

Universal Defense for Military Equipment

Armored Cars



Product Specification And Armoring Process



 Ballistic steel  Composit  Armored glasses



Universal Defense for Military Equipment

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Armored Cars

For decades Universal Defense has supplied armored vehicles to client's world wide. Our position as one of the market leaders is due to our specialist solutions that provide the highest possible protection to the client, an exceptional two year warranty and more than 100 years in the car manufacturing business. We have arrangements with various service centers throughout the world, that work to our rigid quality requirements, ensuring our clients of the best possible service.

Universal Defense's quality standards satisfy the requirements of the USA ,German Special Police, The Royal Family of Saudi Arabia, and The Swiss National Bank. All our manufacturers and suppliers are ISO ZERT certified companies.

In addition we have the ability and the facilities to up-armor standard civilian SUV's and pick-ups in Iraq for the civilian and military forces





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The armor solutions are produced to meet the needs of a wide variety of customers, in accordance with the ***European Ballistic Standard BS EN – 1522, Protection Level FB6 & Ballistic Standard BS EN – 1063, Protection Level BR6,***

Level B6 “Plus” = protection against AK47 7.62 X 39 API on vehicle sidewalls.

In the design of the proposed system, years of experience have been applied, with emphasis on the principles of: maximum protection, optimal weight, operational flexibility and human engineering.



General Description

In order to maintain vehicle payload, the Armor Protection Kit (APK) is comprised of advanced composite armor materials such as: *Metal Composite, PL – 2000, Ceramic Composite, Kevlar Laminate, Etc.*

The Armor Protection Kit completely encompasses the passenger & crew compartment and includes Metal Composite overlaps in areas of seams such as armored windows and door pillars.

Roof protection and firewall protection (the wall between the engine compartment and driver compartment) are included.

In order to meet the automotive performance in spite of the added kit weight, we provide an upgrade for Nissan Navarra automotive parts: **i.e. suspensions, rear springs, shocks, etc.**

Protection Areas

Opaque armor:

The Opaque armor will defeat the following threats:

- ✓ 7.62 X 51 NATO Ball & 5.56 X 45 M16 A2.
- ✓ In compliance with Ballistic Standard BS EN – 1522, Protection Level FB6.
- ✓ Including AK47 7.62 X 39 API, (Armor Piercing) ammo on vehicle sidewalls.
(Shooting Test- range at 10m, 0° Obliquity, 3 Shots at 120 mm triangle)



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Roof armor:

- ✓ Designed to defeat 7.62 X 51 NATO Ball at 68° NATO.
(Shooting Test- range 10m at 68° NATO, 3 Shots at 120 mm triangle)

Transparent armor: (Fixed Windows).

The Transparent armor will defeat the following threats:

- ✓ 7.62 X 51mm NATO Ball.
- ✓ In compliance with Ballistic Standard BS EN – 1063, Protection Level BR6.
(Shooting Test- range 10m at 0° Obliquity, 3 Shots at 120 mm triangle)

Floor Protection:

Provide protection against V50 > 600 m/s for 1.1 gram FSP, according to STANAG 2920.

Terms and Conditions:

Marking & References: There will be No Manufacture / Origin markings on the vehicle.

Rust Treatment: All Armor parts, subject to rust or corrosion, are treated accordingly.

Interior Trim: All made of Automotive Trim material & HQ finish components.

Documentation: Certificate of Conformity to be supplied.

Warranty: Armor performance - 12 months, according to the standard warranty.





