

quantity flows out (e.g. inclined installation), the flushing operation must be repeated twice. During the flushing procedure, move the axis at jog velocity throughout the entire axis range.

The oil quantities specified in the table correspond to the oil quantities in the gear unit at first filling.

Oil type	
A1	Optigear Synt. ALR 150
A2	Optigear Synt. ALR 150
A3	Optigear Synt. ALR 150
A4	Optigear Synt. ALR 150
A5 / A6	Optigear Synt. ALR 150
Gear oil new filling quantity	
A1	5.70 l
A2	2.10 l
A3	1.40 l
A4	2.10 l
A5 / A6	1.90 l

Counterbalancing system

Gas pressure p0	156 bar
Oil pressure p1 (setpoint value)	176 bar
Oil pressure p1 (min)	169.3 bar

The oil pressure p1 refers to axis position A2 = -90° and component temperature 20 °C (293 K).

Technical data



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Basic data

	KR 250 R2700-2 F
Number of axes	6
Number of controlled axes	6
Volume of working envelope	56.3 m ³
Pose repeatability (ISO 9283)	± 0.05 mm
Weight	approx. 1101 kg
Rated payload	250 kg
Maximum payload	315 kg
Maximum reach	2701 mm
Protection rating (IEC 60529)	IP65 / IP67
Protection rating, robot wrist (IEC 60529)	IP65 / IP67
Sound level	< 75 dB (A)
Mounting position	Floor
Footprint	754 mm x 754 mm
Hole pattern: mounting surface for kinematic system	S780
Permissible angle of inclination	± 5 °
Default color	Base frame: black (RAL 9005); Moving parts: KUKA Industrial Orange (RAL 2009)
Controller	KR C5 M6/M7; KR C4
Transformation name	KR C4: KR250R2700_2 C4 FLR; KR C5: KR250R2700_2 C4 FLR

Ambient conditions

Humidity class (EN 60204)	-
Classification of environmental conditions (EN 60721-3-3)	-
Cleanroom class (ISO 14644-1)	-
Ambient temperature	
During operation	0 °C to 55 °C (273 K to 328 K)
During storage/transportation	-40 °C to 60 °C (233 K to 333 K)



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Axis data

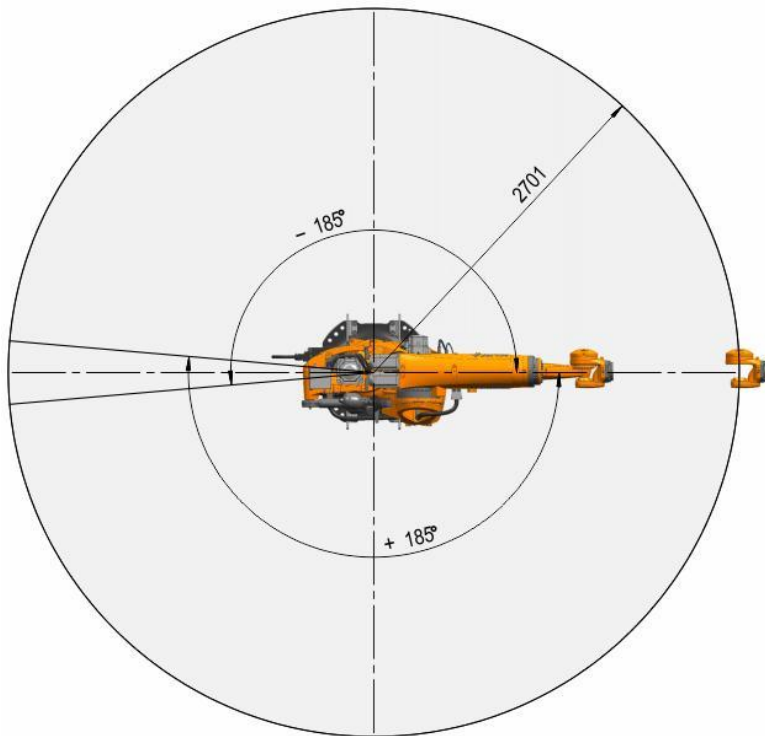
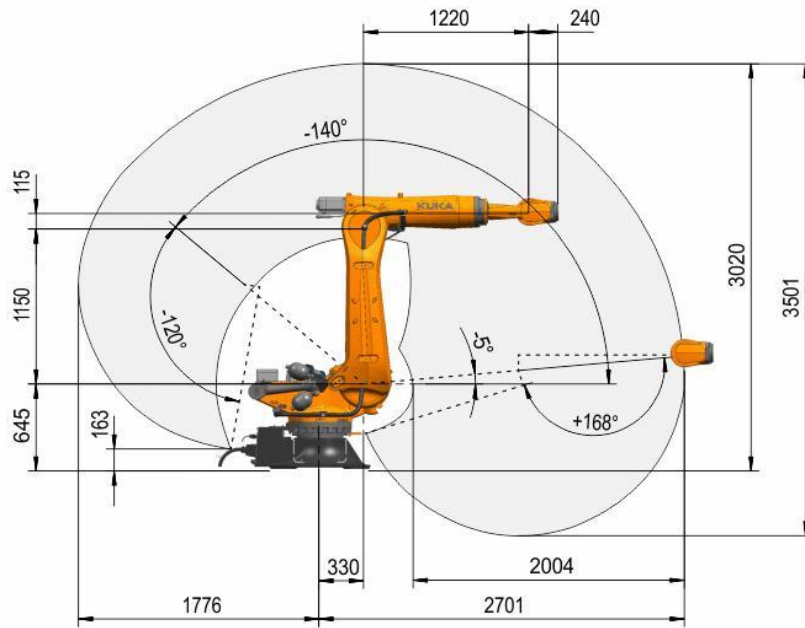
Motion range	
A1	$\pm 185^\circ$
A2	$-140^\circ / -5^\circ$
A3	$-120^\circ / 168^\circ$
A4	$\pm 350^\circ$
A5	$\pm 122.5^\circ$
A6	$\pm 350^\circ$
Speed with rated payload	
A1	105 °/s
A2	107 °/s
A3	107 °/s
A4	170 °/s
A5	129 °/s
A6	206 °/s



