ROBOTIC TEAM RYCHNOV

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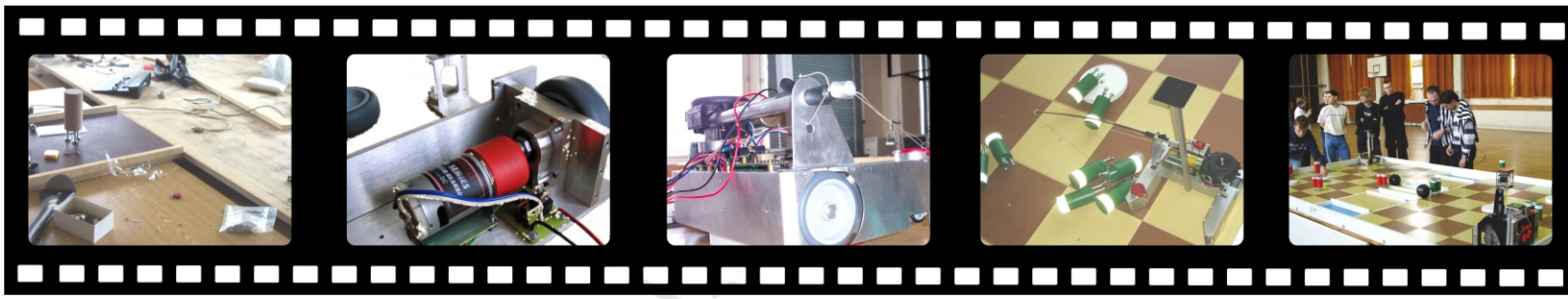
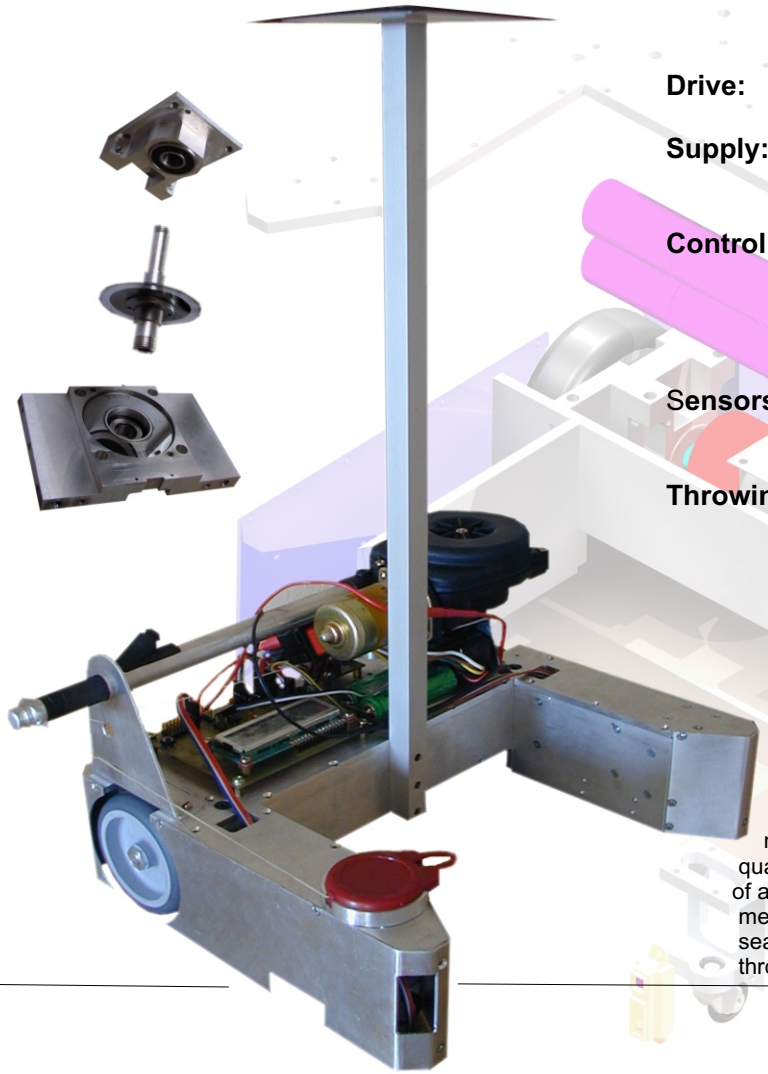
Robotic Club of College and Secondary School of Engineering, Rychnov nad Kněžnou

R-team in person: Martin Locker (team manager), Jiří Učík, Marek Lewandowski, Daniel Hradecký, Jiří Šástka

Taking part in Eurobot for the first time, we have chosen a simple strategy without a possibility of picking our own skittles.





MR 04 - mobile robot with differentially driven chassis

Drive: 2 DC gear motors 50:1 with quadrature encoder

Supply: 10 NiCd cells 1700 mAh - drives
2 LiON cells 1950 mAh - electronics

Control: main microcontroller ATmega128
drive control - ATmega8
sensor control - ATmega8
(communication RS485)

Sensors: 2 IR distance rangers GP2D120 - distance from walls
2 IR reflective sensors CNY70 - floor detection

Throwing-down the skittles: telescopic car-antenna

The strategy consists of following steps: robot moves onto the opponent´s part of the field across the bridge, stretches out its hand to throw down the skittles and moves along the playground wall throwing down the skittles. The robot with a differentially driven chassis is driven by two DC gear motors 50:1 (Mabuchi RS540),for speed control and odometry using optical quadrature encoder, drive control realised by PI controller with the max. speed of approx. 0.5 m/s. For locating the robot on the field we use odometry and measuring the distance from the field wall by an IR distance ranger.The bridge is searched for using IR reflective sensors and a telescopic car-antenna is used for throwing down the skittles.