

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.

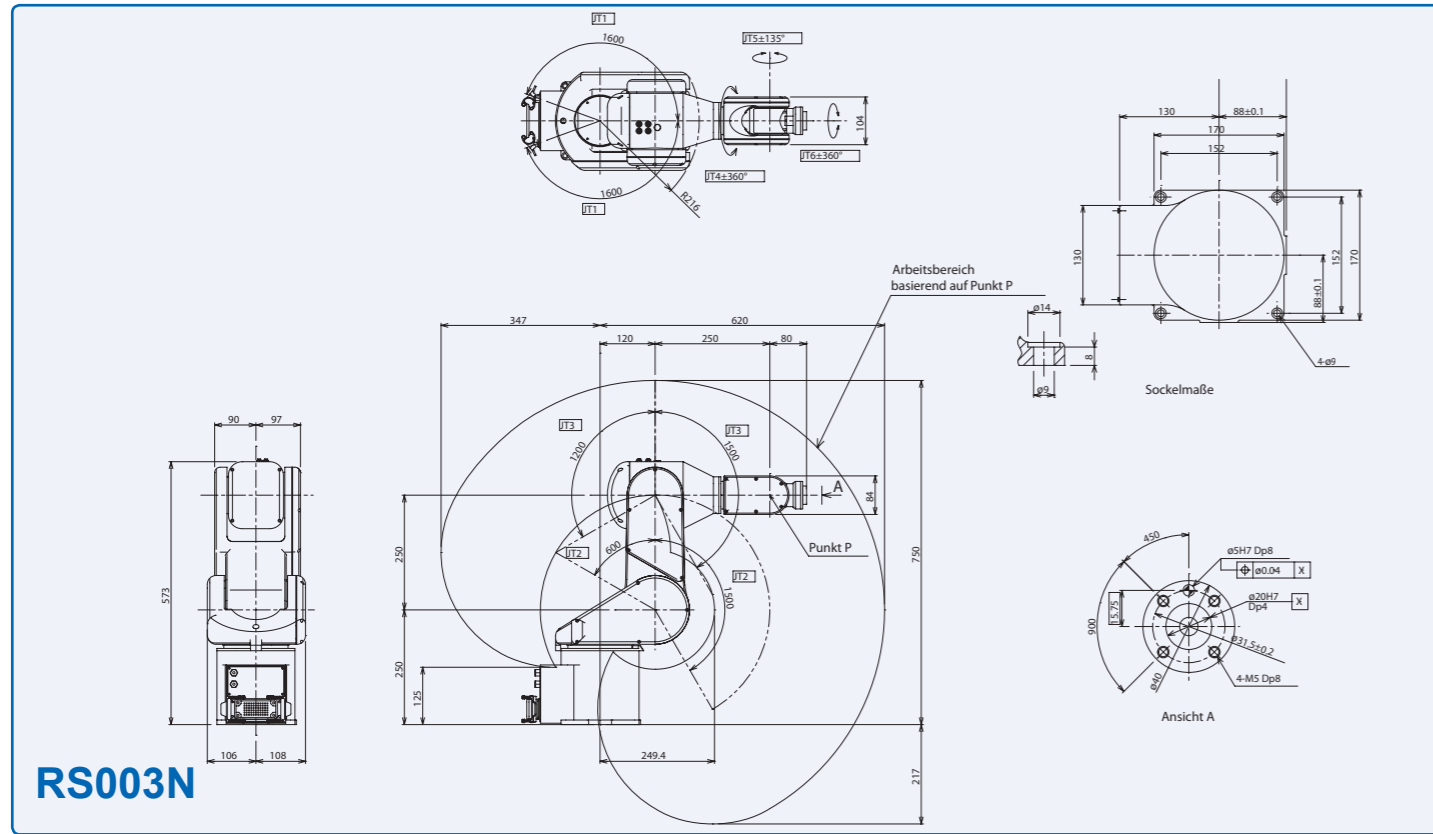


| MODEL | RS003N | RS005N*2 | RS005L | RS006L | RS010N | RS010L | RS020N | RS030N | RS050N | RS080N | |
|--|-------------------------------------|--|------------------------|------------------------|------------------------|-----------------------|-------------------------------------|--|------------------------|------------------------|--|
| Degrees of Freedom | 6 Axes | | | | | | 6 Axes | | | | |
| Maximum Reach*1 | 620 mm | 705 mm | 903 mm | 1650 mm | 1450 mm | 1925 mm | 1725 mm | 2100 mm | 2100 mm | 2100 mm | |
| Maximum Payload | 3 kg | 5 kg | 5 kg | 6 kg | 10 kg | 10 kg | 20 kg | 30 kg | 50 kg | 80 kg | |
| Maximum Stroke | Axis 1 | ±160 ° | ±180 ° | ±180 ° | ±180 ° | ±180 ° | ±180 ° | ±180 ° | ±180 ° | ±180 ° | |
| | Axis 2 | +150 ° ~ -60 ° | +135 ° ~ -80 ° | +135 ° ~ -80 ° | +145 ° ~ -105 ° | +145 ° ~ -105 ° | +155 ° ~ -105 ° | +155 ° ~ -105 ° | +140 ° ~ -105 ° | +140 ° ~ -105 ° | |
| | Axis 3 | +120 ° ~ -150 ° | +118 ° ~ -172 ° | +118 ° ~ -172 ° | +150 ° ~ -163 ° | +150 ° ~ -163 ° | +150 ° ~ -163 ° | +150 ° ~ -163 ° | +135 ° ~ -155 ° | 135 ° ~ -155 ° | |
| | Axis 4 | ±360 ° | ±360 ° | ±360 ° | ±270 ° | ±270 ° | ±270 ° | ±270 ° | ±360 ° | ±360 ° | |
| | Axis 5 | ±135 ° | ±145 ° | ±145 ° | ±145 ° | ±145 ° | ±145 ° | ±145 ° | ±145 ° | ±145 ° | |
| | Axis 6 | ±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 | 190 °/s | 180 °/s | 180 °/s | |
| | Axis 2 | 250 °/s | 355 °/s | 300 °/s | 250 °/s | 250 °/s | 205 °/s | 205 °/s | 180 °/s | 180 °/s | |
| | Axis 3 | 225 °/s | 410 °/s | 300 °/s | 215 °/s | 215 °/s | 210 °/s | 210 °/s | 185 °/s | 185 °/s | |
| | Axis 4 | 540 °/s | 460 °/s | 460 °/s | 365 °/s | 365 °/s | 400 °/s | 400 °/s | 260 °/s | 260 °/s | |
