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VIBRATORY PLATE

DPU 2950

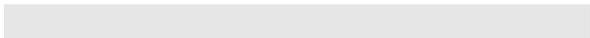
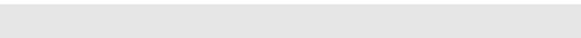
DPU 2960

DPU 2970

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0007881 100
0007883 100
0007880 100

Operator's Manual

Type	Item no.
DPU 2950	0007881 ...
DPU 2960	0007883 ...
DPU 2970	0007880 ...



Foreword

For your own safety and protection from bodily injuries, carefully read, understand and follow the safety instructions in this manual.

Please operate and maintain your Wacker machine in accordance with the instructions in this manual. Your Wacker machine will reward your attention by giving trouble-free operation and a high degree of availability.

Defective machine parts are to be replaced as soon as possible.

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We expressly reserve the right to technical modifications- even without express due notice - which aim at improving our machines or their safety standards.

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SAFETY INSTRUCTIONS FOR THE USE OF VIBRATORY PLATES WITH COMBUSTION ENGINES

General instructions

1. Vibratory plates may only be operated by persons who
 - * are at least 18 years of age
 - * are physically and mentally fit for this job
 - * have been instructed in guiding vibratory plates and proved their ability for the job to the employer
 - * may be expected to carry out the job they are charged with carefully.
 The persons must be assigned the job of guiding vibratory plates by the employer.
2. Vibratory plates may only be used for compaction jobs. Both the manufacturer's operating instructions and these safety instructions have to be observed.
3. The persons charged with the operation of vibratory plates have to be made familiar with the necessary safety measures relating to the machine. In case of extraordinary uses the employer shall give the necessary additional instructions.
4. It is possible that this vibratory plate exceeds the admissible sound level of 89 dB (A). According to the rules for the prevention of accidents regarding emission of noise, the employees have to wear ear protection if the sound level reaches 89 dB (A) or more.

Operation

1. When starting a diesel engine with a starter crank make sure you have assumed a proper position with respect to the engine and that your hands are placed properly on the crank.
 -  **ATTENTION!** Only use the original engine manufacturer's safety starting crank.
To avoid a possible return kick, turn safety starting crank through with full force until the engine starts running.
2. The functioning of operating levers or elements is not to be influenced or rendered ineffective.
3. During operation the operator may not leave the control elements.
4. The operator has to stop the engine of the vibratory plate before going on breaks. The machine has to be placed such that it cannot turn over.
5. Stop engine before filling fuel tank. When refilling fuel tank, do not allow fuel to come into contact with the hot parts of the engine or spill onto the ground.
6. Do not smoke or handle open fire near this machine.
7. The tank lid must fit tightly. Shut off fuel cock, if available when stopping the engine. For long distance transports of machine operated by fuel or fuel - mixtures, the fuel tank has to be drained completely.
 -  **ATTENTION!** Leaky fuel tanks may cause explosions and must therefore be replaced immediately.
8. Do not operate the machine in areas where explosions may occur.
9. Make sure that sufficient fresh air is available when operating vibratory plates with combustion engines in enclosed areas, tunnels, adits and deep trenches.
10. During operation keep your hands, feet and clothes away from the moving parts of the vibraton plate. Wear safety shoes, and eye protection glasses in case of trench operation where falling sand stones maybe ejected.
11. When working near the edges of breaks, pits, slopes, trenches and platforms, vibratory plates are to be operated such that there is no danger of their turning over or dropping in.

12. Make sure the soil or subsoil to be compacted has a high enough load carrying capacity.
13. Use appropriate protective clothing while working or while carrying out maintenance work.
14. When traveling backwards the operator has to guide the vibration plate laterally by its guide handle so that he will not be squeezed between the handle and a possible obstacle. Special care is required when working on uneven ground or when compacting coarse material. Make sure of a firm stand when operating the machine under such conditions.
15. Vibratory plates are to be guided such that hand injuries caused by solid objects are avoided.
16. Vibratory plates have to be guided such that their stability is guaranteed.
17. Machines with integrated transport trolley may not be parked or stored on the trolley. This device has only been designed to transport the machine.

