IRB 7710, IRB 7720

16 large, high-performing robot variants to meet diverse customer needs

The IRB 7710 and IRB 7720 come with a heightened focus on efficient modular design and energy savings of up to 30%[1], while delivering world-class performance and quality. They include 16 variants with payloads ranging from 280kg to 620kg, responding to customer demands for enhanced flexibility and sustainable production.

Key benefits

1. **Productivity:** robots achieve class-leading motion control with path accuracy down to 0.6mm at high speeds of up to 1600mm/s.
2. **Flexibility:** 16 different variants empower customers to select the ideal robot for various applications.
3. **Energy savings:** IRB 7710 combined with OmniCore has 30% less energy consumption[1].
4. **Uptime:** LeanID DressPack eliminates swinging cables and supports off-line programming to enhance uptime.

Greater flexibility and choice

As manufacturers ramp up production, they can choose from a wide range of ABB robots to ensure they have the right variant to handle various applications across a wide range of industries such as automotive, agriculture machinery, construction, and logistics, as well as mega casting in the foundry industry.

Unmatched productivity and quality

Powered by OmniCore V400XT, the IRB 7710 and IRB 7720 achieve class-leading motion control with path accuracy down to 0.6mm, even with multiple robots running at high speeds of up to 1600mm/s and moving payloads of up to 450kg. Customers can also benefit from an up to 25% reduction in cycle times[1] further enhancing productivity and quality.

Energy savings by up to 30%

Helping customers operate more sustainably, IRB 7710 combined with OmniCore has 30%[1] less energy consumption. This is achieved by the robot's efficient design and the OmniCore™ energy re-generation technology and built-in power pack can relay energy back to the grid.

Efficient modular design

These large robots are based on the same groundbreaking modular design, with standardized components across all large robot platforms, including the base, lower arm, and upper arm. All of the robots now have the same footprint, enabling faster, more convenient, and more flexible installation when changing robots in different production lines.

Target industries: automotive, agriculture machinery, construction, logistics, and foundry.

Target applications

1. High-payload assembly and handling, such as EV batteries, foundry parts, or cabins for the above mentioned industries.
2. High-speed press tending and palletizing, such as car doors, frames, boxes, and pallets.
3. High-precision and stiffness contact applications, such as friction stir welding for battery trays, machining.

[1] IRB 7710 compared with its predecessor IRB 7600 running in the same payload of 500kg on the previous controller IRC5.

Specification

Robot version	Reach (m)	Handling capacity (kg)*	Center of gravity (mm)	Wrist torque (Nm)
IRB 7710-500/2.85	2.85	500	360	3027
IRB 7710-430/3.1	3.1	430	360	3027
IRB 7710-360/3.3	3.3	360	360	3027
IRB 7710-310/3.5	3.5	310	360	3027
IRB 7710-400/2.85 LID	2.85	400	360	2994
IRB 7710-390/3.1 LID	3.1	390	360	2994
IRB 7710-325/3.3 LID	3.3	325	360	2994
IRB 7710-280/3.5 LID	3.5	280	360	2994
IRB 7720-620/2.9	2.9	620	400	4635
IRB 7720-530/3.1	3.1	530	400	4635
IRB 7720-510/3.3	3.3	510	400	3027
IRB 7720-450/3.5	3.5	450	400	3027
IRB 7720-560/2.9 LID	2.9	560	400	4586
IRB 7720-480/3.1 LID	3.1	480	400	4586
IRB 7720-400/3.3 LID	3.3	400	400	2994
IRB 7720-400/3.5 LID	3.5	400	400	2994
Number of axes				6
Protection				
Standard				IP67
Option: Foundry Plus				IP67
Mounting				Floor
Controller				OmniCore V400XT

* LID versions include dresspack, other versions allow 50kg extra load on upper arm

Performance (according to ISO 9283)

	Position repeatability	Path repeatability
IRB 7710-500/2.85	0.06 mm	0.10 mm
IRB 7710-430/3.1	0.10 mm	0.14 mm
IRB 7710-360/3.3	0.07 mm	0.21 mm
IRB 7710-310/3.5	0.06 mm	0.23 mm
IRB 7720-620/2.9	0.06 mm	0.07 mm
IRB 7720-530/3.1	0.05 mm	0.07 mm
IRB 7720-510/3.3	0.05 mm	0.29 mm
IRB 7720-450/3.5	0.06 mm	0.21 mm