| | Axis 5 | 225 °/s | 460 °/s | 460 °/s | 380 °/s | 380 °/s | 360 °/s | 360 °/s | 260 °/s | 260 °/s | |
| | Axis 6 | 540 °/s | 740 °/s | 740 °/s | 700 °/s | 700 °/s | 610 °/s | 610 °/s | 360 °/s | 360 °/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 | 45,0 N·m | 210,0 N·m | 210,0 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 | 45,0 N·m | 210,0 N·m | 210,0 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 | 29,0 N·m | 130,0 N·m | 130,0 N·m | |
| Moment of Inertia | Axis 4 | 0,12 kg·m ² | 0,4 kg·m ² | 0,4 kg·m ² | 0,45 kg·m ² | 0,7 kg·m ² | 0,7 kg·m ² | 0,9 kg·m ² | 16,8 kg·m ² | 28,0 kg·m ² | |
| | Axis 5 | 0,12 kg·m ² | 0,4 kg·m ² | 0,4 kg·m ² | 0,45 kg·m ² | 0,7 kg·m ² | 0,7 kg·m ² | 0,9 kg·m ² | 16,8 kg·m ² | 28,0 kg·m ² | |
| | Axis 6 | 0,03 kg·m ² | 0,12 kg·m ² | 0,12 kg·m ² | 0,14 kg·m ² | 0,2 kg·m ² | 0,2 kg·m ² | 0,3 kg·m ² | 6,6 kg·m ² | 11,0 kg·m ² | |
| 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 | ± 0,05 mm | ± 0,07 mm | ± 0,07 mm | ± 0,07 mm | |
| Weight | 20 kg | 34 kg | 35 kg | 150 kg | 150 kg | 230 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 | 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 | E40 | E42 | E42 | E42 | |
| Color | Munsell 10GY9/1 | | | | | | Munsell 10GY9/1 | | | | |
| Installation | Floor- or Ceiling | | | | | | Floor- or Ceiling | | | | |
| 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 | | | |
| Applicaton Media (Upper Arm RS005 Base) | in | 4 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | |
| | out | 4 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | |
| | air | 2 x Ø4 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 8 mm | 2 x Ø 10 mm | 2 x Ø 10 mm | |
| Protection Class | Wrist Unit: IP67 / Basic Axes: IP65 | | | | | | Wrist Unit: IP67 / Basic Axes: IP65 | | | | |

