2.8 Robot Motion

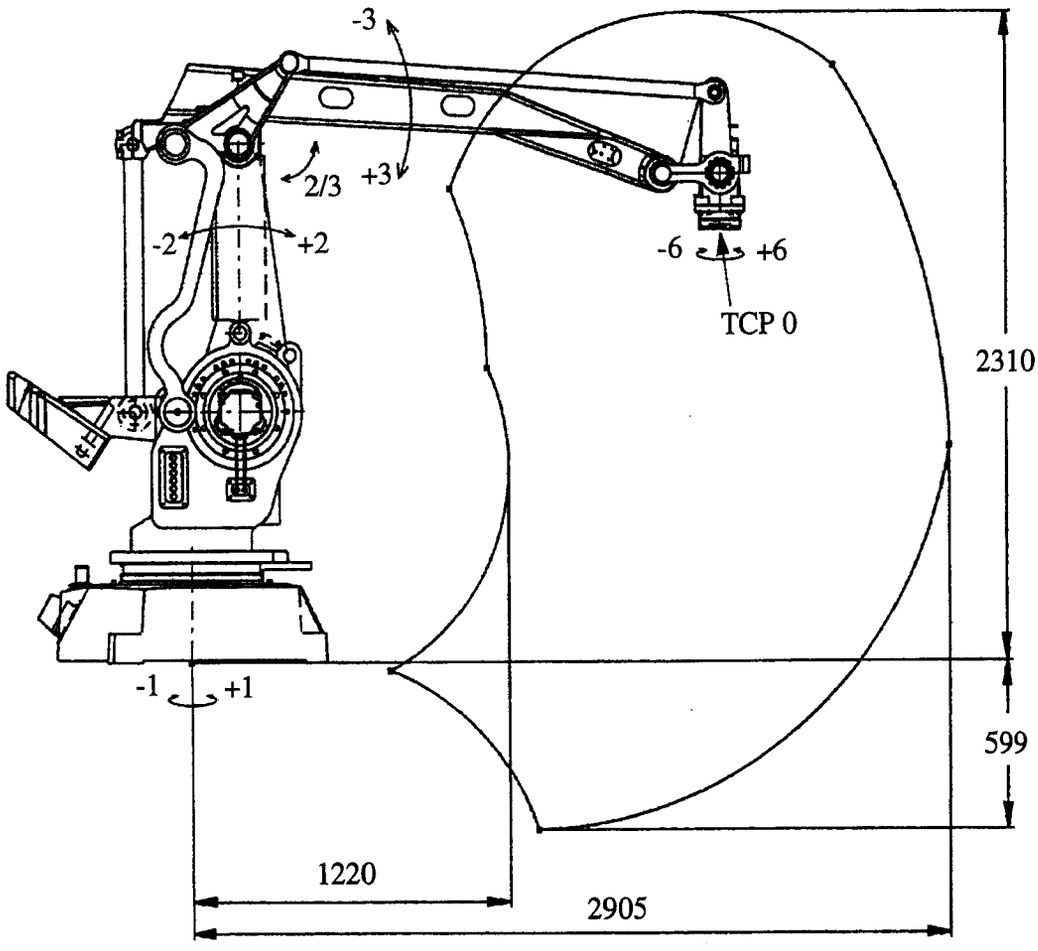


Figure 8 Working space of IRB 640 (TCP 0, dimensions in mm).

Motion performance

The QuickMove™ concept means that a self-optimizing motion control is used. The robot automatically optimizes the servo parameters to achieve the best possible performance throughout the cycle - based on load properties, location in working area, velocity and direction of movement.

- No parameters have to be adjusted to achieve correct path, orientation and velocity.
- Maximum acceleration is always obtained (acceleration can be reduced, e.g. when handling fragile parts).
- The number of adjustments that have to be made to achieve the shortest possible cycle time is minimized.

The TrueMove™ concept means that the programmed path is followed – regardless of the speed or operating mode – even after an emergency stop, a safeguarded stop, a process stop, a program stop or a power failure.

The robot can, in a controlled way, pass through singular points, i.e. points where two axes coincide.

