Simple and friendly

Kawasaki Robot

EUROPE

R-SERIES

up to 80 kg payload

»Simple and friendly«
INTO THE FUTURE

Kawasaki Robotics invents itself anew. As innovative robot generation, the R-SERIES meets the increasing demands of its customers.

»40 years of experience and state-of-the-art robot technology«

An extremely compact and light-weight design forms the basis for high speeds and rigidity as well as an enormous reach.

»Your goal is our task«

It was Kawasaki's intelligence and flexibility which made them build the most powerful robots in their class. Combined with a high-end control system, they reliably meet the demands of the most varied application fields - now and in the near & far future.

THE R-SERIES

1. High speed

Maximum acceleration and speed through the consistent utilization of highoutput motors following an innovative and light-weight design. The acceleration is automatically matched to the carried load and position of the robot. In this way, the best possible performance and optimum cycle times are granted and achieved.

2. Torque

Extensive gripper designs and bulky workpieces cause no problem at all. This leaves more room for creative solutions.

3. Workspace

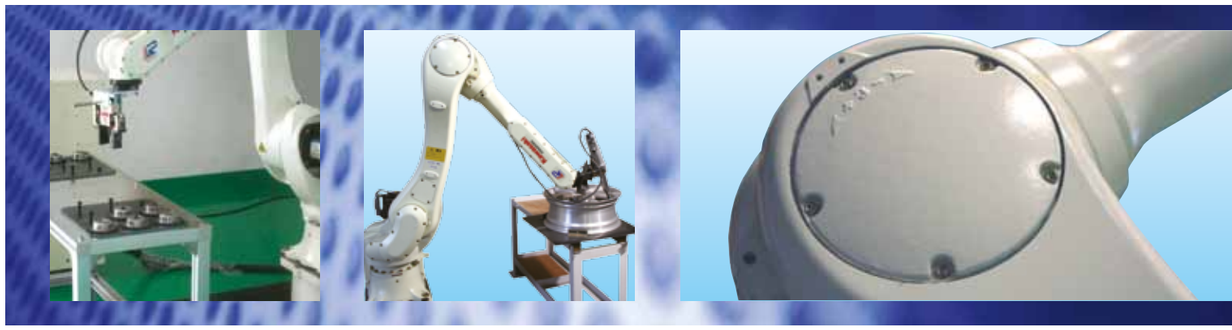
The large reach in the individual weight classes allow for high flexibility in practice.

4. Protection

Double sealings at the hand axes 4 - 6 make the robot qualify for protection class IP67. Axes 1 - 3 fulfill the requirements of protection class IP65 (optional: IP67).

5. Functions

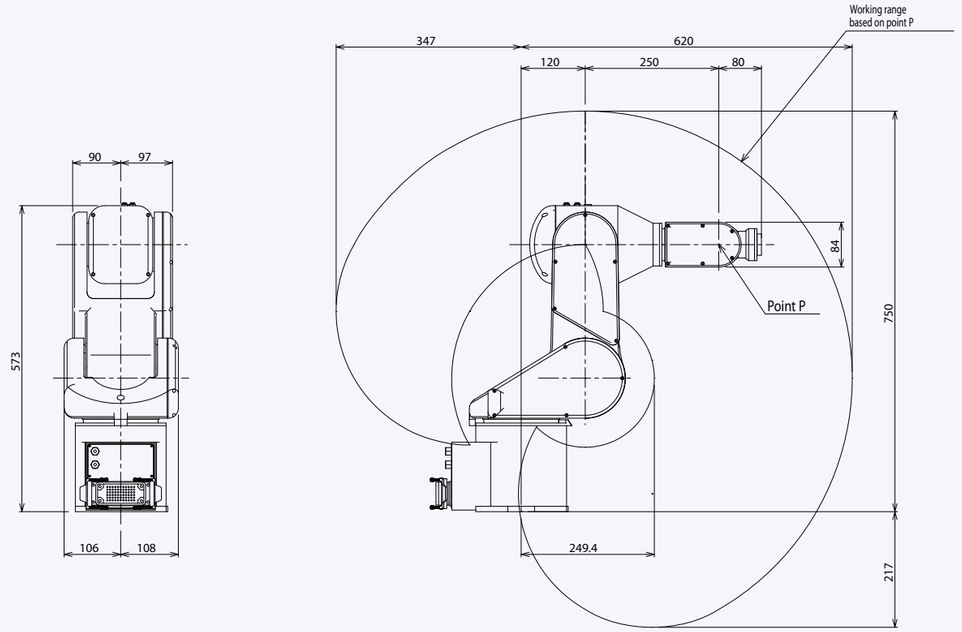
Signal lines and air hoses integrated in the robot arm allow for the direct connection of e.g. grippers without additional wiring through or at the robot arm. Additionally required lines or hoses may of course be assembled at the provided fastening points in a »simple and friendly« way.



