

Accelerator Pedal Robot AR1

From Anthony Best Dynamics

Outline Specification – Issue 2



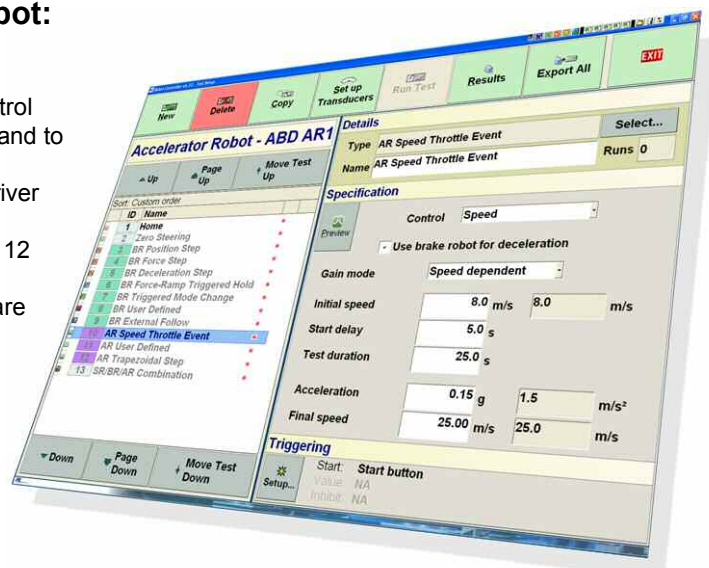
The AR series Accelerator Pedal Robot is designed to apply inputs to a vehicle's throttle pedal for:

- Closed loop vehicle speed control
- Handling behaviour measurement
- Consistent in-vehicle NVH measurement

The Accelerator Robot can be used either as a stand-alone product, or together with the ABD steering robot and brake robot products. When it is used in conjunction with ABD's other robots it is possible to perform accurate and repeatable steering, braking and throttle control for vehicle dynamic testing.

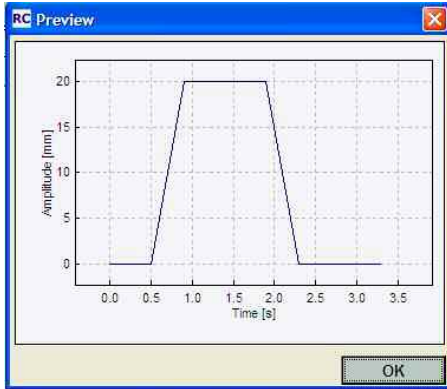
Features of the AR series Accelerator Robot:

- Provides closed loop position control of the throttle
- Can be setup to provide closed loop vehicle speed control
- Adjustable to enable easy installation in most vehicles and to suit most drivers
- Vehicle and throttle can be operated normally by the driver with accelerator robot installed
- Integrated electronics package powered from vehicle's 12 or 24V supply
- Fully programmable and easy-to-use RC control software running under Windows™ XP/2000
- A range of standard and user configurable test profiles supplied
- Custom tests can be added on request
- Multiple safety features



Capability:

1) Pedal Position Control:



Throttle pedal position can be controlled

The Accelerator Robot provides closed loop control of the throttle pedal. A library of configurable standard profiles can be played out using the RC windows based software. Alternatively the user can specify more complex profiles.

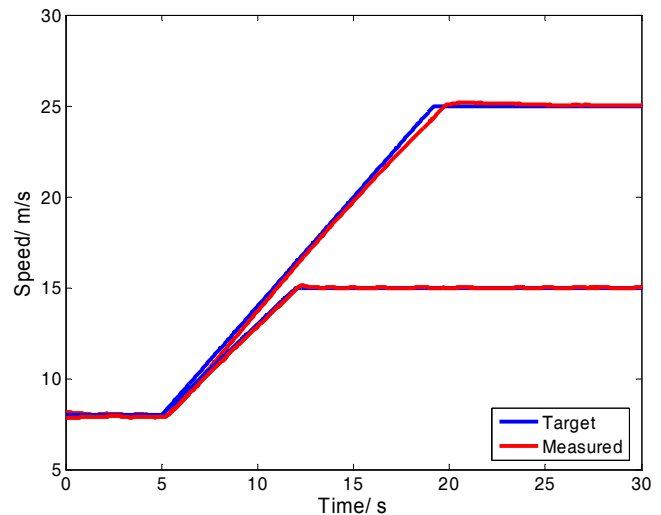
2) Speed Control:

When provided with a suitable speed signal the Accelerator Robot can be used for closed loop speed control. ABD have successfully used the following devices for speed feedback:

- RT3000 products (Oxford Technical Solutions)
- MicroSAT (Datron Technology)
- VBoxII (Race Logic)
- AX22 (Race Technology)
- Wheel pulse transducer (Corrsys Datron)

Applications include:

- Maintaining constant vehicle speed for NVH or dynamic tests.
- Controlling the entry speed to a steering or braking test, with dropped throttle during the test.
- Accurately synchronising power-off or power-on conditions, for example during a turn.
- Playing out varying speed profiles.
- To control the distance travelled with time in path following applications.



Accelerator robot performance measured from ABD test car

3) Integration with SR and BR series robots:



Solo standalone controller and power supply unit for the accelerator robot

A compact stand alone controller (*Solo*) is available, and the Accelerator Robot is also compatible with existing *Omni*-controllers allowing up to 3 control axes (steering, brake and accelerator).

The RC software provides an integrated control interface which allows steering, braking and accelerator tests to be combined. When the Accelerator Robot is used with the Steering Robot's path following function manoeuvres can be carried out repeatedly at controlled speeds.

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