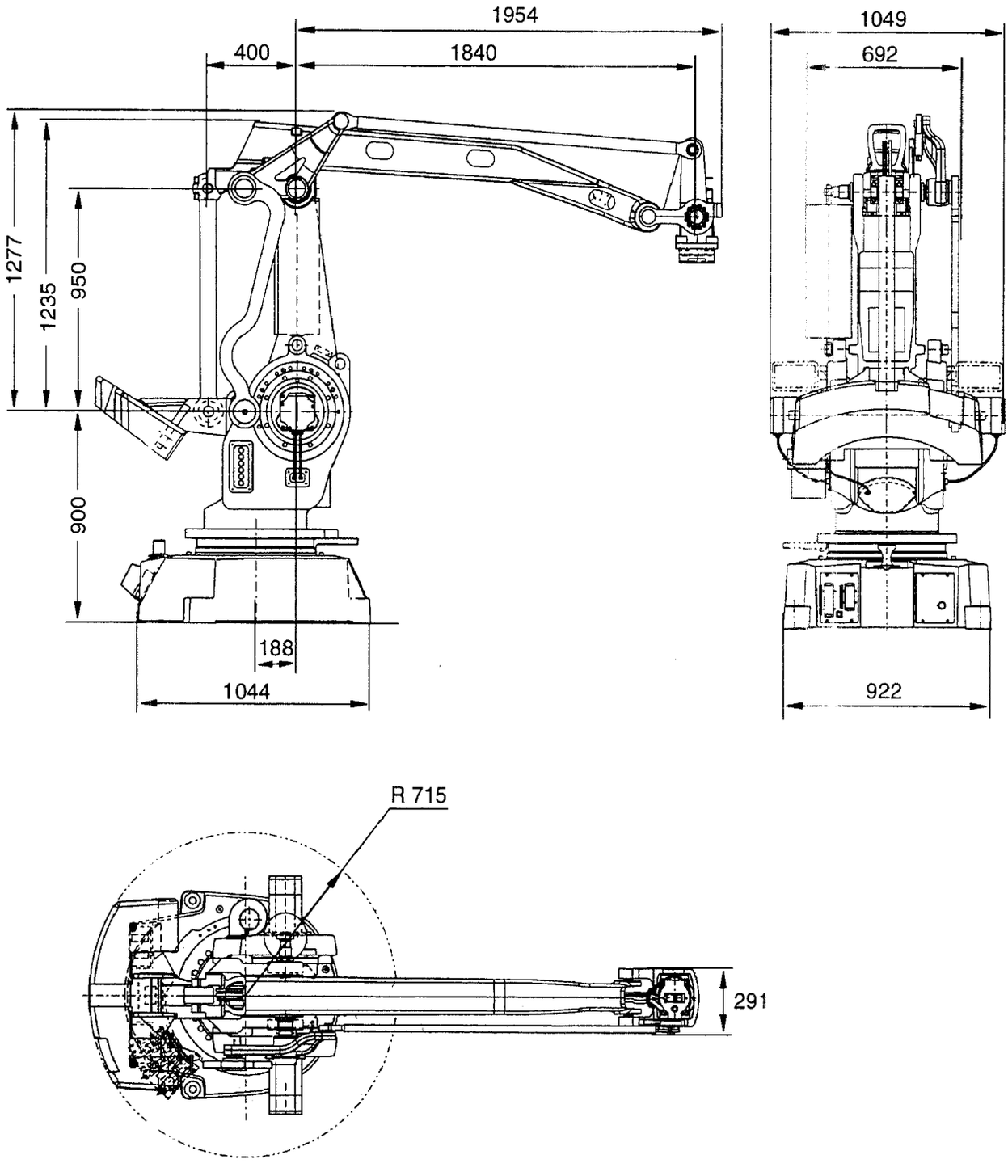
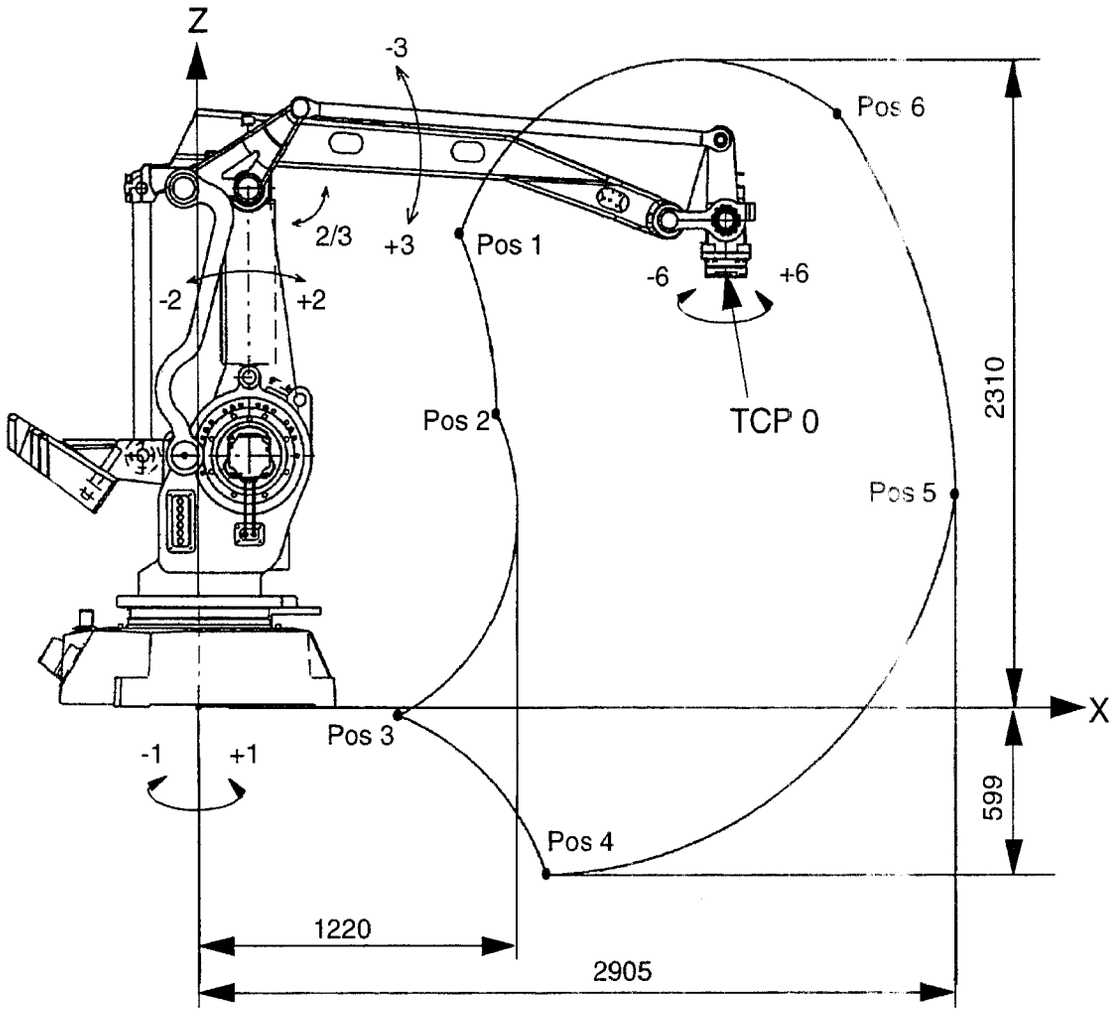


Figure 11 View of the manipulator from the side. rear and above (dimensions in mm).

3.8 Robot Motion

IRB 640

Type of motion		Range of movement
Axis 1	Rotation motion	+180° to -180°
Axis 2	Arm motion	+70° to -70°
Axis 3	Arm motion	+85° to -28°
Axis 6	Turn motion	+300° to -300°



Positions at TCP 0 (mm)

Pos	X	Z
0	2028	1536
1	999	1685
2	1139	1053
3	761	-31
4	1328	-599
5	2905	770
6	2464	2119

Angle 2/3 (φ2/φ3)

Min. 25° Max. 155° 90° at pos. 0

pos.	axis 2 (φ2)	axis 3 (φ3)
0	0°	0°
1	-70°	-28°
2	-70°	-5°
3	40°	85°
4	70°	85°
5	70°	5°
6	37°	-28°

Figure 20 The extreme positions of the robot arm