MODEL		RS003N	RS005N	RS005L	RS006L	RS010N	RS010L	RS015X	RS020N	RS030N	RS050N	RS080N
Degrees of Freedom		6 Achsen							6 Achsen			
Maximal Reach*1		620 mm	705 mm	903 mm	1650 mm	1450 mm	1925 mm	3150 mm	1725 mm	2100 mm	2100 mm	2100 mm
Maximum Payload		3 kg	5 kg	5 kg	6 kg	10 kg	10 kg	15 kg	20 kg	30 kg	50 kg	80 kg
Maximum Stroke	Axis 1	±160 °	±180 °	±180 °	±180 °	±180 °	±180 °	±180 °	±180 °	±180 °	±180 °	±180 °
	Axis 2	+150 ° ~ -60 °	+135 ° ~ -80 °	+135 ° ~ -80 °	+145 ° ~ -105 °	+145 ° ~ -105 °	+155 ° ~ -105 °	+140 ° ~ -105 °	+155 ° ~ -105 °	+140 ° ~ -105 °	+140 ° ~ -105 °	+140 ° ~ -105 °
	Axis 3	+120 ° ~ -150 °	+118 ° ~ -172 °	+118 ° ~ -172 °	+150 ° ~ -163 °	+150 ° ~ -163 °	+150 ° ~ -163 °	+135 ° ~ -155 °	+150 ° ~ -163 °	+135 ° ~ -155 °	135 ° ~ -155°	135 ° ~ -155°
	Axis 4	±360 °	±360 °	±360 °	±270 °	±270 °	±270 °	±360 °	±270 °	±360 °	±360 °	±360 °
	Axis 5	±135 °	±145 °	±145 °	±145 °	±145 °	±145 °	±145 °	±145 °	±145 °	±145 °	±145 °
	Axis 6	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °	±360 °
Maximum Speed	Axis 1	360 °/s	355 °/s	300 °/s	250 °/s	250 °/s	190 °/s	180 °/s	190 °/s	180 °/s	180 °/s	180 °/s
	Axis 2	250 °/s	355 °/s	300 °/s	250 °/s	250 °/s	205 °/s	180 °/s	205 °/s	180 °/s	180 °/s	180 °/s
	Axis 3	225 °/s	410 °/s	300 °/s	215 °/s	215 °/s	210 °/s	200 °/s	210 °/s	185 °/s	185 °/s	160 °/s
	Axis 4	540 °/s	460 °/s	460 °/s	365 °/s	365 °/s	400 °/s	410 °/s	400 °/s	260 °/s	260 °/s	185 °/s
	Axis 5	225 °/s	460 °/s	460 °/s	380 °/s	380 °/s	360 °/s	360 °/s	360 °/s	260 °/s	260 °/s	165 °/s
	Axis 6	540 °/s	740 °/s	740 °/s	700 °/s	700 °/s	610 °/s	610 °/s	610 °/s	360 °/s	360 °/s	280 °/s
Moment	Axis 4	5,8 N·m	12,3 N·m	12,3 N·m	13,0 N·m	22,0 N·m	22,0 N·m	34,0 N·m	45,0 N·m	210,0 N·m	210,0 N·m	336,0 N·m
	Axis 5	5,8 N·m	12,3 N·m	12,3 N·m	13,0 N·m	22,0 N·m	22,0 N·m	34,0 N·m	45,0 N·m	210,0 N·m	210,0 N·m	336,0 N·m
	Axis 6	2,9 N·m	7,0 N·m	7,0 N·m	7,5 N·m	10,0 N·m	10,0 N·m	22,0 N·m	29,0 N·m	130,0 N·m	130,0 N·m	194,0 N·m
Moment of Inertia	Axis 4	0,12 kg·m²	0,4 kg·m²	0,4 kg·m²	0,45 kg·m²	0,7 kg·m²	0,7 kg·m²	0,8 kg·m²	0,9 kg·m²	16,8 kg·m²	28,0 kg·m²	34,0 kg·m²
	Axis 5	0,12 kg·m²	0,4 kg·m²	0,4 kg·m²	0,45 kg·m²	0,7 kg·m²	0,7 kg·m²	0,8 kg·m²	0,9 kg·m²	16,8 kg·m²	28,0 kg·m²	34,0 kg·m²
	Axis 6	0,03 kg·m²	0,12 kg·m²	0,12 kg·m²	0,14 kg·m²	0,2 kg·m²	0,2 kg·m²	0,25 kg·m²	0,3 kg·m²	6,6 kg·m²	11,0 kg·m²	13,7 kg·m²
Repeatability (Measure Point: Middle of Flange Axis 6)		± 0,05 mm	± 0,02 mm	± 0,03 mm	± 0,05 mm	± 0,04 mm	± 0,06 mm	± 0,15 mm	± 0,05 mm	± 0,07 mm	± 0,07 mm	± 0,07 mm
Weight		20 kg	34 kg	35 kg	150 kg	150 kg	230 kg	545 kg	230 kg	555 kg	555 kg	555 kg
Max. linear Speed (Measure Point: Middle of Flange Axis 6)		6.000 mm/s	9.000 mm/s	9.300 mm/s	13.700 mm/s	11.800 mm/s	13,100 mm/s	19.900 mm/s	11.500 mm/s	13,400 mm/s	13,400 mm/s	12,700 mm/s
Controller		E70	E71	E71	E40/E71	E40/E71	E40	E42	E40	E42	E42	E42
Color		Munsell 10GY9/1						Munsell 10GY9/1				
Installation		Floor or Ceiling (optional wallmount)						Floor or Ceiling (optional wallmount)				
Ambient Conditions	Temperature	0 ~ 45 °C						0 ~ 45 °C				
	Humidity	35 ~ 85 % (no Dew, nor Frost allowed)						35 ~ 85 % (no Dew, nor Frost allowed)				
	Vibration	< 0.5 G						< 0.5 G				
	Others	Installation Ambience must be free of: • Inflammable or corrosive Liquid or Gas • Electric Noise Interferences						Installation Ambience must be free of: • Inflammable or corrosive Liquid or Gas • Electric Noise Interferences				
Application Media Upper Arm (RS005 Base)	Input Signals	4	12	12	12	12	12	12	12	12	12	12
	Output Signals	4	8	8	8	8	8	8	8	8	8	8
	Air	2 x Ø 4 mm	2 x Ø 6 mm	2 x Ø 6 mm	2 x Ø 8 mm	2 x Ø 8 mm	2 x Ø 8 mm	2 x Ø 10 mm	2 x Ø 8 mm	2 x Ø 10 mm	2 x Ø 10 mm	2 x Ø 10 mm
Protection Class		Wrist Unit: IP67 / Basic : IP65						Wrist Unit: IP67 / Basic : IP65				