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ARMOUR VEHICLE

Standard Equipment

- * FR. + RR. ELECTRICAL 12V SOCKETS
 - * STEERING LOCK
 - * TYRES: 235/85R16
 - * HEAVY DUTY COIL SPRING SUSPENSION
 - * FR. INTERMITTENT WIPER/WASHER
 - * POWER AND TILT STEERING
 - * AM/FM RADIO/CASSETTE
 - * FR. + RR. BLACK PVC BUMPERS
 - * FR. + RR. MUDGUARDS
 - * GREEN TINTED + LAMINATED WINDSCREEN
 - * SUN VISORS BOTH SIDES
 - * 2 EXT. POWER MIRRORS (chromed)
 - * INNER MIRROR DAY/NIGHT
 - * CYCLONE AIR FILTER + PRE-CLEANER
 - * SPARE WHEEL CARRIER UNDERNEATH
 - * SILVER STYLED STEEL WHEELS
 - * FUEL TANK + TRANSFER CASE PROTECTION
 - * RUST PROOFING
 - * ASSIST GRIPS FR. + RR.
 - * CLOTH FLOOR TRIM
 - * 3 CUPHOLDERS IN CENTRE FR. ARMREST
 - * BRAKES FR. VENTILATED DISCS / RR. DRUMS
 - * SPLIT FOLDABLE RR. BENCH
 - * ILLUMINATED ENTRY SYSTEM
 - * RR. PINTLE HOOK
 - * OUTSIDE THERMOMETER
 - * FR. + RR. WIPER/WASHER
 - * FR. + RR. SEATBELTS +HEADRESTS
 - * 10 CLOTH SEATS
 - * TACHOMETER
 - * SIDE STEPS
 - * DIGITAL CLOCK
 - * 3rd STOP LAMP
 - * AIR CONDITIONING
 - * CENTRAL LOCKING
 - * LOCKABLE GLOVE BOX ILLUMINATED
 - * DUAL SWING-OUT RR. DOOR
 - * TOOLKIT + JACK
 - * ENGLISH OWNER'S MANUAL
 - * 50 LTR EXTRA FUEL TANK
 - * FR. HEATER
 - * RR. QUARTER GLASS TIP-OUT
 - * MULTI-REFLECTOR HEADLAMPS
 - * H.D. BRAKES, SUSPENSION + COOLING
 - * SPEEDOMETER KM/HR
 - * RR. DOORS CHILD LOCK
 - * FR. + RR. STABILIZER BARS
 - * DIGITAL TRIP/ODOMETER
 - * IMMOBILIZER
 - * CHROMED RADIATOR GRILL
 - * LIMITED SLIP DIFFERENTIAL
 - * RR. WINDOW DEFOGGER
 - * HEAVY DUTY BATTERY 95D31
-





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1. ARMOURING LAYOUT

All original paneling, as listed below, is removed and those areas are lined with armored steel. Once installed, the original paneling is refitted. All original glass is removed and replaced with curved bullet resistant glass. Concealed armoring help the vehicle appear almost unchanged to the average eye.

2. PROTECTED AREAS WITHIN THE VEHICLE

- 1.1** The inner trimmings, dashboard and seats of the vehicle are removed, all armor is fitted behind, and the components are re-fitted.
- 1.2** A curved bullet resistant windscreen will be supplied.
- 1.3** The firewall and foot well will be armored steel.
- 1.4** Composite armor will be fitted to driver and all passenger doors
Against AK 47 7.62x 39 ps1943
M 16 5.56x45 M193
NATO 7.62x 51 M 80
- 1.5** A, B & C Pillars, on both sides of the vehicle, will be armored internally
- 1.6** The driver window will be allowed to open and close approximately 120mm
- 1.7** All other bullet resistant glass will be fixed in place. You will therefore not be able to open the windows except the driver's window.
- 1.8** Overlapping armor will be fitted around the door apertures to avoid any gaps
- 1.9** The rear part armored with partition.
- 1.10** All re-trimming will be done in the original color
- 1.11** The original locking system is retained.
- 1.12** Fuel tank will be armored only in gasoline type.
- 1.13** Roof armor will be provided at an angle of incidence defeating level IIIA NIJ
- 1.14** Run flat tire protection may be fitted (x4)
- 1.15** Floor protection with "Bomb-Blast". Defeating level IIIA NIJ.



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3. PROTECTION LEVELS – LEVEL B6+

Type	Class	Weapon/Ammunition	Range	Velocity	Shots	Spacing
Light Armoured Vehicles	B2	9mm 	5	400m/s	3	120mm
	B3	357 magnum 	5	430m/s	3	120mm
	B4	44 magnum 	5	440m/s	3	120mm
Fully Armoured Vehicles	B4+	AK47 ball 7.62 x 39 	10	710m/s	3	120mm
	B5	5.56 x 45 Steel core SS109 round 	10	950m/s	3	120mm
	B6	7.62 x 51 ball 	10	830m/s	3	120mm
	B6+	5.56 x 45 Lead M193 round 	10	980m/s	3	120mm
Armour Piercing	B7	7.62 x 51 AP 	10	820m/s	3	120mm
		AK47 7.62 x 39 AP 	10	715m/s	3	120mm





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4. WARRANTY

We offer a full “swoop out” on any defective workmanship for a full 12 months from date of purchase. On collection of the vehicle(s) a thorough inspection is carried out by both parties. Once the vehicle has been signed off all replacement glass is for the client’s account.

