

Ultra-low profile steering robot

Halo™



The Halo robot is a direct-drive hollow centre steering robot that enables a wide range of steering inputs to be applied with high precision and repeatability, so that high quality data can be captured.



Configurable to control steering, braking and accelerator functions simultaneously



Fully programmable and easy-to-use control software running within Windows



Suitable for vehicle dynamics tests specified by FMVSS 126, ISO 7401, NHTSA and UNECE



Integrated electronics package powered from vehicle's 12 or 24 V supply (or self-powered 1 hour)



Data capture of robot channels, analogue input and motion pack data



Typical installation time less than 30 minutes



Low friction (<0.9 Nm) meets Euro NCAP's TB038 requirements, making it ideal for LSS testing



Vehicle can be driven normally when robot is disabled



Optional CAN I/O



Can be upgraded to perform path-following tests

The Halo is used to apply accurate, controlled inputs to a vehicle’s steering system as required for a wide range of tests including for transient handling behaviour, ADAS testing, legislative tests (fishhook, sine-dwell etc.), steering system evaluation, durability and misuse testing. It can be used in both path-following and driverless systems.

The wrap-around carbon fibre steering rim built into the motor’s rotor allows for normal driving when the Halo is deactivated, while the hollow centre allows the airbag to remain active. This enhances test driver safety and removes the need to make custom steering column adaptors. The main benefit, however, is seen in modern vehicles where the removal of the driver’s airbag may be detected by the ESC system, triggering a change in the vehicle’s dynamic limits.

The Halo can be used with an external data capture system and include built-in multi-channel data capture to minimise the total hardware required in the vehicle. AB Dynamics steering robots can work in conjunction with pedal, gearchange and clutch robots to form a driverless solution.

Software



The Halo’s user interface software runs on any standard PC running Windows. The software enables the driver to define and run new tests quickly and easily by choosing from a library of standard tests. These include sine, sine sweep, step and ramp inputs. A range of special tests is also provided, such as sine-dwell, roll stability (used for fish-hook, J-turns etc.), catch-up and flick. In addition, test profiles can be recorded from direct driver input using a learn mode or played out from data stored in an ASCII file. The robot can also follow an external input signal.

Specifications

Feature	
Direct drive motor	✓
Hollow for use with airbag in place	✓
Suitable for sine-dwell/fishhook	✓
Suitable for path-following	✓
Max torque (short duration)	90 Nm at 500°/s
Rated torque	75 Nm at 1500°/s
Max velocity	2500°/s at up to 10 Nm
Motor mass	9 kg

About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

For more information:
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