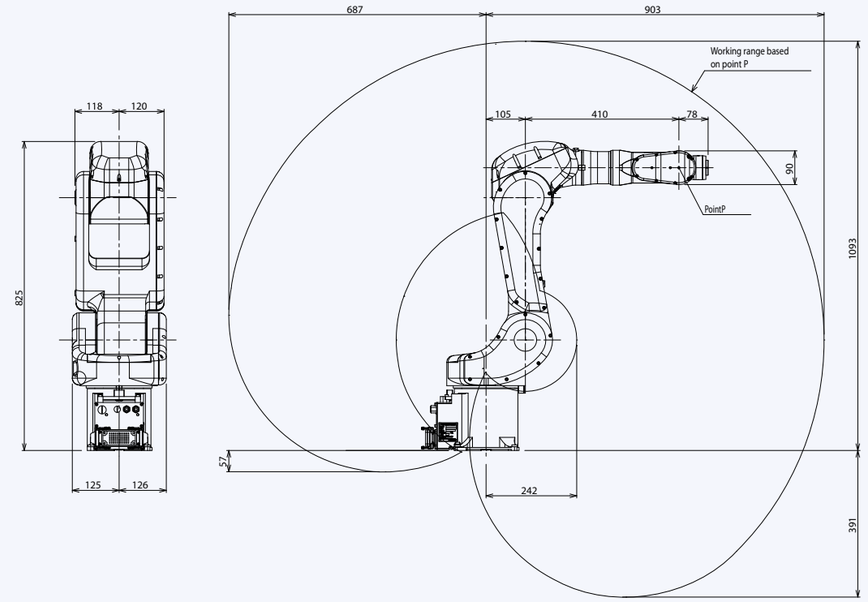
*1 Distance between Centre of Axis 1 and Axis 5.