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Working envelope

Dimensions: mm



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KR 250 R2700-2 F , working envelope, overall

Payloads

Rated payload	250 kg
Maximum payload	315 kg
Rated supplementary load, base frame	0 kg
Maximum supplementary load, base frame	0 kg
Rated supplementary load, rotating column	0 kg



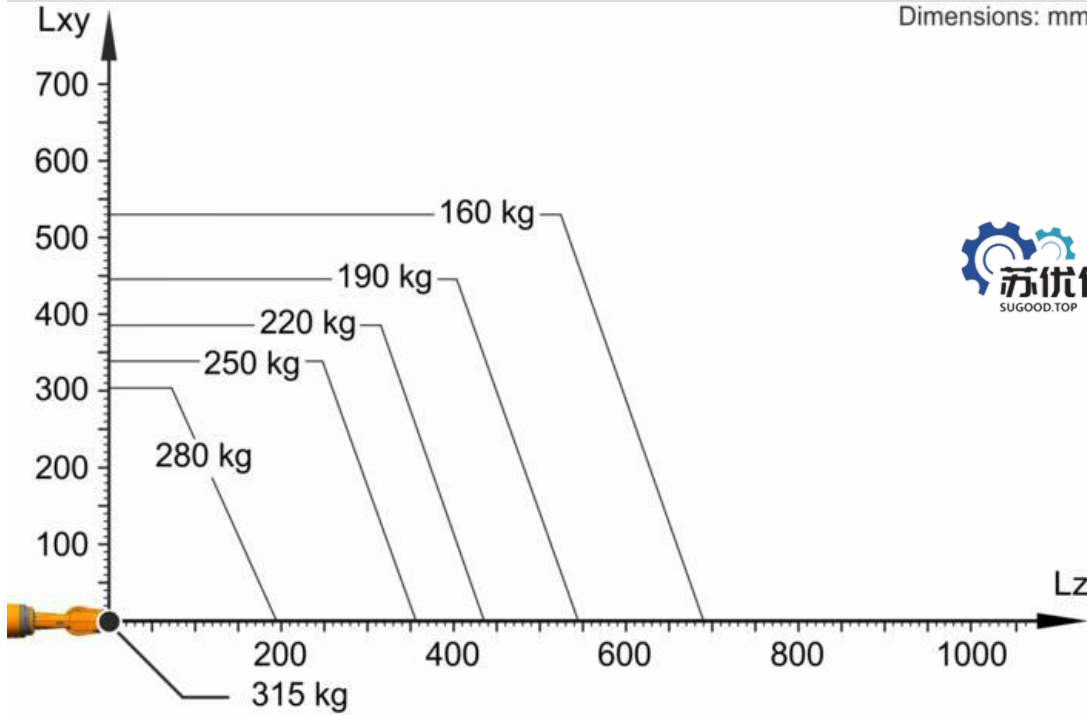
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Maximum supplementary load, rotating column	300 kg
Rated supplementary load, link arm	0 kg
Maximum supplementary load, link arm	130 kg
Rated supplementary load, arm	50 kg
Maximum supplementary load, arm	150 kg

