

Cre8 Associates Limited

Covert Vehicle Operations

Services

Cre8 Associates Limited have been active in the field of retro fitting of specialist vehicles for the last 6 years. In this time we have developed a unique understanding of both the end users and operational requirements for covert and overt vehicles, many of which are based on COTS vehicles. Cre8 Associates Limited are experienced in:

- RF Installations and Testing for Radio Performance
- Electronic Counter Measure Systems
- EMC Control and Test Plans to Def Stan 59-411
- Design, Manufacture and Installation
 - EMC Filter evaluation and fitment
 - Bespoke electrical distribution systems
 - Packaging of covert instrumentation and controls
 - Full vehicle Electrical Harness Design, Manufacture and Installation
 - Specialist system development and testing
- In Field Testing and evaluation of
 - RF Cables
 - Electrical Functions
 - COTS based CAN Multiplex Systems
- Antenna checks and installations on specialist communications and transmission systems
- Installation of covert systems, cameras, sirens and other systems

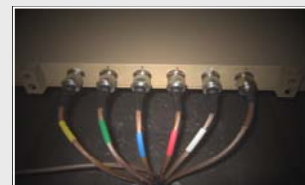
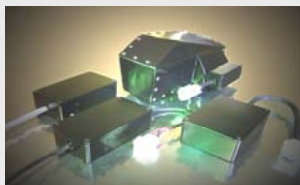


Facilities

Cre8 Associates Limited have specialised facilities at its home base in Leicestershire United Kingdom to house and work on a number of vehicles at any one time. Our location on Bruntingthorpe Proving Ground allows us immediate access to a high speed and off-highway test track day and night allowing covert testing and operations 24 hours a day. The site is a secure site and our workshops allow not only design, production and installation in the same area but also the ability to host our customers and involve them in the project in all aspects of the work.

Programme Management

Cre8 Associates Limited not only look at the electrical aspects of your requirements but can also project manage complete sections of the work required to make your product or vehicle. With a vast experience of military programme management, Cre8 Associates Limited will look after aspects of mechanical and logistics within your programme requirements.



Problematic Issues?
Cre8 the Solution!



System Install and Integration

Power Management

Alternator & Starter Motor Upgrades	State of Charge Monitoring
DC Power Distribution	Specialist 12vdc & 24VDC Vehicle Conversions
Specialist Electrical Harness	12VDC - 24VDC Militarised DC - DC Conversion
Military Grade Interconnection	12VDC - 28VDC Militarised DC - DC Conversion
Battery Management & Emergency Vehicle Start	12VDC - 42VDC Militarised DC - DC Conversion
Battery Power Storage	

Specialist Systems

Under Bonnet Fire Suppression	FLIR
Fuel Line Fire Suppression	Navigation Systems
Light Isolation (internal & External)	Sirens (Yelp Wail)
Light Bars & Warning Lights	Internal & External Intercom Systems
Infra Red Headlights	Central Locking
Cameras—Infra Red / Night Day	Power Window Conversion
Covert Centre Consol	

RF and Communications

VHF - Communication Install	Antennas
UHF - Communication Install	Cameras
TETRA - Communication Install	Pre & Post Installation Testing
Satellite - Communication Install	Counter IED Equipment



Cre8 Associates Limited

Vehicle Overview and Specifications

PSV Hilux Shield

Delivering excellent protection in a discreet package, the PSV Hilux is a cost effective solution that combines occupant security with useful cargo carrying capacity. This protected vehicle is ideal for engineering projects and escort duties in high risk regions.