*1 Distance between Centre of Axis 1 and Axis 5.
*2 Technical Data conditionally

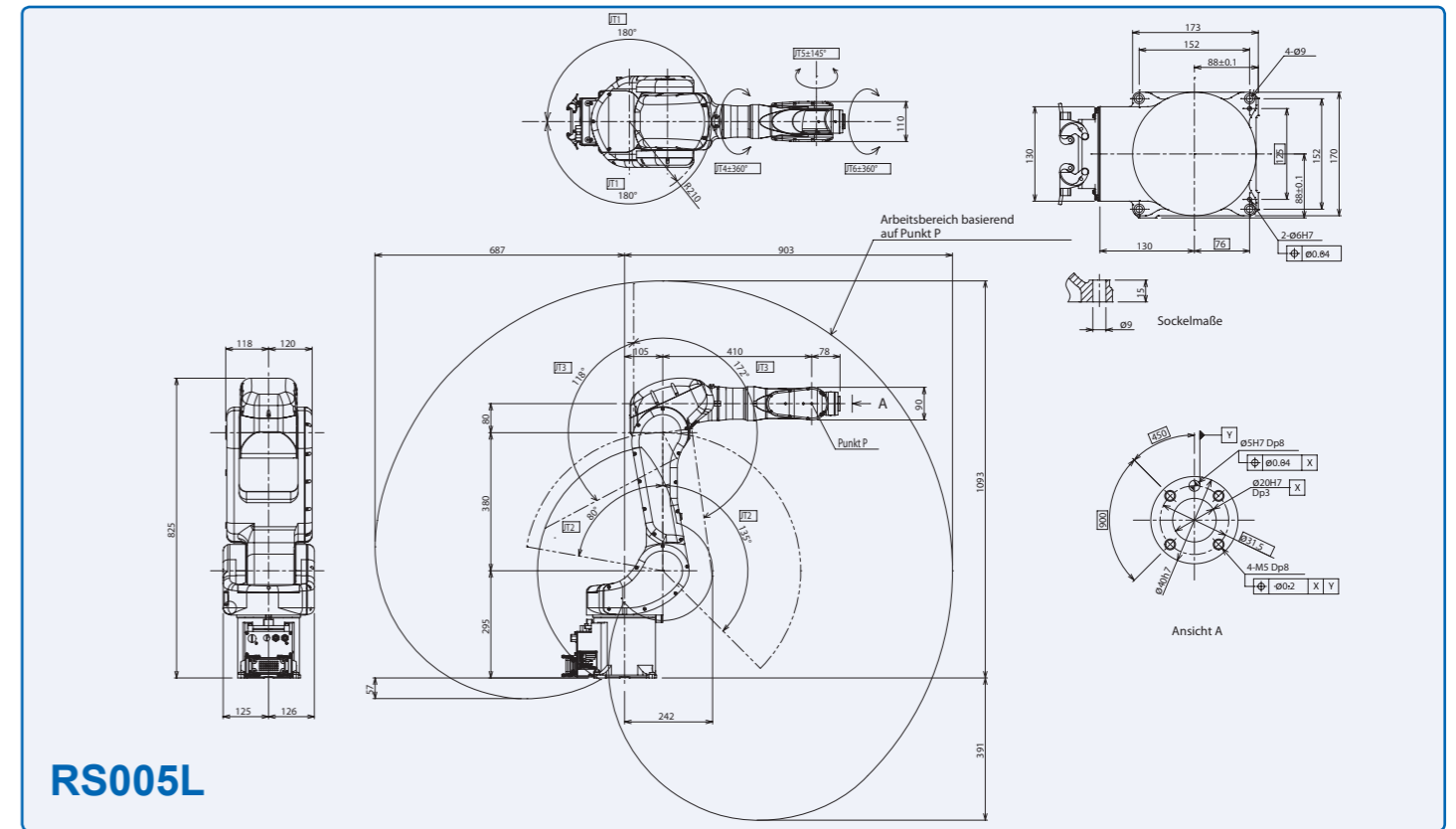


Motion Range & Dimensions

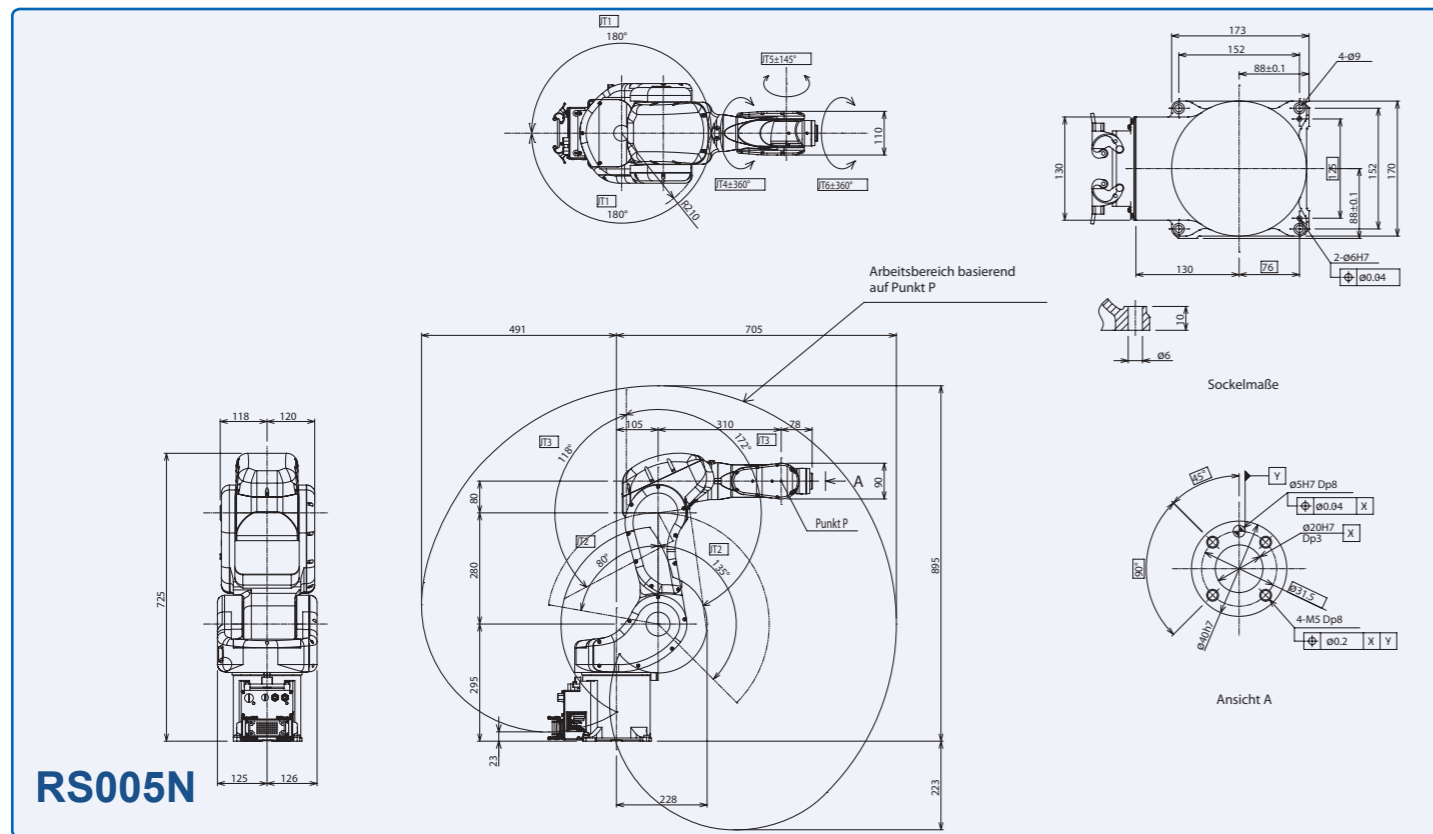


RS003N

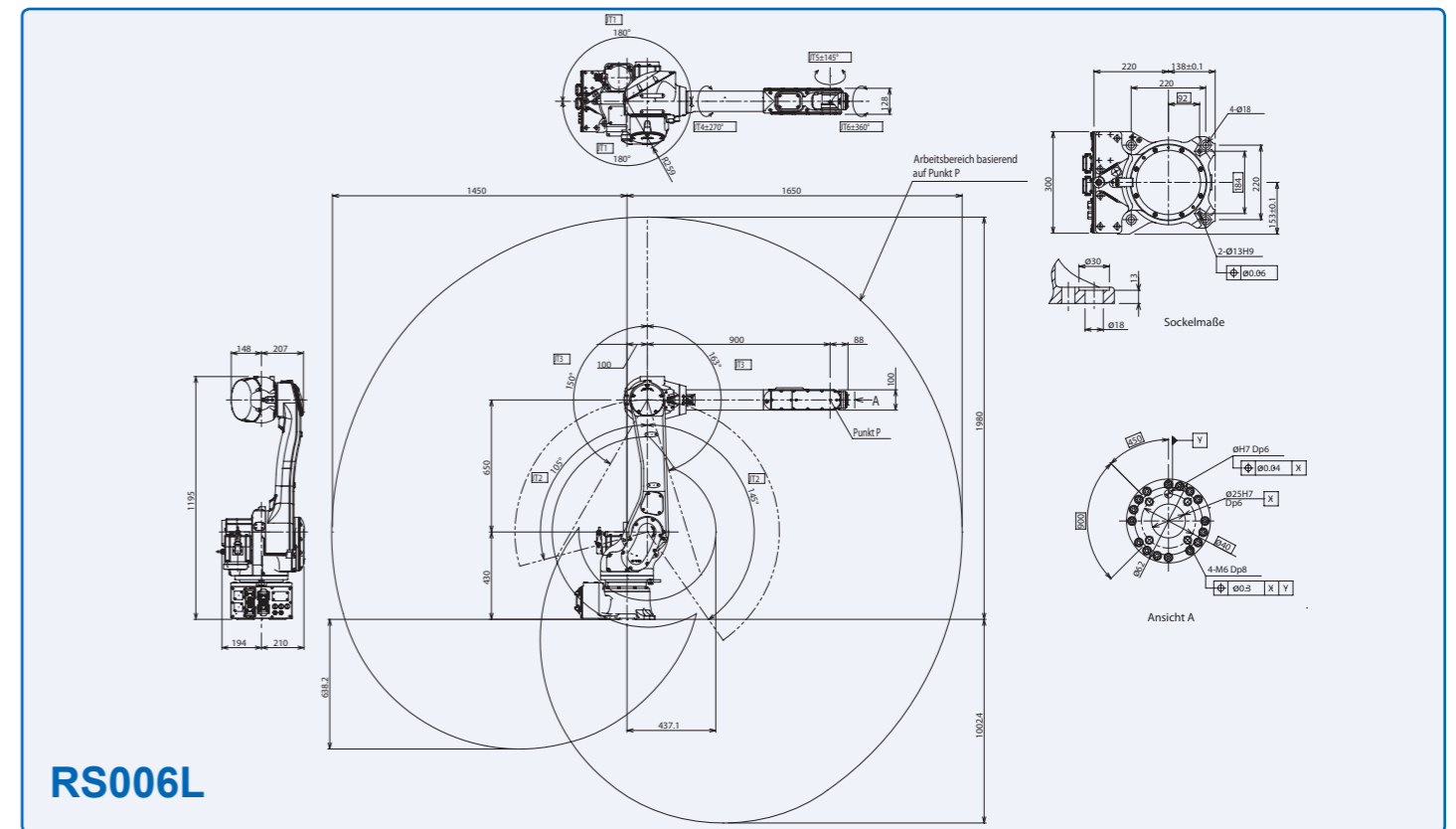
Motion Range & Dimensions



RS005L

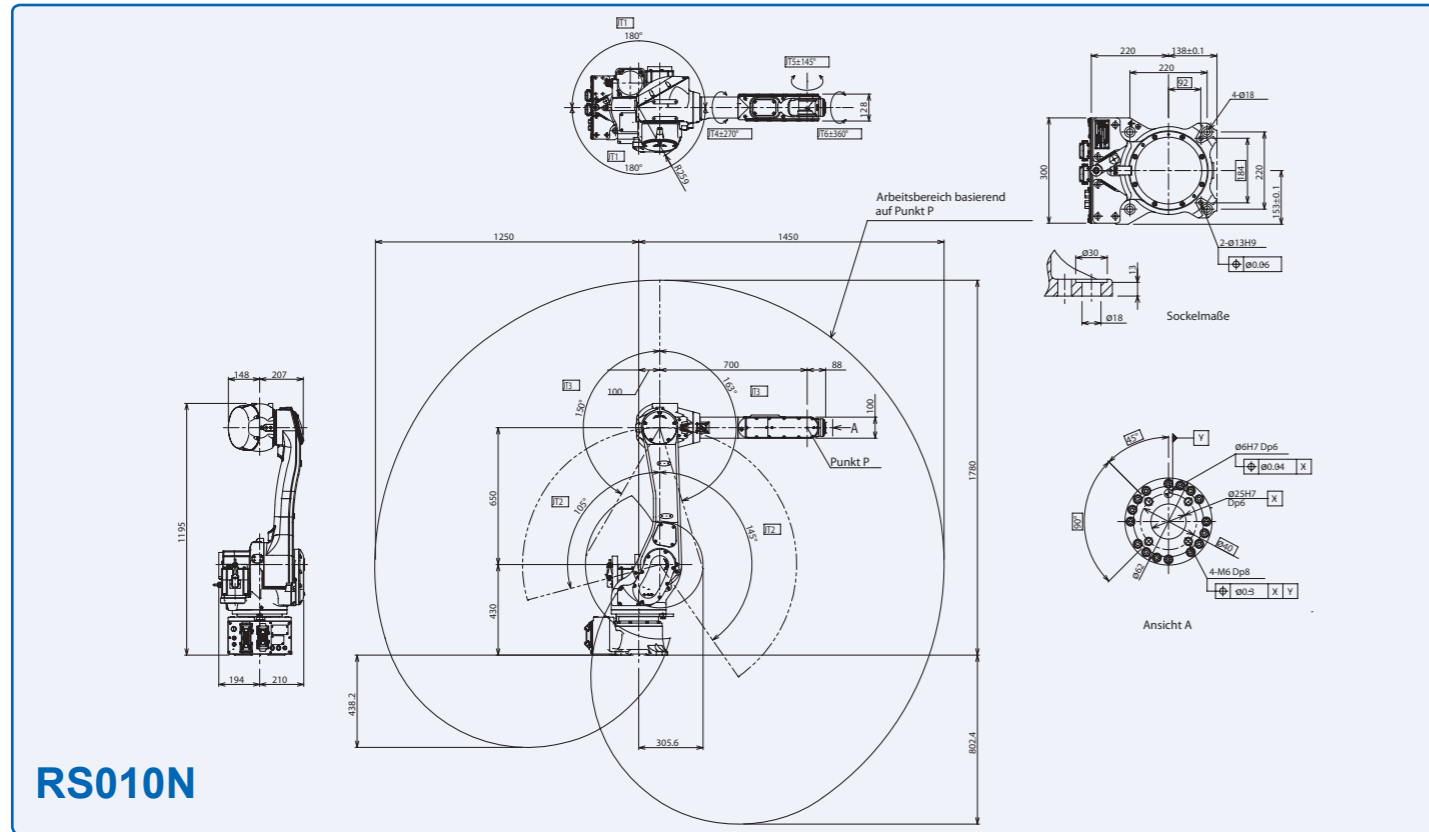


RS005N



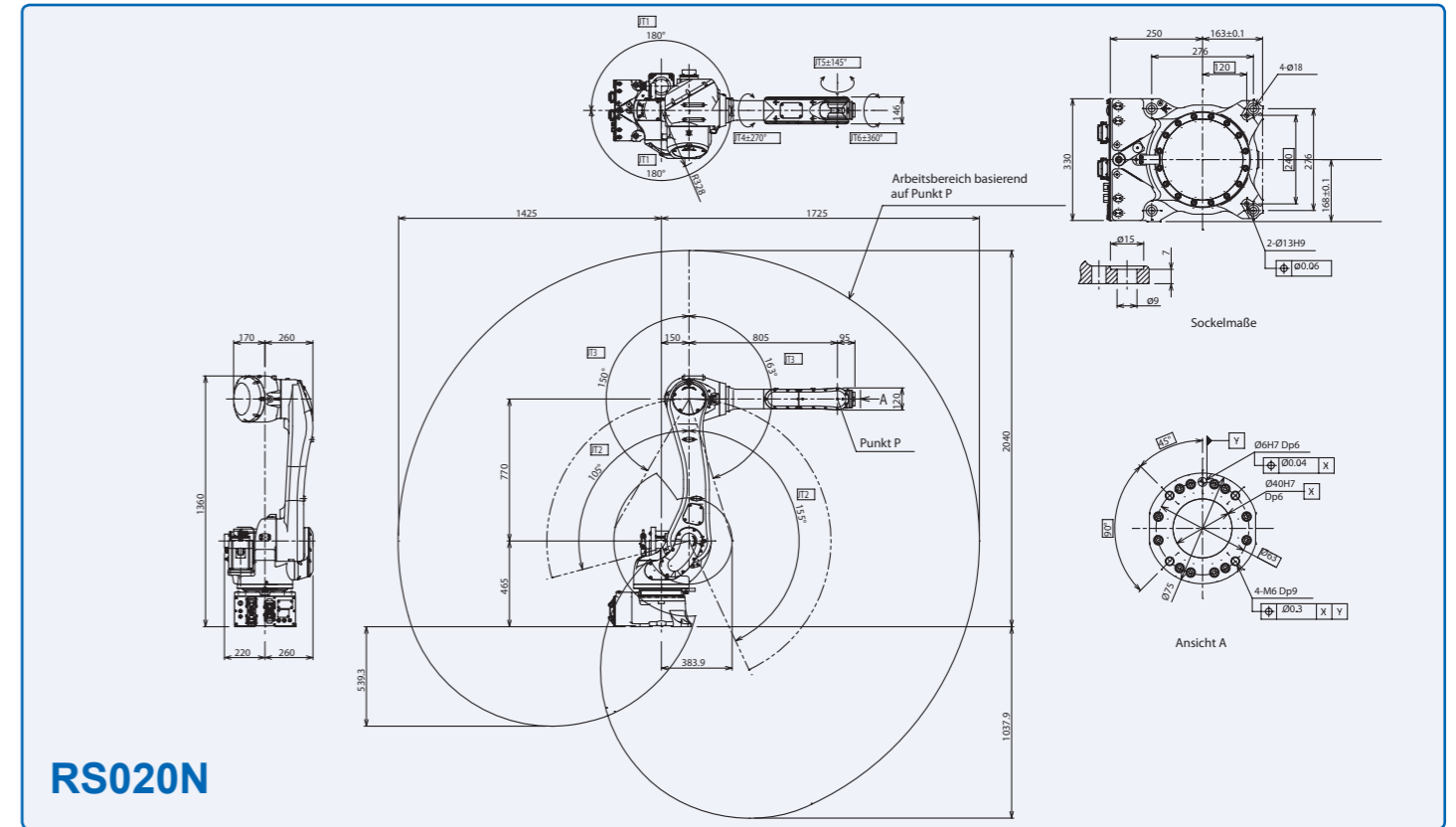