Dimensions: mm



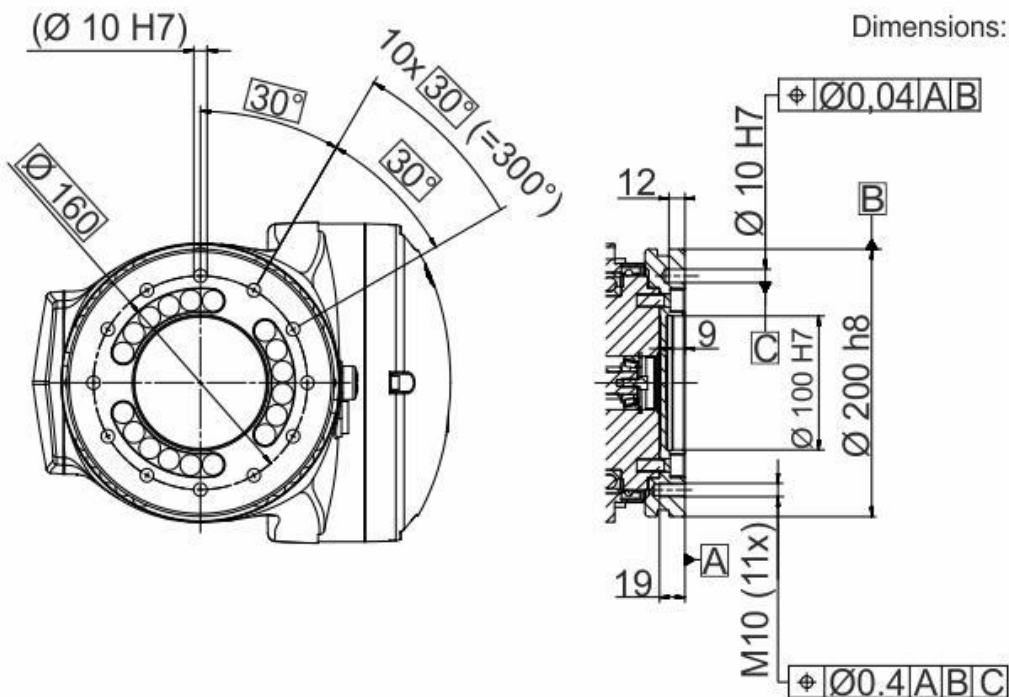
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Payload diagram, KR 250 R2700-2 F

Mounting flange

Robot wrist type	ZH300 F
Mounting flange standard	Deviation, see figure

Dimensions: mm



Mounting flange D=160

Foundation loads, KR 250 R2700-2 F

Depending on the payload (e.g. tool), supplementary load and the robot's own mass (weight), the motion of the robot generates forces and torques which are transmitted to the foundation.

The specified values refer to nominal payloads and do not include any safety factors. The actual forces and torques depend on the motion profile as well as the mass, load center of gravity and mass moment of inertia of the payload. It is imperative for the load data to be entered in the robot controller. The robot controller takes the payload into consideration during path planning.

Supplementary loads on A1 (rotating column) and A2 (link arm) are not taken into consideration in the calculation of the foundation load. These must be taken into account in the vertical force (F_v).

The foundation must be able to permanently withstand the forces and torques generated during normal operation.

The EMERGENCY STOP values only rarely occur during the service life of the robot (emergency situations). The frequency depends on the configuration of the system.



WARNING

Danger to life and limb due to insufficient stability of the foundation

An incorrectly dimensioned foundation can fracture and fail. Death, severe injuries or damage to property may result.

- Calculate the foundation loads for each individual case.
- Use the specified installation equipment.

Vertical force $F(v)$	
F(v normal)	18164 N
F(v max)	24033 N
Horizontal force $F(h)$	
F(h normal)	7626 N
F(h max)	20063 N
Tilting moment $M(k)$	
M(k normal)	22790 Nm
M(k max)	38237 Nm
Torque about axis 1 $M(r)$	
M(r normal)	7817 Nm
M(r max)	17833 Nm



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