Please bear in mind that an armoured vehicle is a specialized product, and is different to a regular vehicle in many ways. Certain areas of the vehicle have been upgraded to enhance performance, but the additional weight of the armouring that is fitted for your protection, means that tires, brakes, suspension door hinges, window winder mechanisms, windscreen wipers and other systems are placed under more strain. For this reason, it is advisable to have these items checked at every service, oiled, tightened and adjusted where necessary to ensure continued reliability and security.

In some cases, handling characteristics of the vehicle may require special attention with regard to driver training, which we would be happy to advise on. It is a condition of the warranty that all necessary repairs are carried out by us or an authorized workshop.

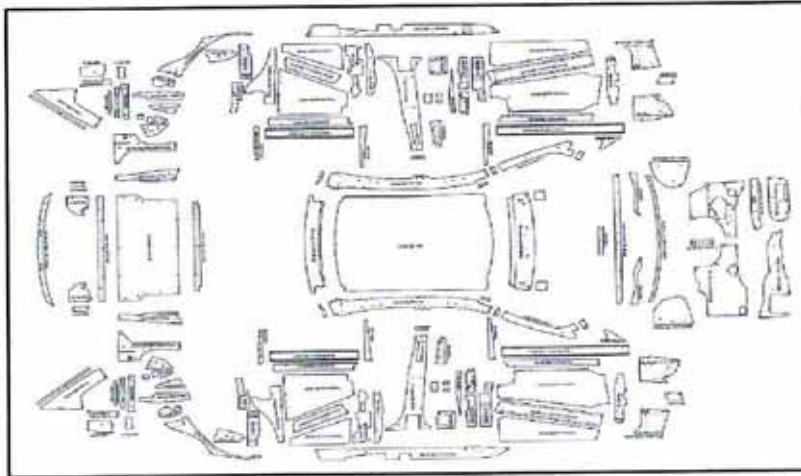




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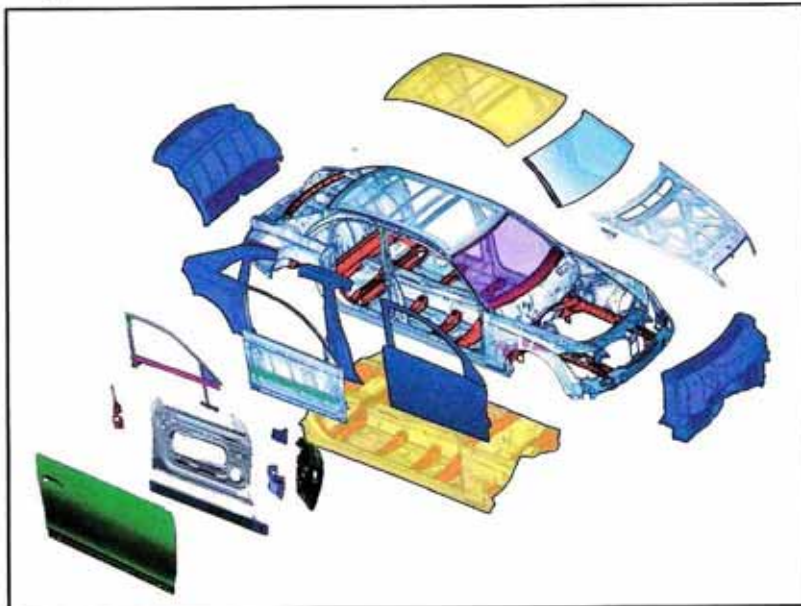
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5. Car Armoring Process



For a maximum protection we develop an **Integrated Safety Cell** including integrated ballistic elements in the basic structure of the vehicles.

This system covers the critical areas against different angle shots and blast.



All armor system are CAD drawn and documented.



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Armoring Process

Removal of body parts and all interior components.



Preparing of the basic structure for the integrated ballistic elements.





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Installation of the integrated ballistic elements.





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Installation of the armor plates.





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Modification of doors and installation of the electric window lifter.



Reinforcement of the hinges.