RS006L

Motion Range & Dimensions

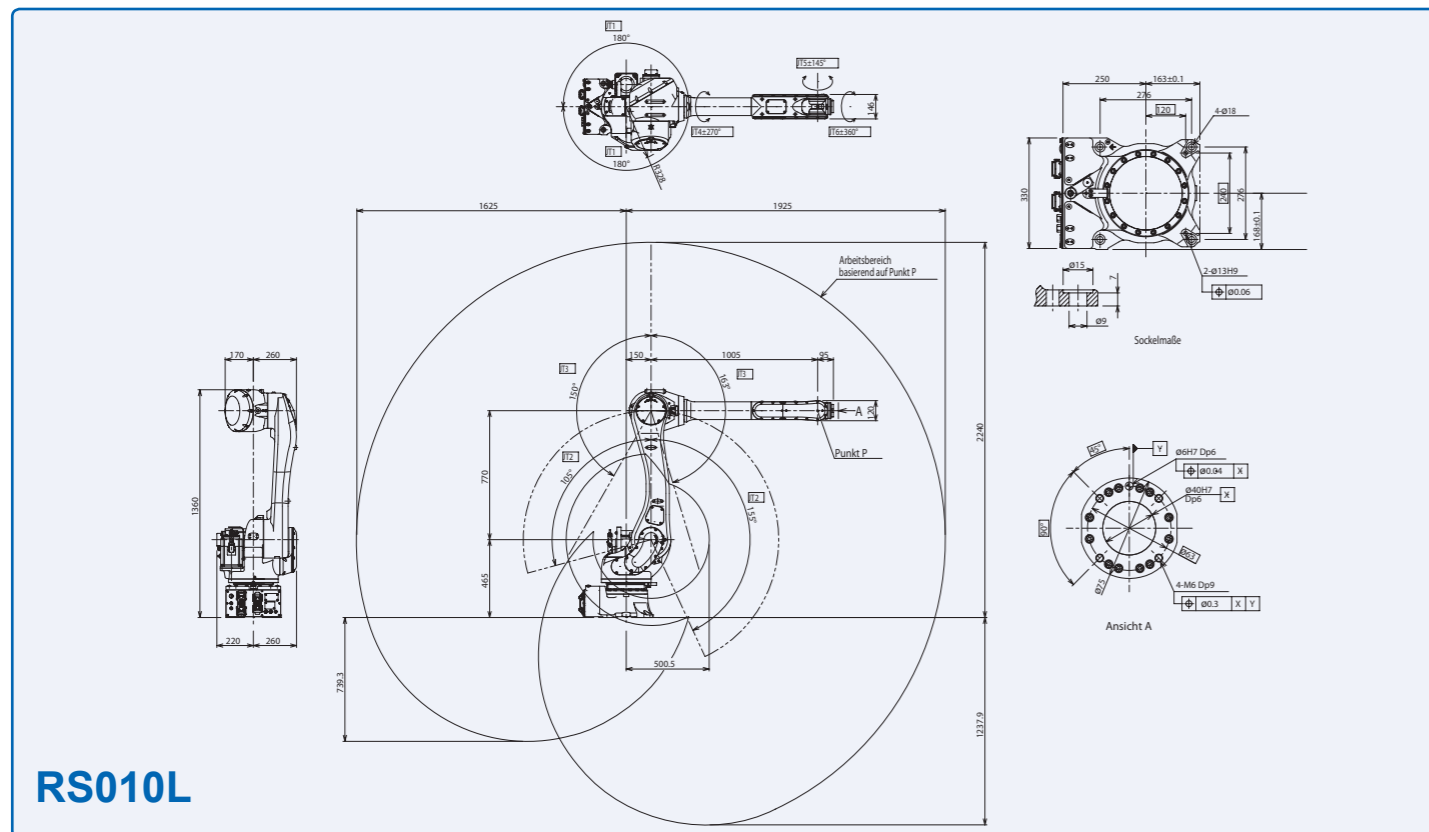


RS010N

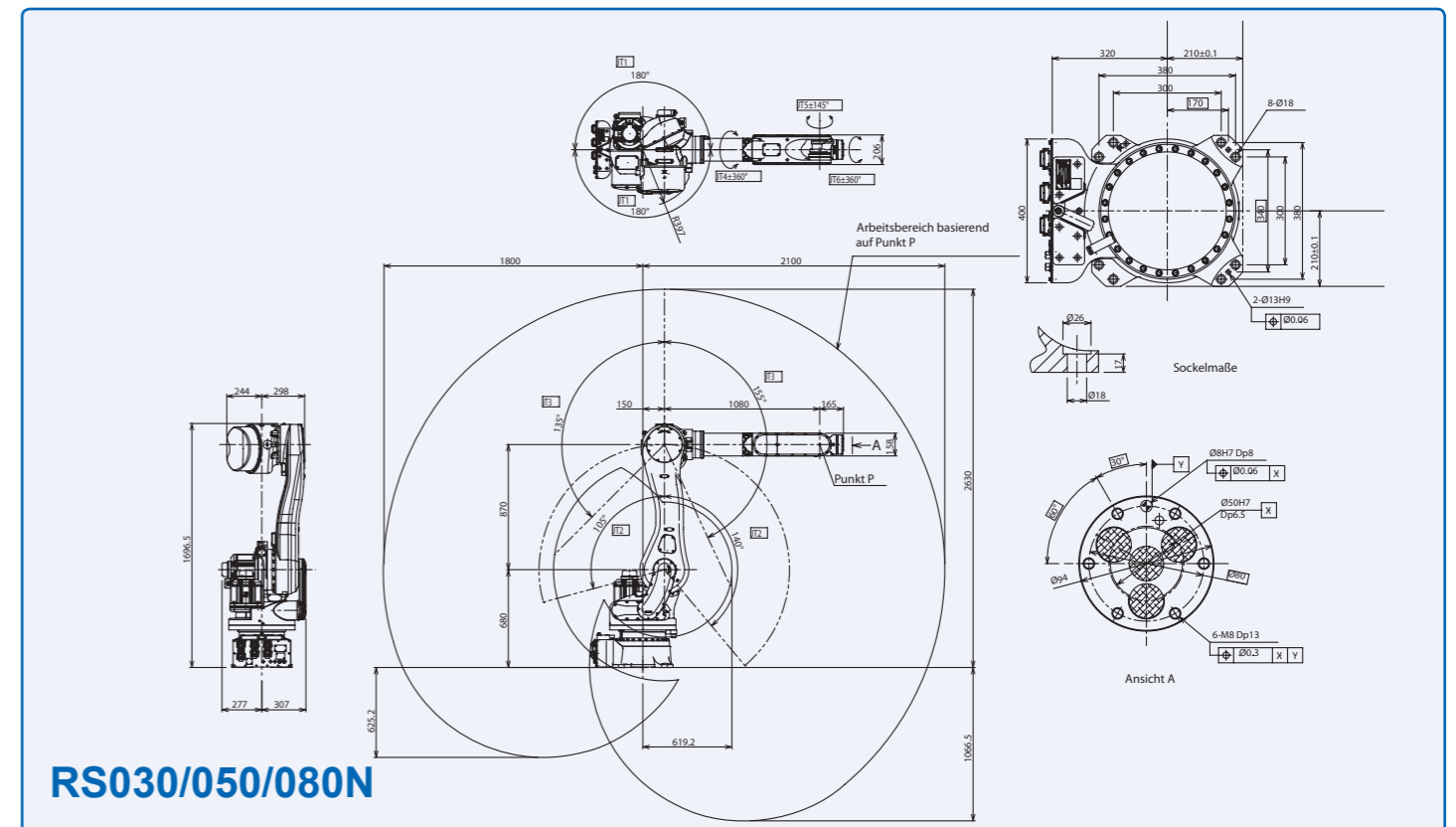
Motion Range & Dimensions



RS020N



RS010L



RS030/050/080N

CONTROLLER

1. Control

The E-Controller as consistent further development of the existing control concept has been developed in close cooperation with Kawasaki's