Engine & Transmission Options

Engine Capacity (L)	2.5	3.0	4.0
Fuel Type	Diesel	Diesel	Petrol
Cylinders	4	4	6
Power (PS/HP)	120	171	238
Torque (Nm)	325	343	343
Manual Transmission	Yes	Yes	Yes
Auto Transmission	No	Yes	Yes
Left Hand Drive	Yes	No	No
Right hand Drive	Yes	Yes	Yes

Dimensions

Length x Width x Height (mm)	5255 x 1835 x 1810
Ground Clearance (mm)	235
Seats	3/5

Available Protection Levels — PSV Toyota Hilux ShieldVR6 or NATO STANAG II

BRV 1999

Level	Weapon Type	Calibre	Round		Test	
			Type	Weight (g)	Range (m)	Impact Velocity (m/s)
VR 6	Rifle	7.62 x 51mm	FJ ¹ /PB/SC	9.5	10	830
	Rifle	5.56 x 45mm	FJ ² /PB/SCP SS109	4.0	10	950
VR7*	Rifle	7.62 x 51mm	FJ ² /PB/HC P80	9.8	10	820

NATO STANAG 4569

Level	Weapon Type	Calibre	Round		Test	
			Type	Weight (g)	Range (m)	Impact Velocity (m/s)
II	Test Barrel	20mm	Fragment Simulation Projectile	9.5	10	830
II	Test Barrel	12.7mm	Fragment Simulation Projectile	4.0	10	950
II	Rifle	7.62 x 51mm	FJ ² /PB/HC P80	9.8	10	820

IT Incendiary Tipped, L Lead, CB Coned Bullet, FJ Full Jacket, FN Flat Nose, HC Hard Steel Core (3.7g), PB Pointed Bullet, RN Round Nose Bullet, SC Soft Lead Core, SCP Soft Lead Core with Steel Penetrator

* Opaque area only

Hinges

We replace all original door hinges with custom designed heavy-duty components. The heavy-duty hinges connect the ballistic steel in the doors directly to the ballistic steel in the pillars; the standard vehicle steel bears no weight.

Suspension

Suspension specialists Bilstein and Eibach have developed a suspension system exclusively for PSV. The system was tested under gruelling conditions both on and off-road, including a high-speed track, cobblestones, steep inclines and waterlogged terrain. PSV replaces the entire suspension system in its vehicles to ensure maximum reliability and road safety.

Braking

Specially upgraded and optimised for use in PSV protected vehicles, our brake system ensures reliable, progressive braking performance despite the added weight of armour protection

Run flat system

Run flat systems are installed inside the tyre cavity. In the event of a puncture, they allow the vehicle to travel at speeds up to 50 km/h for up to 50 kilometres, making it possible to flee the scene even if the vehicle's tyres have been hit. The system is used by the British, German and Spanish armed forces.

Intercom

This system is hidden from view and allows 2-way communication between occupants and persons outside the vehicle without the need to open the doors or windows.

Alarm

The alarm is used to attract attention in an emergency. Once activated, the system sounds a powerful siren and causes the vehicle lights to flash. It is deactivated by means of a hidden switch inside the vehicle.

Battery Cut-Off

This system enables all non-critical vehicle systems to be deactivated so reducing the drain on the battery. This feature allows the vehicle to "hibernate" when in long term storage without damaging the battery.

Battery Protection

The vehicle batteries are completely protected with ballistic steel. The service panel can be unbolted and the batteries removed for easy maintenance. Remote positive and negative battery terminals are readily accessible

Fuel Tank Protection

The fuel tank is protected with ballistic steel. In addition, gasoline tanks are treated with explosion resistant foam that prevents detonation.

Engine Control Unit (ECU)

The vehicle's ECU is like its brain and controls the vehicle's vital functions, so is fully protected by ballistic steel.

Exhaust Protection

A grill is welded over the exhaust tail pipe to prevent foreign objects being inserted into the exhaust and rendering the vehicle inoperable.

Due to continuous development Cre8 Associates Ltd reserve the right to amend any information contained within this datasheet without prior notice.

© 04/2010 Cre8 Associates Ltd. E & OE
The contents of the datasheet must not be copied by any means without prior written agreement.



Cre8 Associates Ltd
Bruntingthorpe Proving Ground
Bath Lane
Lutterworth
Leicestershire
LE17 5QS

Tel +44 (0)1162 479787
Fax +44 (0)870 517402
enquiries@cre8-associates.com
www.cre8-associates.com