Safety checks

1. Vibratory plates may only be operated with all safety devices installed.
2. Before starting operation, the operator has to check that all control and safety devices function properly.
3. Immediately notify your supervisor or superintendent if you have determined defects in the safety devices or other defects which could endanger the safe operation of the machine or which could endanger the environment.
4. In case of defects jeopardizing the operational safety of the vibration plate, the machine has to be stopped immediately.
5. Process materials and operating fuels must be stowed away in receptacles or containers marked according to the respective manufacturers specifications.

Maintenance

1. Only use original spare parts. Modifications to this machine, including the adjustment of the maximum engine speed set by the manufacturer, are subject to the express approval of Wacker. In case of non-observance all liabilities shall be refused.
2. All drive units have to be switched off before carrying out maintenance jobs. Deviations from this are only allowed if the maintenance or jobs require a running engine.
3. When working on vibratory plates equipped with electric starter, disconnect battery before carrying out maintenance or repair jobs on the electric parts of the machine.
4. Remove pressure from hydraulic lines before working on them. Caution: take care when removing hydraulic lines, for the oil may be very hot (up. over 80° C). Precautions are to be taken to prevent oil from splashing into the operator's eyes.
5. As soon as maintenance and repair jobs have been completed all safety devices have to be reinstalled properly.
6. Do not hose down the machine with water after each use to avoid possible malfunctions. Do not use high pressure washers nor chemical products.

Transport

1. During transport, loading and unloading of vibration plates by means of lifting devices, appropriate slinging means or hooks have to be used on the lifting points provided for this purpose on the vibratory plate.
2. The load-carrying capacity of the loading ramps has to be sufficient and the ramps have to be secure such that they cannot turn over. Make sure that no one be endangered by machines turning over by slipping or by moving machine parts.
3. When being transported on vehicles, precautions have to be taken that vibration plates do not slip or turn over.

Maintenance checks

According to the conditions and frequency of use, vibratory plates have to be checked for safe operation at least once a year by skilled technicians, such as those found at Wacker-service depots and have to be repaired if necessary.

Please also observe the corresponding rules and regulations valid in your country.

		DPU 2950	DPU 2960	DPU 2970
Item no.		0007881 ...	0007883 ...	0007880 ...
Lowest working height	mm:	790		
Size of base plate (width x length)	mm:	500 x 700	600 x 700	700 x 700
Operating weight	kg:	192	198	203
Power transmission		From drive engine via centrifugal clutch and V-belts direct to exciter		
Exciter				
Vibrations	min ⁻¹ (Hz):	approx. 5400 (90)		
Multigrade oil		SAE 10 W 40		
Drive motor		Air-cooled single-cylinder 4 stroke diesel engine		
Piston displacement	cm ³ :	353		
Engine speed	min ⁻¹ :	2850 + 100		
Oil		SAE 10 W 40		
Fuel		Diesel		
Fuel consumption	l/h:	1,2		
Tank capacity	l:	5		

The required sound specifications, called-for by the EC-Machine Regulations per Appendix 1, Paragraph 1.7.4.f, are

- sound pressure level at the operator's location $L_{pA} = 95 \text{ dB(A)}$

The sound values were determined according to ISO 3744 for the sound power level (L_{wA}) and, alternately, ISO 6081 for the sound pressure level (L_{pA}) at the operator's location.