customers. In this way, a state-of-the-art high-end product has been created - offering the familiar ease of operation and exceptionally high power.

2. Compact and upgradeable

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. Custom-tailored user interfaces may be programmed and used for the simplified control of the robot and also peripheral devices.

3. User-friendly system

Motor power 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.

4. Functions

Integrated software functions support the most various applications. Through individual combination and programming, highly complex systems may be designed and realized. (e.g. Soft Absorber, Collision Detection, Conveyor Tracking and many more).

5. System

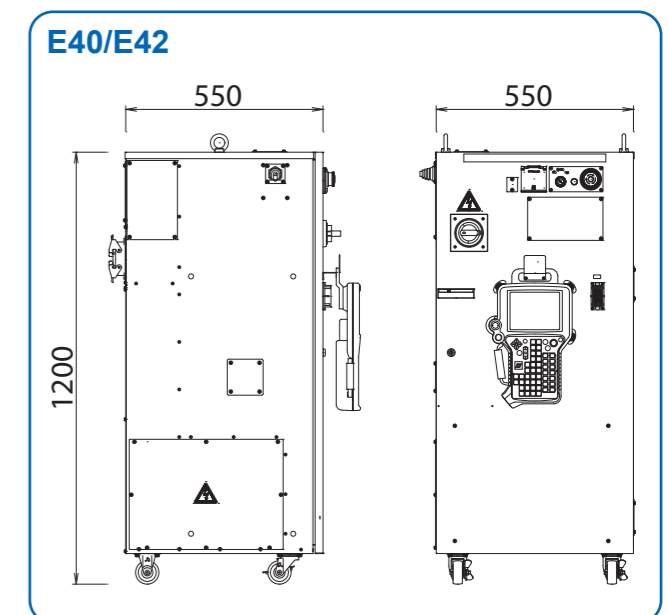
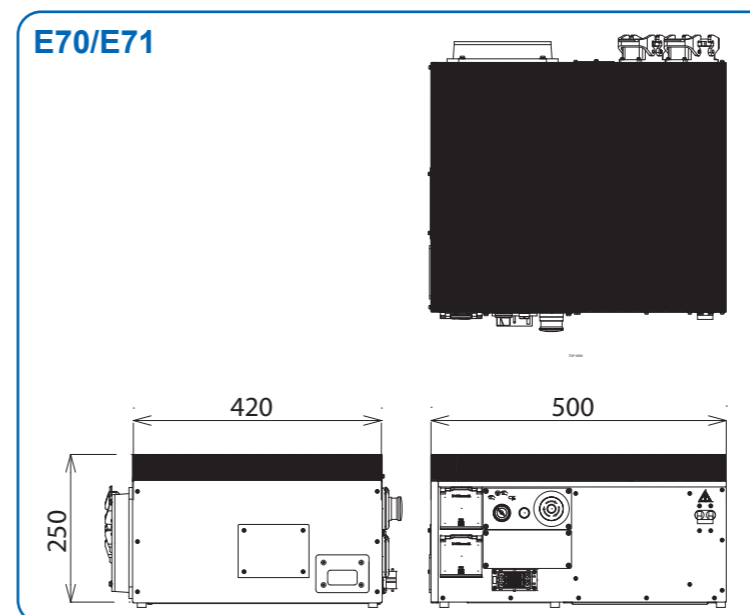
Ultra-fast execution of programs, loading and storing processes as well as a precise continuous-path control and much more thanks to the up-to-date processor design and powerful components. 8 MB RAM (80,000 steps) and USB interface as standard.

6. 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.

| 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" TFT 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.



Simple friendly **Kawasaki Robot**

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: As Photographs 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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