Technical information

Electrical Connections	
Supply voltage	380 - 480 VAC, 50/60 Hz
Power consumption*	
IRB 7710	2.7-3.1 kW
IRB 7720	2.3-2.8 kW

* ISO-cube at max performance depending on robot version

Physical	
Robot base	1020 x 795 mm
Robot weight	
IRB 7710-500/2.85	2130 kg
IRB 7710-430/3.1	2160 kg
IRB 7710-360/3.3	2170 kg
IRB 7710-310/3.5	2180 kg
IRB 7710-400/2.85 LID	2210 kg
IRB 7710-390/3.1 LID	2230 kg
IRB 7710-325/3.3 LID	2240 kg
IRB 7710-280/3.5 LID	2250 kg
IRB 7720-620/2.9	2590 kg
IRB 7720-530/3.1	2620 kg
IRB 7720-510/3.3	2540 kg
IRB 7720-450/3.5	2550 kg
IRB 7720-560/2.9 LID	2670 kg
IRB 7720-480/3.1 LID	2690 kg
IRB 7720-400/3.3 LID	2620 kg
IRB 7720-400/3.5 LID	2630 kg

Environment	
Ambient temperature for mechanical unit	
During operation	+5°C (41°F) to +50°C (122°F)
During transportation and storage	-25°C (13°F) to +55°C (131°F)
During short periods (max 24 hours)	up to +70°C (158°F)
Relative humidity	Max 95%
Noise level	70-72 dB (A)L_{eq} 70 dB (A) for IRB 7720 72 dB (A) for IRB 7710
Safety	Double circuits with supervision, emergency stops and safety functions, 3-position enable device
Extended safety	SafeMove2
Emission	EMC/EMI-shielded
Main options	Foundry Plus Dresspack

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Movement

Working range	Axis 1*	Axis 2	Axis 3	Axis 4	Axis 5	Axis 6
IRB 7710-500/2.85 IRB 7710-430/3.1 IRB 7710-360/3.3 IRB 7710-310/3.5	±170°	-65°/+85.2°	-27°/+130°	±300°	±130°	±360°
IRB 7710-400/2.85 LID IRB 7710-390/3.1 LID IRB 7710-325/3.3 LID IRB 7710-280/3.5 LID	±170°	-65°/+85.2°	-27°/+130°	±300°	±120°	±220°
IRB 7720-620/2.9 IRB 7720-530/3.1 IRB 7720-510/3.3 IRB 7720-450/3.5	±170°	-65°/+82.2°	-27°/+130°	±300°	±130°	±360°
IRB 7720-560/2.9 LID IRB 7720-480/3.1 LID IRB 7720-400/3.3 LID IRB 7720-400/3.5 LID	±170°	-65°/+85.2°	-27°/+130°	±300°	±120°	±220°

* Option ±220°

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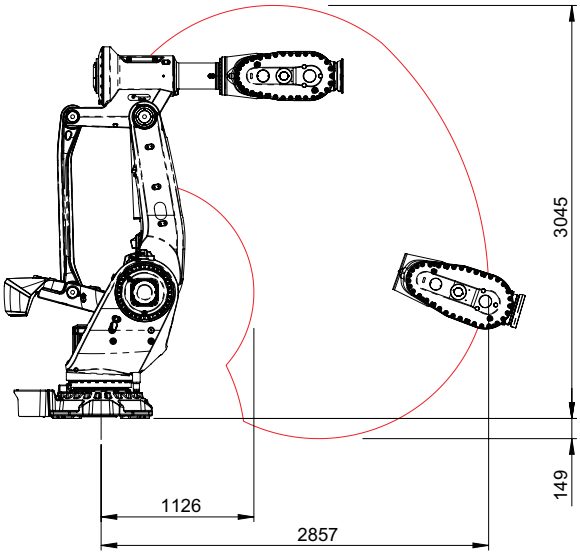
Axis max speed