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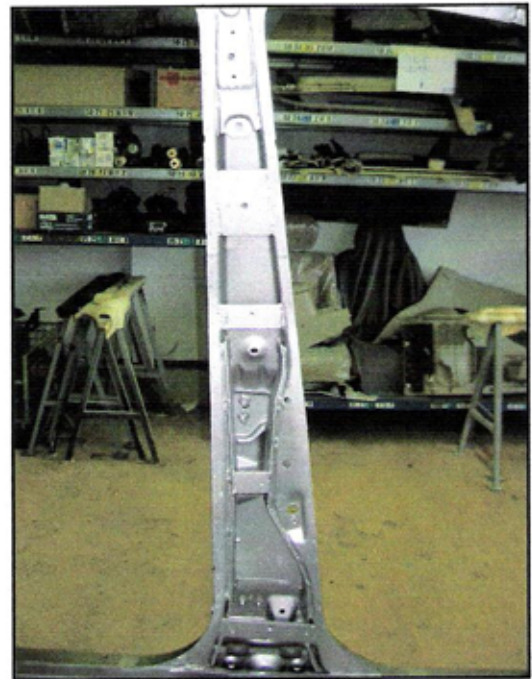
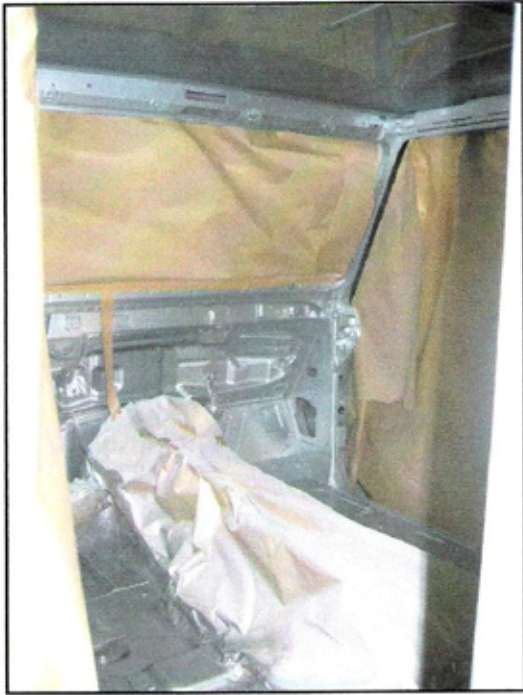
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Antirust protection and painting of all
steel plates and of the body shell.





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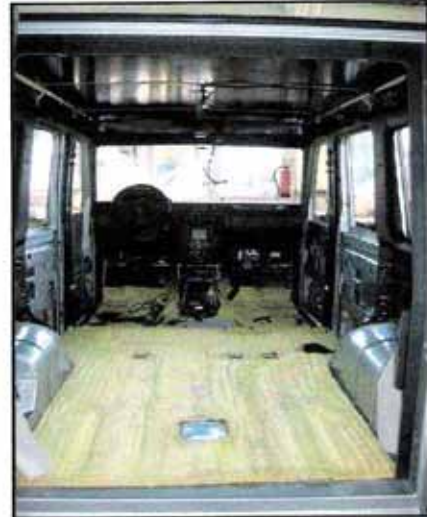
Installation of the finished steel plates.





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Installation of the floor armoring.



Protection of the batteries and of the electronic units.





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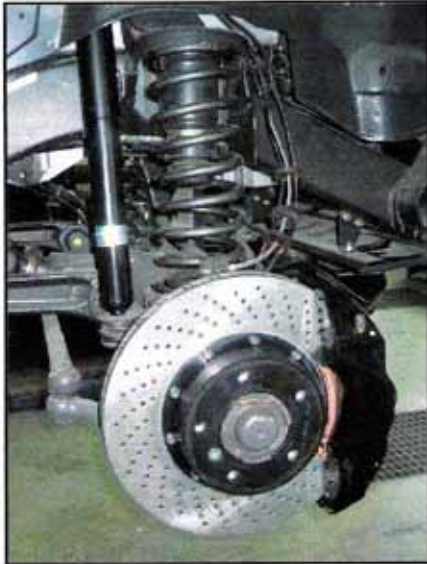
Interior work and assembly.