Motion Range & Dimensions

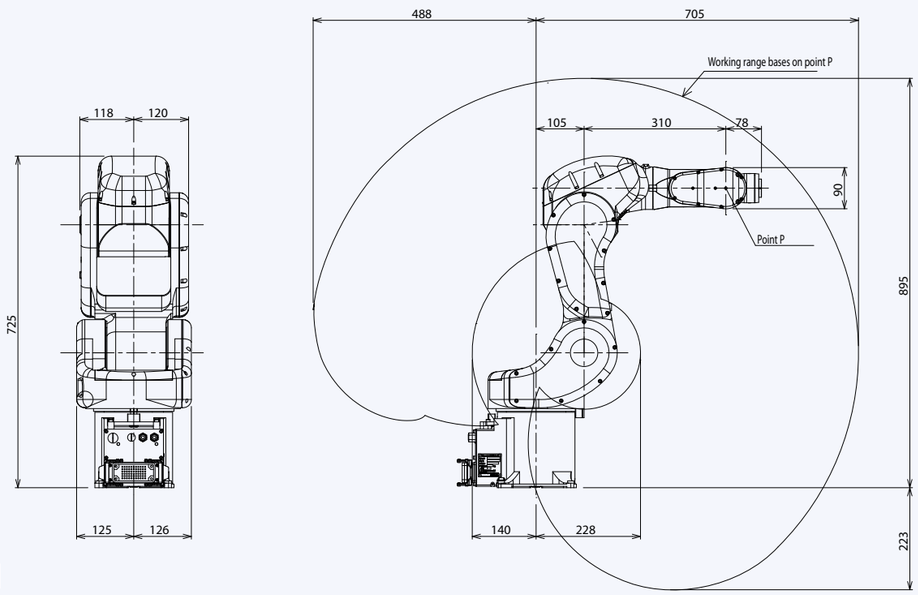


RS003N

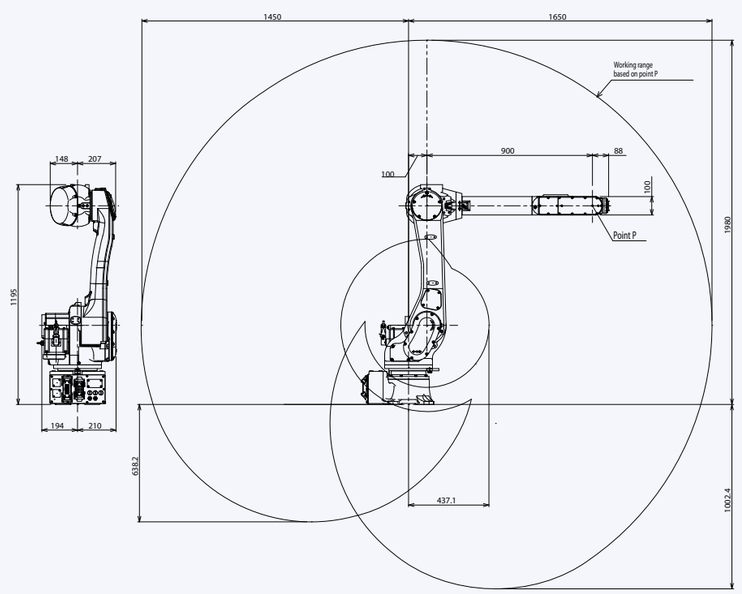
Motion Range & Dimensions



RS005L

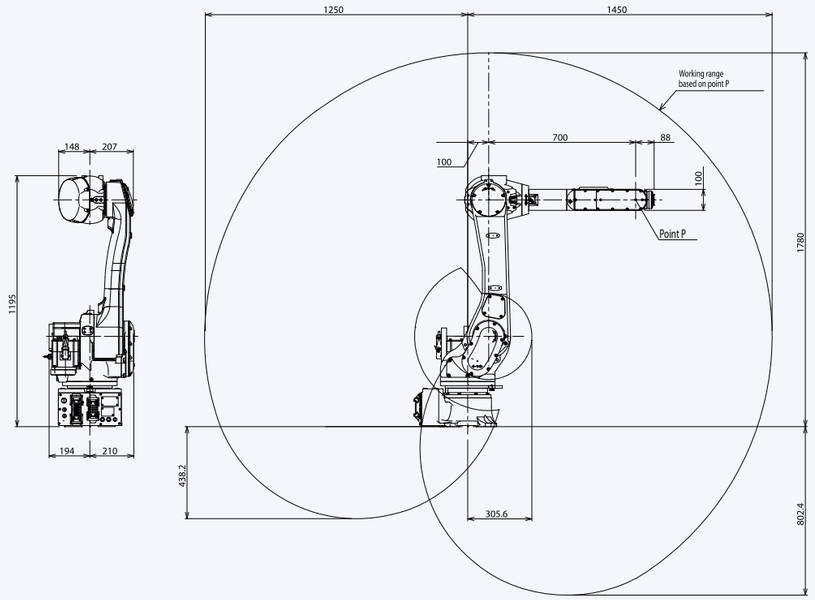


RS005N

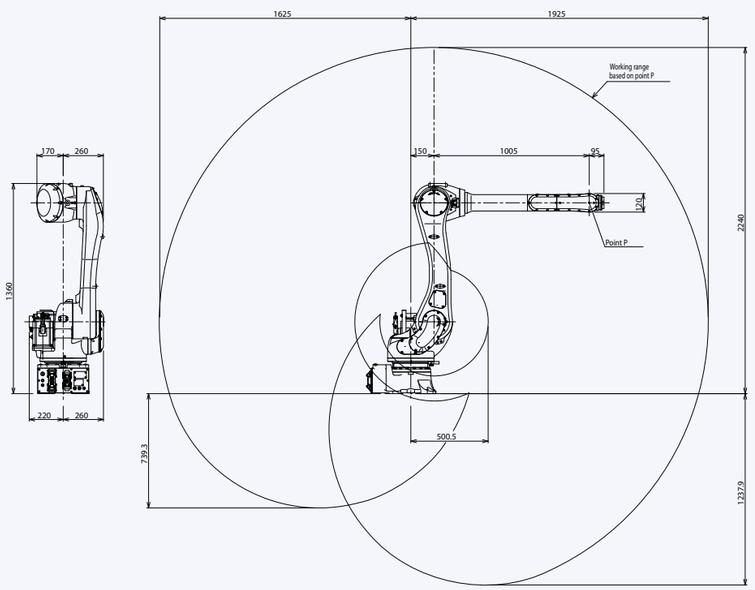


RS006L

Motion Range & Dimensions

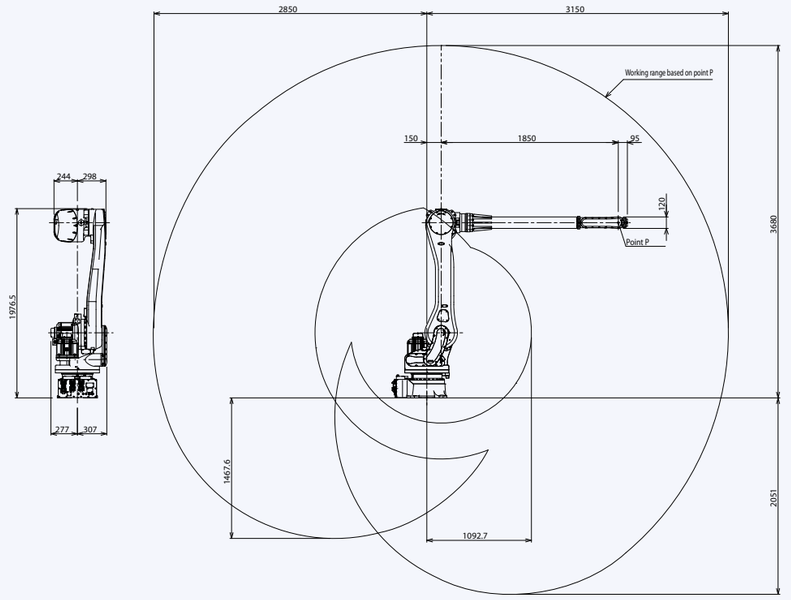


RS010N

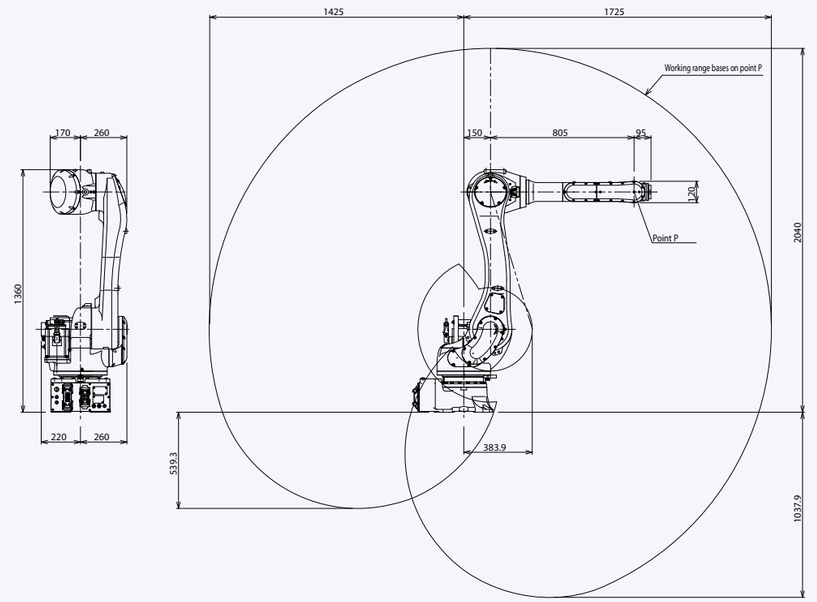


RS010L

Motion Range & Dimensions

