

## **AP Racing bespoke braking system solution for PSV armoured vehicles**

The brake system specifically developed by AP Racing for the PSV's Land Cruiser 200 has been designed to service a vehicle of 6,000Kg GVW (gross vehicle weight) with disc diameters and thickness maximised to match the TÜV-approved 18-inch alloy wheels fitted.

### **CALIPER DETAILS**

Front caliper piston bores are the largest that can be fitted to reduce pedal effort and pad material chosen has been homologated for 320 Km/h road car projects.

AP Racing's aluminium caliper housings have uniquely designed caliper mounting halves to match the PSV Land Cruiser 200 suspension knuckles.

The design was optimised from extensive FEA studies of the caliper bodies using AP Racing's 3D Solidworks engineering systems.

Calipers were subjected to a 118,000-cycle fatigue test including 18,000 stops with a simulated loading of 1.0G.

### **DISC DETAILS**


The front brake disc casting was designed and developed to match the PSV Land Cruiser 200 front suspension design while the rear brake disc casting was designed and developed to match the vehicle's rear suspension and existing hand brake design.

Front and rear brake discs are cast in high-carbon/copper-grey cast iron to maximise thermal conductivity thereby reducing thermal shock.

Front and rear discs were assessed by AP Racing's FEA techniques to minimise disc 'coning' and thermal distortion.

Front and rear discs underwent standard AP Racing's disc thermal integrity test which comprises 100,000 brake applications creating the temperature rise of a 0.8G stop from the V-max of the vehicle at its 6,000Kg GVW.

Before each test, the disc was were cooled to 100° C to maximse thermal shock and simulate an emergency stop from maximum speed.



Richard Joyce 7 August 2009

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