*Measured results: DOBOT SafeSkin can avoid collision when the robot moves at a low to medium speed; it can reduce collision damage by 90% when the robot moves at a high pace, so it conforms to the safety standard of a collaborative robots.

Product Specifications

Model	SafeSkin
Sense Type	Proximity and contact
Sensing Targets	Human bodies, metals, liquids, etc. (Less effective with non-conductive items)
Installation Location	J4, J5, J6 recommended
Effective Sense Range	5 ~ 15 cm (varies based on installation location)
Sensing Cycle Time	0.01 s
Emergency Stop Execution Time	0.1 s
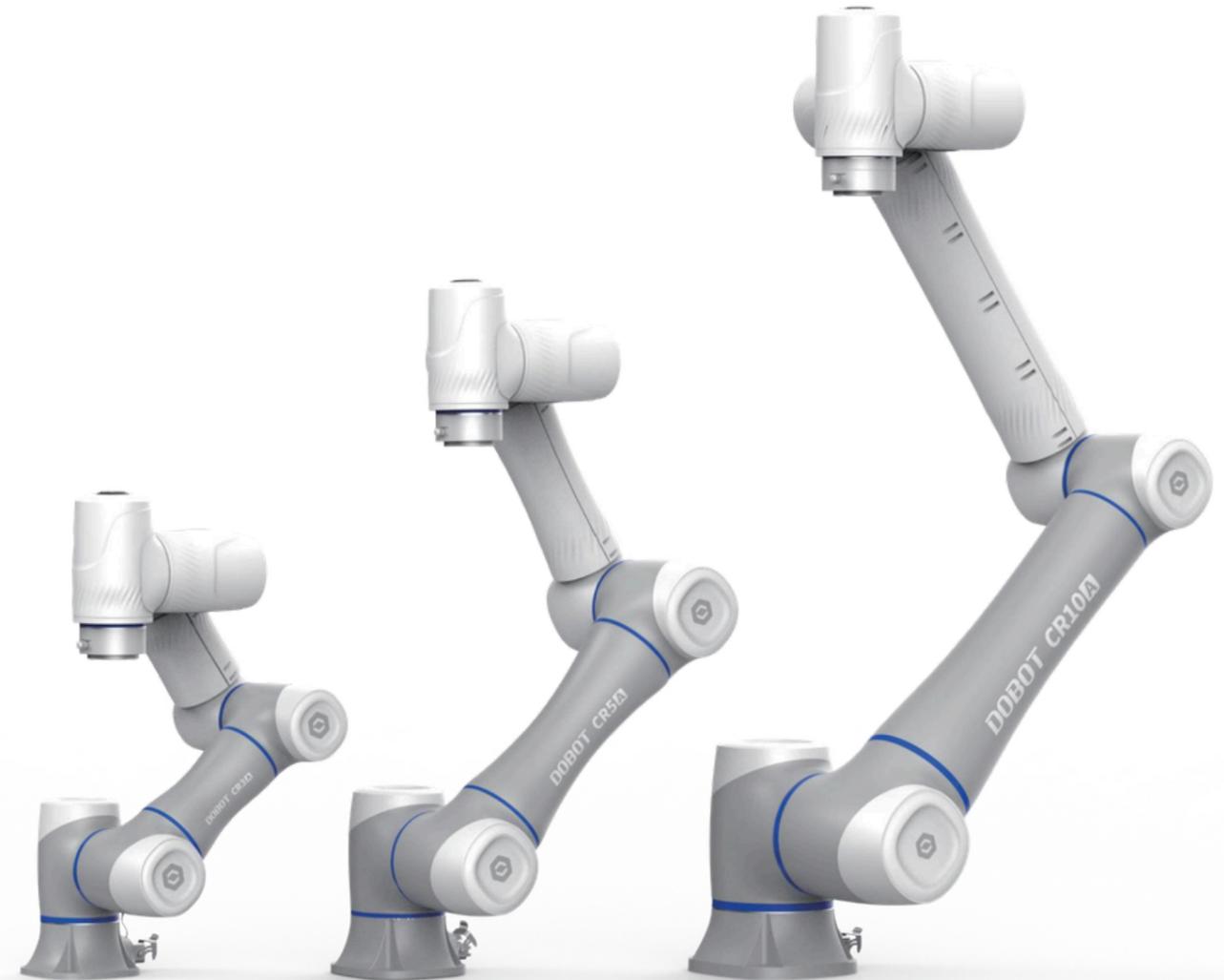
DOBOT SafeSkin

The SafeSkin is a silicone wearable wrap made for the DOBOT CR series collaborative robots to enable pre-collision detection functionality. It is characterized by extensive surface coverage, long sensing distance, quick response time, and strong interference resistance. Unlike the standard collision detection solutions for collaborative robots, the SafeSkin is designed to prevent collision before it happens, rather than stopping the robot after collision has occurred. The SafeSkin further improves the safety level of collaborative robots while ensuring performance efficiency as it can intelligently work around obstacles and continue operation without stopping.