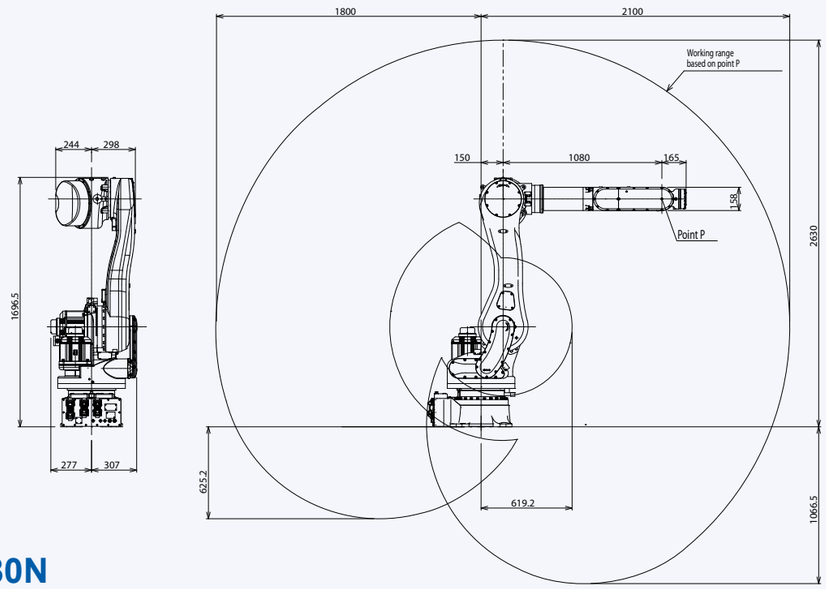


RS015X



RS020N

Motion Range & Dimensions



RS030/050/080N

CONTROLLER

The E-Controller – technically mature, easy to operate and powerful

Compact, upgradeable and user-friendly
A maximum of 10 external axes may be integrated, up to three of which in the controller housing (E4x). All established bus systems (Interbus, Profibus, ProfiNet…) are supported. The integrated Soft PLC may be edited via Teach Pendant or even more comfortably at the PC (option). Custom-tailored user interfaces may be programmed and used for the simplified control of the robot and also peripheral devices. Motor voltage ON and program start may be activated directly via the manual control unit. The parallel display of two information screens (e.g. position and signal data) facilitates the process control.