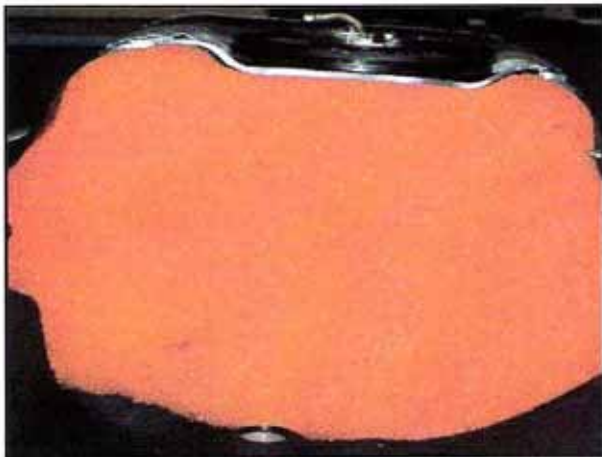
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Options



Modification of suspension
and brake system

Runflat system



One or two Explo-safe or
selfsealing tanksystem(s)



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Intercom and siren

Switch PA-System



Anti-kill-switch



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Emergency exit through
the rear partition





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Final inspection



The final inspection includes also a off-road test track.



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TESTING AND CERTIFICATION

All ballistic and antiblast materials, used by UDME are continuously tested by independent, third party authorities such as German Beschussamt or HP White.

The testing and certification meets the

European Norm CEN 1522

and the

US Norm NIJ/UL-752

for bullet and blast resistant materials.





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 Baden-Württemberg Landesgewerblich- Industriemuseum		Beschussamt Ulm  Staatliche Prüf- und Zertifizierungsstelle für Waffen- und Sicherheitstechnik Legal verification and certification office for weapons and security engineering
<hr/>		
Zertifikat - Certificate S 04 0098 01 / Z		
<hr/>		
Durchschusshemmende plattenartige Materialien Bullet resistant plate materials		
<hr/>		
Antragsteller Proposer:	WBA Heusel GmbH, 72379 Hechingen	
Hersteller Producer:	SSAB, SE-61380 Oxelösund (Stahl) Verseidag, D-47803 Krefeld (Liner)	
Ort und Datum der Prüfung Place and date of the test:	89081 Ulm, 17.06.2004	
Prüfanforderung und Verfahren Test request and method:	Nach Vorgaben des Antragstellers According to proposer's specification	
Gegenstand der Zertifizierung Object of certification:	Stahl-Liner-Verbundplatte 500 x 500 x 19,20 mm Steel-liner-composite 500 x 500 x 19,20 mm	
Typenbezeichnung Product reference:	WBA 300/110	
Ergebnis Result:	Der Prüfgegenstand erfüllt die Anforderungen der Kundenspezifikation The test sample fulfills the requirements of the proposer's specification	
<hr/>		
Details der Kundenspezifikation siehe Prüfbericht-Nr. Details of the proposer's specification see report-no.		
S 04 0098 01 /B		
<small>Zertifikate ohne Unterschrift und Dienstsiegel haben keine Gültigkeit. Dieses Zertifikat darf nur vollständig und unverändert weiterverbreitet werden. Auszüge oder Änderungen bedürfen der Genehmigung des Beschussamtes Ulm. Der Prüfbericht ist Bestandteil des Zertifikats. Certificates without signature and seal are invalid. This certificate may only be copied or reproduced in its entirety and without modifications. The use of parts of this certificate or modifications are only allowed with the express consent of the Beschussamt Ulm. The test report is a component of this certificate.</small>		
<hr/>		
Ulm, den 03.08.2004		
		
 Kling Zertifizierungsstelle Beschussamt Ulm Certification body of the Proof House		

Beschussamt Ulm
Albstraße 74
89081 Ulm
Tel.: 0731 9 28 51-0
Fax: 0731 9 68 51-99
beschussamt@gabw.de

