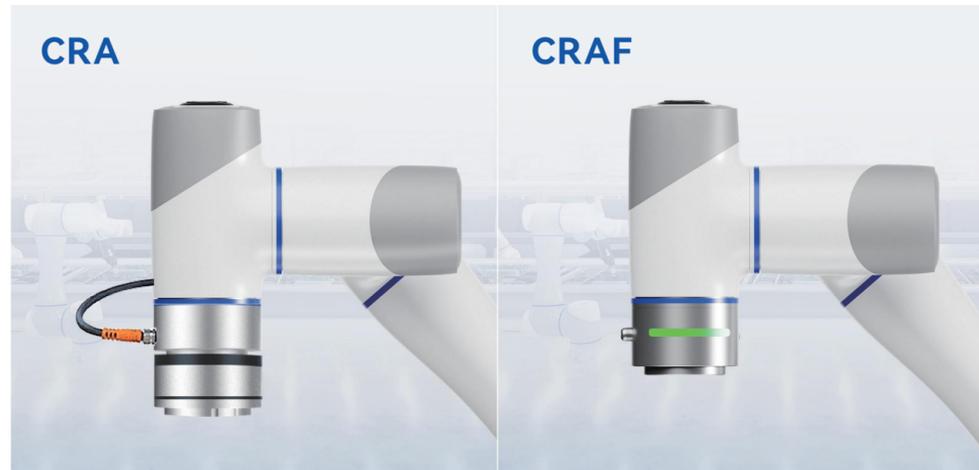
- The CRAF series are factory-calibrated with precision, requiring no additional calibration or configuration of the force sensor—ready for immediate use.

Flange with Ring Status Light

- Features an **ring status light** for real-time robot state visibility
- Designed with a press-to-drag button.

Non-Occupying End Interface

- Does not occupy tool-side RS485 or I/O ports**, ensuring compatibility with external devices (such as electric grippers or the VX500 Smart Camera)

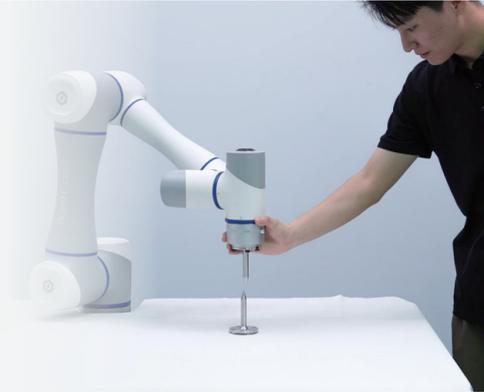


Key Advantages

The force-controlled cobot, through its integrated "sensor - algorithm - structure" design, achieves medical-grade micro-force interaction for superior compliance, breaks through traditional precision limits, and enhances safety protection mechanisms, positioning itself as a key driver in industrial automation and medical intelligence advancement.

Smooth Dragging

- The CRAF series achieves fingertip-level responsiveness through real-time detection of external force/torque combined with feedforward compensation to neutralize gravity/friction resistance.
- Full-Flange Surface Dragging:** The entire flange serves as an active drag zone for intuitive teaching.
- Orientation-Locked Dragging:** Users can constrain orientation for precise path programming.
- Micro-Force Guidance:** <2N activation force enables sub-millimeter end-effector adjustments.



Precise Operations

- The CRAF series maintains constant contact pressure and grinding force during polishing. Its force feedback enables adaptive grinding on complex curved surfaces, eliminating the need for tedious path programming.
- Complex surface tracking maintains $\pm 3N$ force control accuracy.
- The robot detects environmental changes (like workbench height variations) in real time, automatically locates planes, and adjusts its movements accordingly.



Safe Collaboration

- The CRAF force-control series features exceptional collision sensitivity, ensuring immediate cessation upon accidental impact.
- Detects collisions as subtle as 1N.
- Withstands impacts up to 2000N for robust performance in complex industrial environments



Perfect for Various Applications

The force-controlled collaborative robot has emerged as a pivotal tool for industrial automation and medical intelligence upgrades, driving advancements in precision manufacturing, flexible production, and safe medical rehabilitation therapies.

Polishing

The force-controlled collaborative robot delivers high-precision constant-force output ($\pm 3N$ accuracy) through compliant force control technology, automatically compensating for workpiece dimensional errors and path deviations to adapt to complex surface grinding tasks (e.g., automotive body panels, comprehensive metal components).



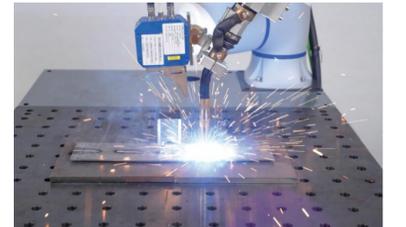
Precision Assembly

In precision assembly operations, the force-sensitive collaborative robot addresses flexible assembly requirements through micro-force detection and adaptive adjustments. By continuously monitoring contact forces in real time, it prevents part damage caused by rigid collisions during delicate component assembly.



Welding

For small-batch, high-variability welding scenarios, the force-controlled collaborative robot features compliant drag-and-teach functionality that significantly reduces programming complexity for on-site operators.



Healthcare

In healthcare applications, the robot enables precise operations through safe, compliant interaction. For limb rehabilitation, it guides patients' arms/legs through traction exercises. In operating rooms, when equipped with endoscopic cameras, the robot allows rapid positioning to magnify surgical sites on displays, assisting physicians during procedures.



Other Collaborative Scenarios

The solution excels in safety-critical collaborative environments. Traditional robots like the CR20A, with their bulky structures, generate excessive collision forces even with current-loop detection. Our integrated end-effector force sensors dramatically reduce impact forces during human-robot interaction.