	Axis 1	Axis 2	Axis 3	Axis 4	Axis 5	Axis 6
IRB 7710-500/2.85	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-430/3.1	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-360/3.3	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-310/3.5	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-400/2.85 LID	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-390/3.1 LID	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-325/3.3 LID	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7710-280/3.5 LID	90°/s	60°/s	60°/s	100°/s	100°/s	160°/s
IRB 7720-620/2.9	75°/s	60°/s	55°/s	100°/s	100°/s	150°/s
IRB 7720-530/3.1	75°/s	60°/s	55°/s	100°/s	100°/s	150°/s
IRB 7720-510/3.3	75°/s	60°/s	55°/s	100°/s	100°/s	160 °/s
IRB 7720-450/3.5	75°/s	60°/s	55°/s	100°/s	100°/s	160 °/s
IRB 7720-560/2.9 LID	75°/s	60°/s	55°/s	100°/s	100°/s	150°/s
IRB 7720-480/3.1 LID	75°/s	60°/s	55°/s	100°/s	100°/s	150°/s
IRB 7720-400/3.3 LID	75°/s	60°/s	55°/s	100°/s	100°/s	160 °/s
IRB 7720-400/3.5 LID	75°/s	60°/s	55°/s	100°/s	100°/s	160 °/s

More information about the data specification is found in the Product Specification IRB 7710 and IRB 7720
Data and dimensions may be changed without notice

Working range IRB 7710-500/2.85



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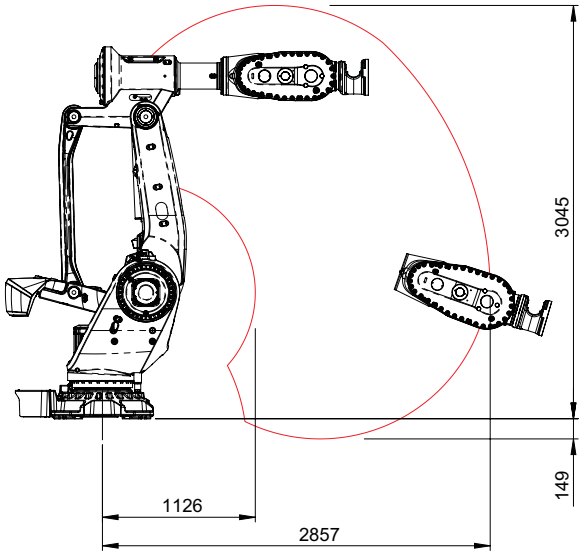
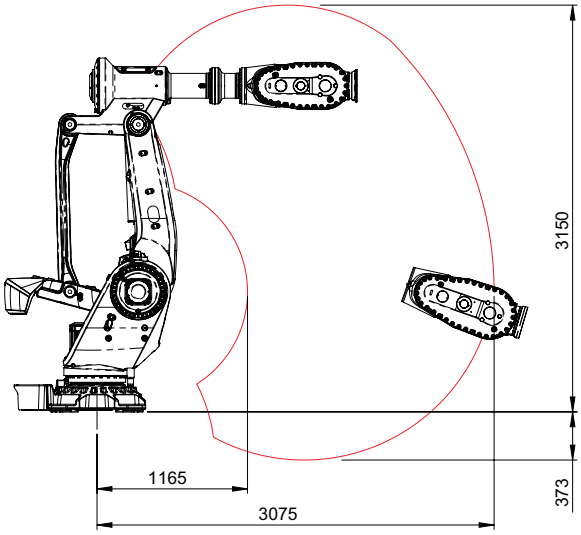


Working range IRB 7710-430/3.1



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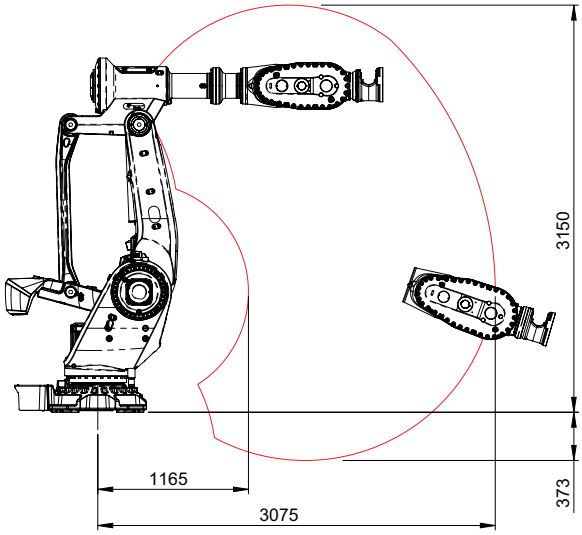