Akkreditierte Prüf- und
Zertifizierungsstelle



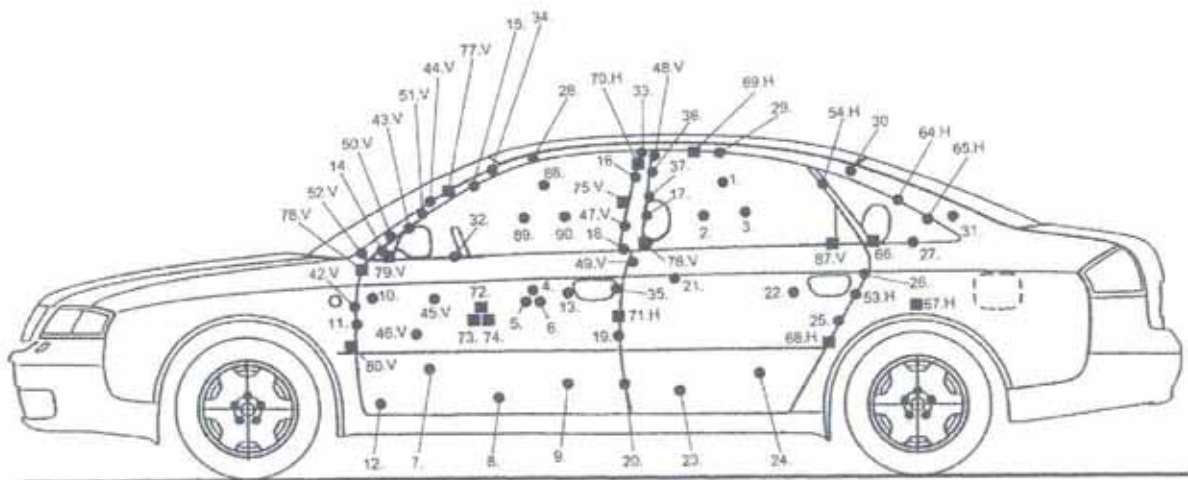


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Blast testing and certification is made for two German handgrenades DM 51 and higher levels of threat, such as M67.



In addition to the „official testing“ UDME frequently testing all materials and in some instances complete vehicles at our own facilities or at the German Beschussamt.



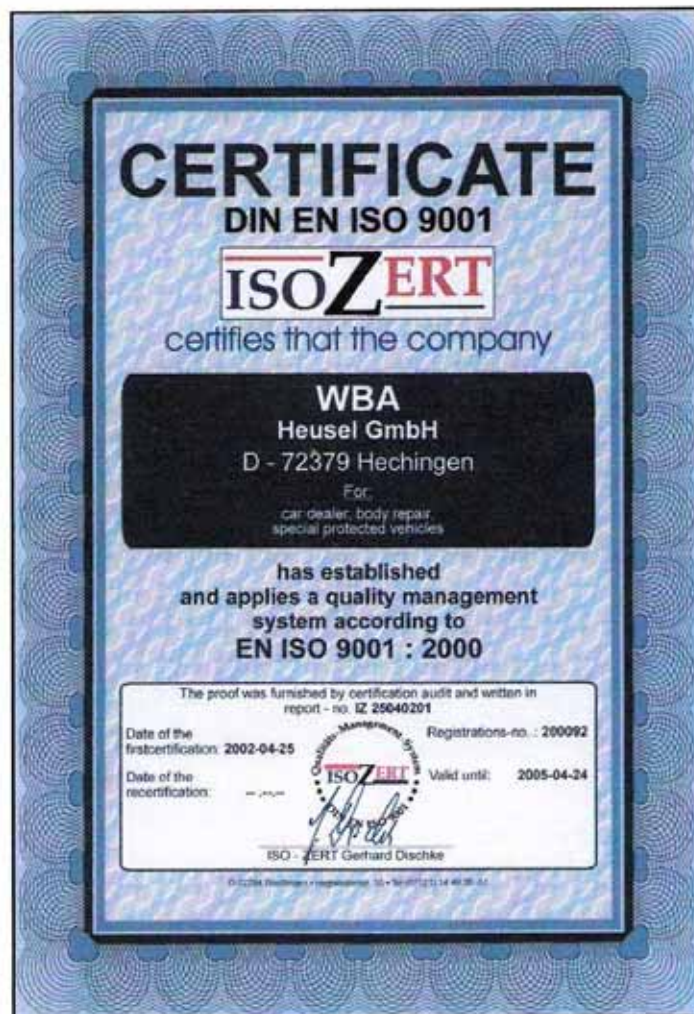


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To guarantee maximum quality WBA[®] Mèxico and WBA[®] Germany have obtained the Quality Management System according

DIN EN ISO 9001

UDME supplies to various Government including U.S. Government agencies and the United Nations.





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Pictures





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Thank You for Choosing
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