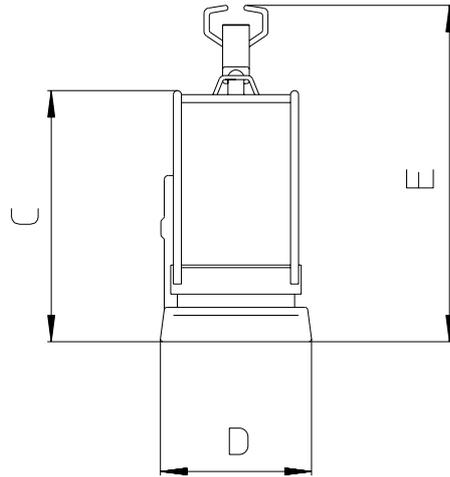
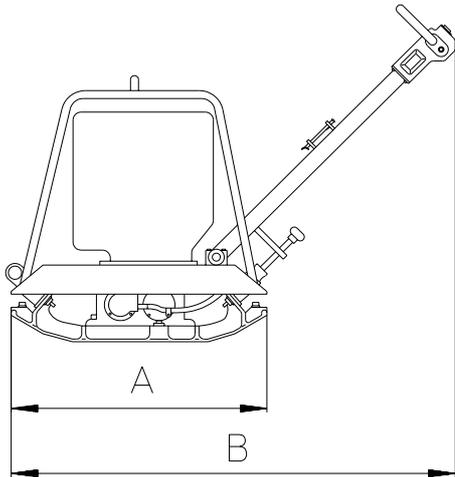
The weighted effective acceleration value, determined according to ISO 8662, Part 1, is $7,5 \text{ m/s}^2$.

The sound and vibration measurements were carried out and obtained with the machine working on crushed gravel at nominal engine speed.

Field of application

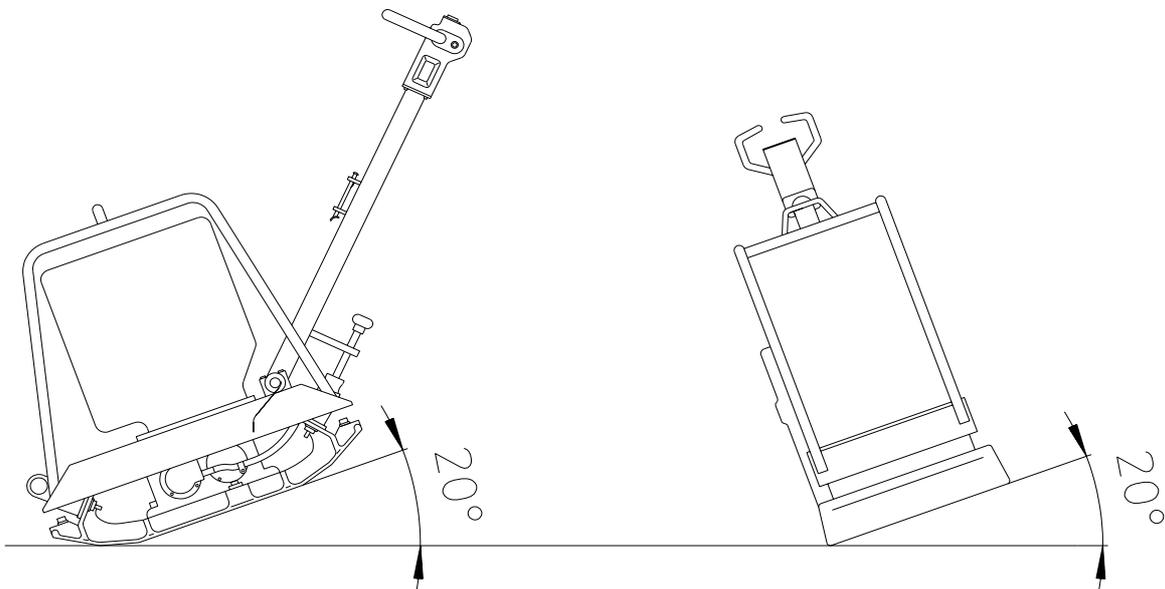
The DPU 2950/2960/2970 are suited to compact all kinds of soils, even cohesive soils in trench and surface compaction. They are also suited to compact blacktop surfacings and to vibrate interlocking paving stones. Due to its optimum ratio of centrifugal force to contact area the DPU 2950 is the machine of this series which can be most universally used. The DPU 2960/2970 is used whenever high area capacity is required.