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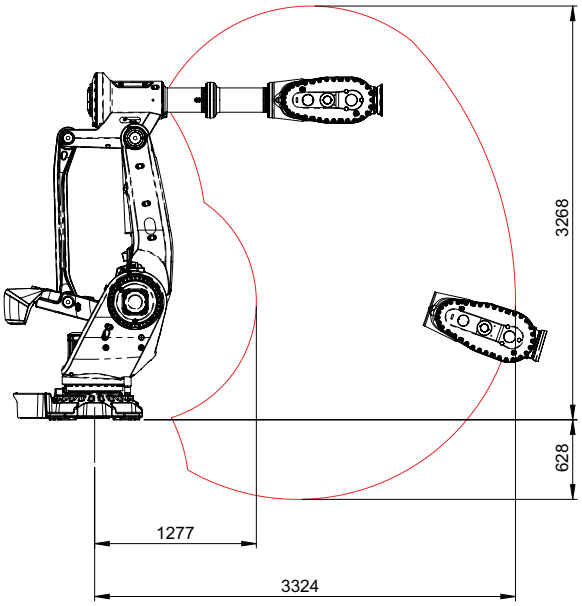

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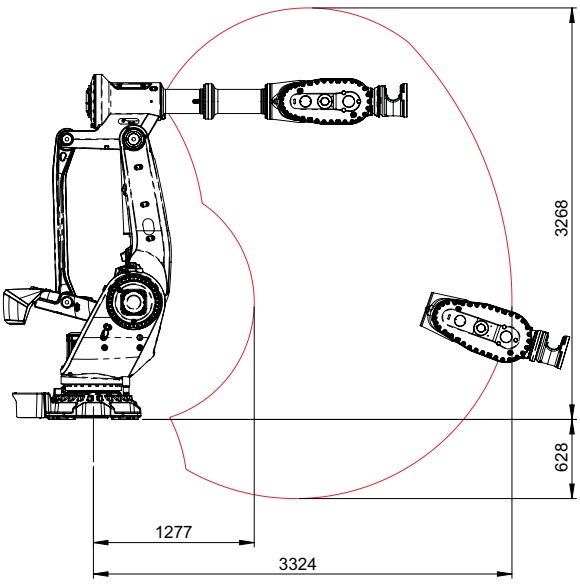

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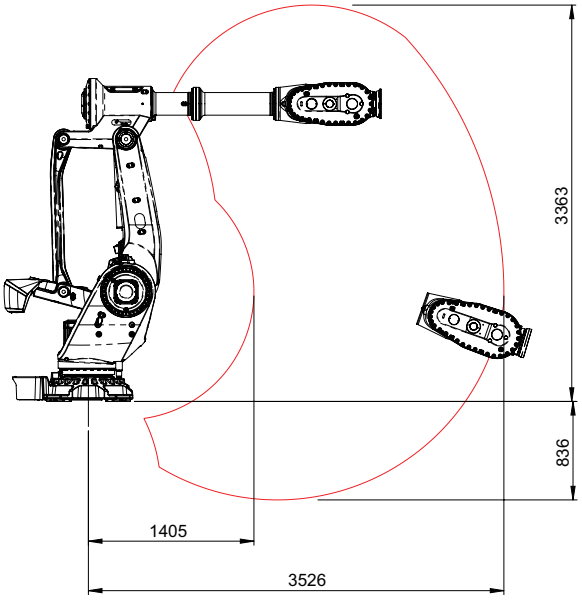

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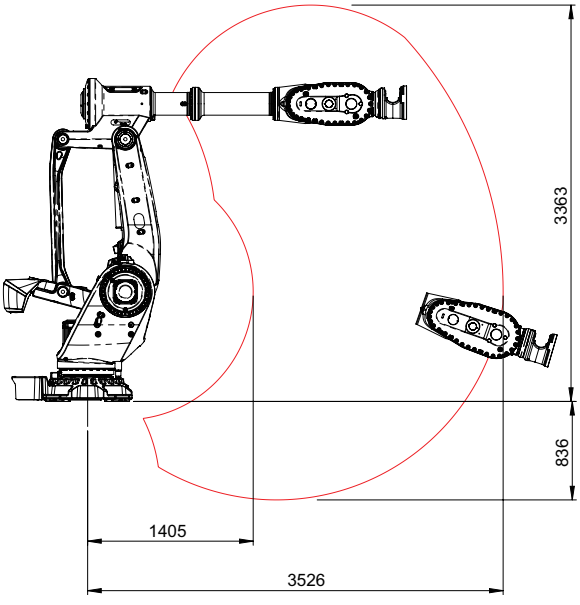