System
Ultra-fast execution of programs, loading and storing processes as well as a precise continuous-path control and much more thanks to the up-to-date processor design and powerful components. 8 MB RAM (80,000 steps) and USB interface as standard.

Maintenance
»Simple and friendly« – Due to the optimized modular configuration of the Kawasaki control, maintenance work is exceptionally user-friendly. Furthermore integrated service and diagnosis tools guarantee increased safety in operation. Remote diagnosis via Ethernet is also included in the standard package.

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MODEL		E70	E71	E40	E42
Number of Controlled Axes		*6 (optional 8)*		*6 (optional 16)*	
Servo Motors		*Brushless AC Servomotors*			
Position Detectors		*Absolute Encoder*			
Servo System		*Full digital servo system*			
Programming		*Block or AS-Language*			
Coordinate Systems		*Joint, Base, Tool (Option: external Tool)*			
Motion Control		*Joint-, Linear- and Circular interpolated*			
Signals	External	*Motor power, Signal HOLD, etc.*			
	Input	*32 (optional 96)*		*32 (optional 128)*	
	Output	*32 (optional 96)*		*32 (optional 128)*	
	Analogue Input (optional)	*8/16*			
	Analogue Output (optional)	*4/8/12*		*4/8/12/16*	
Memory		*8 MB (ca. 80.000 steps)*			
External Memory		*2 x USB*			
Data Interfaces	PC, Network, etc.	*2 x RS-232C, 2 x Ethernet*			
	Fieldbus (optional)	*DeviceNet®, PROFIBUS®, PROFINET®, INTERBUS-S®, Ethernet/IP®, CC-Link®, CANopen®, Modbus TCP®, Control Net®*			
Teach Pendant		*6.4“ LCD with Touch Panel, Emergency Stop SW, Teach-Lock, Deadman SW, Motor power, Program start, Hold/Run*			
Operation Panel		*Emergency Stop SW, Control Power, TEACH/REPEAT*			
Cable Length (Controller – Arm), (Controller – Teach Pendant)		*10m (Arm: optional up to 40m), (TP: optional up to 30m)*			
Dimensions (WxDxH mm)		*500x420x250*		*550x550x1200*	
Weight (kg)		*30*		*145*	*180*
Power Requirements		*AC 200-240V ± 10%, 50/60Hz, 1 Phase,1,5kVA (E70) / 3kVA (E71)*		*AC 380-415V ± 10%, 50/60Hz, 3 Phases, 4,9kVA (E40) / 9,9kVA (E42)*	
Ground		*<100Ω, Leakage Current ≤ 30mA*		*<100Ω, Max. Leakage Current 10mA*	
Safety Category		*3. Performance Level d (EN ISO13849-1:2008)*			
Ambience Temperature / Humidity		*0-45°C (horizontal) / 0-40°C (vertically), 35-85% (no Dew, nor Frost allowed)*		*0-45°C, 35-85% (no Dew, nor Frost allowed)*	
Surface		*Zinc coated / chromed*		*Color: Munsell 10GY9/1*	

Note: Not all Options can be combined.

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Cautions to be taken to ensure safety

For those persons involved with the operation / service of your system, including Kawasaki Robot, they must strictly observe all safety regulations at all times. They should carefully read the Manuals and other related safety documents.

Products described in this catalogue are general industrial robots. Therefore, if a customer wishes to use the robot for special purposes, which might endanger operators or if the robot has any problems please contact us. We will be pleased to help you.

BE CAREFUL: All photos illustrated in this catalogue are frequently taken after removing safety fences and other safety devices stipulated in the safety regulations from the Robot operation system.

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