Key Features

Pre-collision Detection.

The SafeSkin pre-collision detection system incorporates Dobot's proprietary technology that senses for changes in electromagnetic field and does not require the use of vision sensors, making the solution cost effective as it relies more on software than hardware. The SafeSkin can detect foreign objects that come within 15 cm of range.

Active Evasion Maneuver.

Once foreign objects are detected, the SafeSkin responds within 0.01 second to initiate evasion maneuver and prevent collision from happening. If evasion is not possible, the robotic arm will stop within 0.1 second to ensure the safety of the robot and the surrounding objects.

Durable Materials.

The elastic silicone wrap is easy to install and transfer to other robots. As it covers the entire front portion of a robotic arm, it senses 360 degrees for obstacles from all directions to provide optimal safety. When the robot is powered off, the soft silicone wrap provides a safe physical cushion that protects the robot and colliding objects.
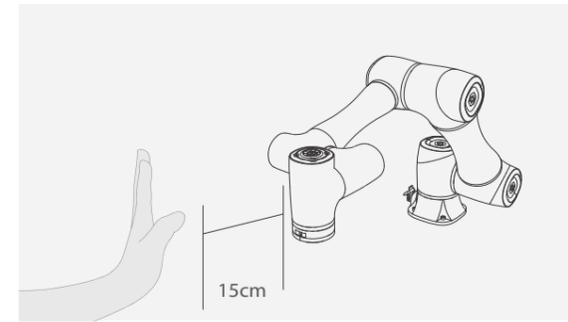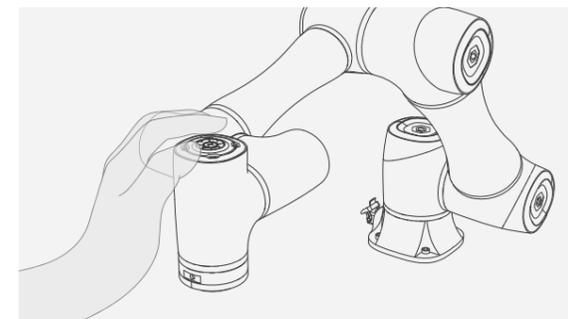
Long Sensing Distance.

15 cm sensing distance offers a balanced solution to ignore objects far away while focusing on the automation task and approaching objects.

Quick Response Time.

0.01 second response time to plan optimal dynamic evasion route and initiate maneuver while taking in real time data for reaction optimization.
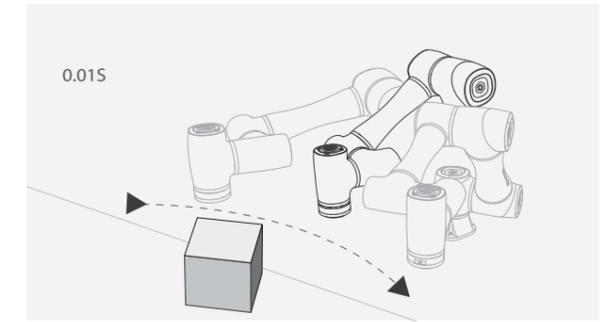
Strong Interference Resistance.

Dobot's proprietary software separates noise from signals, allowing the SafeSkin to be highly interference resistant and can work properly in various operating environment.
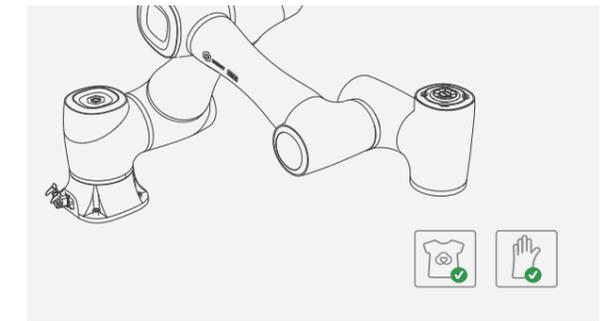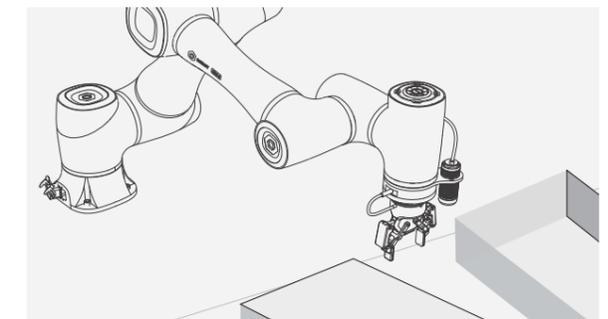
All-round Safety.

Workers with protective equipment such as clothing and gloves can still be detected by the SafeSkin.

Quick Installation.

The tailor made elastic silicone material is easy to put on robots and fits seamlessly.

Efficient Performance.

The SafeSkin actively works around obstacles to ensure continued operation. Fewer robot halts result in higher operating efficiency.