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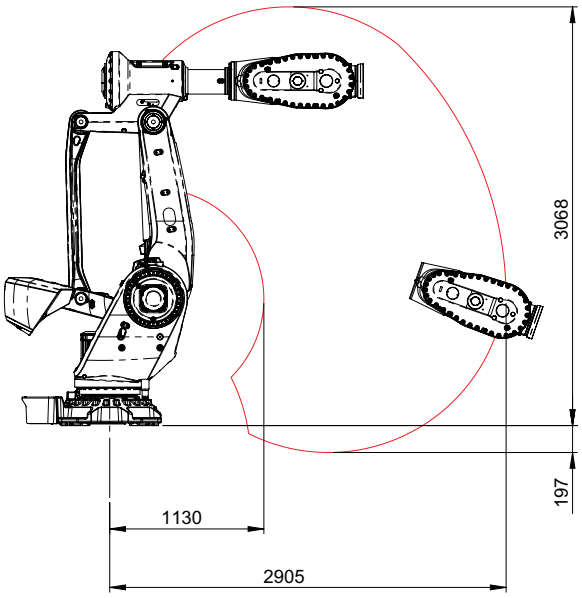

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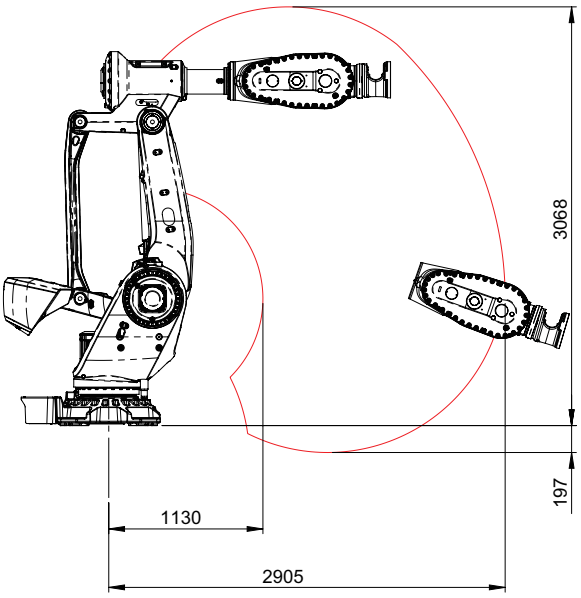

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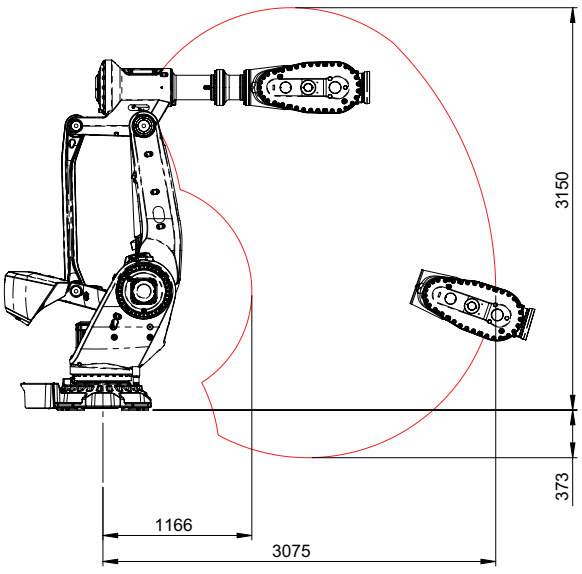

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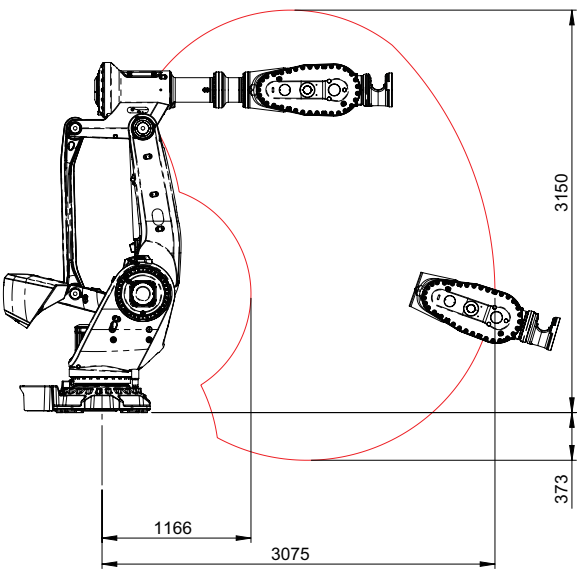
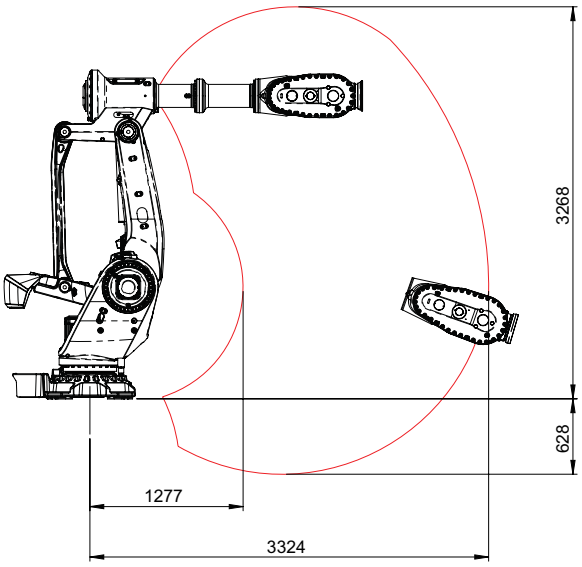


Working range IRB 7720-510/3.3



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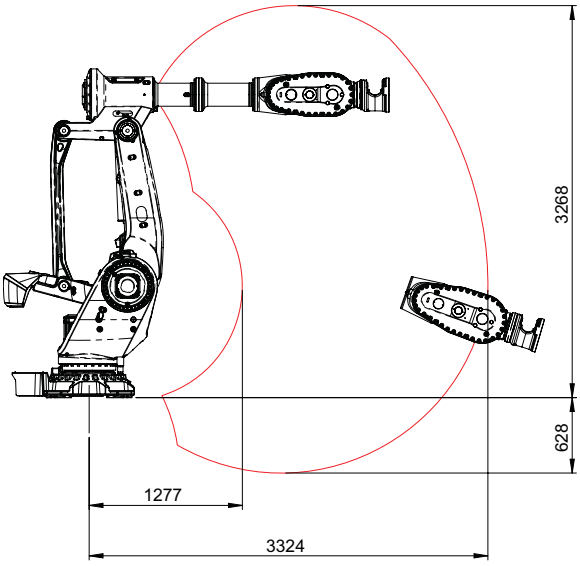

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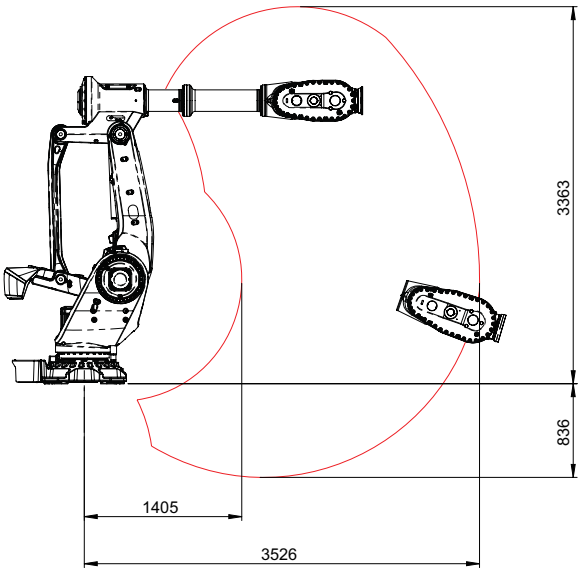

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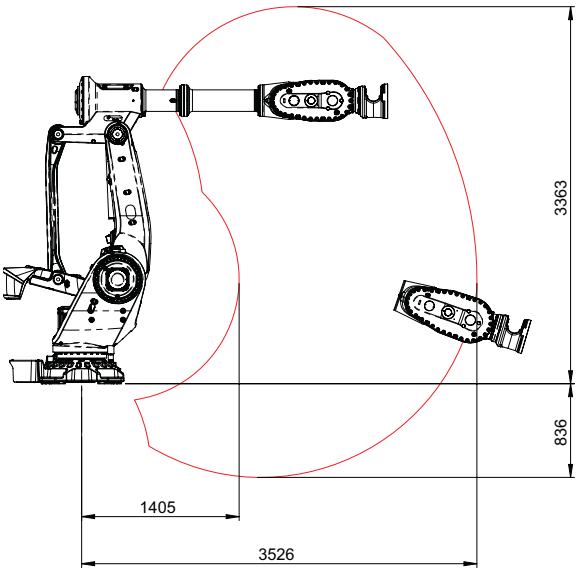

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