Dimensions



	DPU 2950	DPU 2960	DPU 2970
A	700	700	700
B	1380	1380	1380
C	780	780	780
D	500	600	700
E	1020	1020	1020

Max. admissible inclination



Maintenance schedule

Check all external screw connections for tight fit approx. 8 hours after first operation.		
Parts	Maintenance jobs	Maintenance interv.
Air filter Engine Exciter	Oil bath air filter - Check oil pan for oil level and dirt. Clean or top up if necessary. Dry-type air filter - see visual maintenance display, clean or replace filter cartridge if necessary. Check oil level, top up if necessary. Check crank and crank carrier for correct fastening. Check for tightness.	daily
Engine	First oil change.	after 25 hours
Other parts	Grease moveable locking device, and spindle for pole height adjustment.	weekly
Tow-bar head V-belt Other parts	Check oil level, top up if necessary. Check V-belt tension - retension, if need be. Check fastening screws of protective frame and central suspension for tight fit.	monthly
Engine Exciter	Further oil changes. Checking coolings fins for dirt-clean dry if necessary. Tighten all accessible screw connections. Oil change.	after 150 hours
Valve clearance Injection nozzle	Check, set to 0,1 mm when motor is cold. Function check 200 bars.	after 300 hours

Service instructions

1. Adjusting the V-belt tension

(First and most important adjustment after the first 5 to 20 hours of operation).

Remove belt guard. Remove nuts situated on the motor V-belt pulley, remove V-belt pulley half. Remove necessary number of spacers (the removal of one spacer is usually sufficient). Install the removed spacers on the outside of the V-belt pulley. (If one washer is removed, install it on the outer half of the pulley, of two, one on the outer and one on the inner V-belt pulley half, etc.). This V-belt alignment is maintained. Install spring washers in a way such that the large diameter comes to lie on the motor V-belt pulley. Loosen nuts and under continual rotation of the motor V-belt pulley tighten nuts alternately.

2. Lubricating the exciter

On delivery of the machine, the exciter is filled with oil. Change oil after every 250 hours of operation, use approx. 0,75 liter SAE 10 W 40 oil. For this purpose place vibration plate on level ground. Remove drain plug (red). Correct oil level: Oil should reach the lower flange of the threaded hole.

Hydraulic control

When checking the oil level in the motor and exciter, also check oil level in the centre pole head and top up if necessary (Top up to mark when centre pole is in vertical position). If there is too much oil in the centre pole head the reverse motion is hard to engage. If the quantity of oil is insufficient the advance speed is reduced. We use hydraulic oil Fuchs Renolin MR 520 suitable also for low temperatures in the hydraulic systems as standard.

Mounting instruction

1. Exciter

When disassembling exciter components, always remove eccentric weights first. When assembling, the eccentric weights have to be installed last of all. When installing exciter shafts mind marking of toothed gears. Assembly of exciter shaft is correct when all eccentric weights point down while piston is at half stroke. During assembly of eccentric weights on exciter shaft, keep shafts blocked to avoid pinching of fingers. Tighten all screws with the prescribed torque, mind qualities of screws (see screw head).

2. Hydraulic control

Bleed hydraulic system after having topped up with oil, then check oil level again (total quantity required approx. 1,3 liters).

3. Bleeding

Place handle into vertical position. Slightly pull back control lever and let it go again. Open bleeding screw on control housing at exciter until no air bubbles appear in oil. Tighten bleeding screw again.

4. Centre pole head

 **ATTENTION!** When disassembling the centre pole head, please mind that the piston is installed under spring tension. When assembling, locate toothed rod in toothed gear in a way such that the handle is set a 90° to the centre pole head when piston is fully extended.

5. Test-run equipment for approx. 5 min. to bleed air from system.

Starting operating

1. Motor

Check oil level, top up with oil if necessary, use HD-brand oil SAE 10 W 40. Do not change from one brand to the other. Top up with oil to upper mark of dip stick (1,2 l).

2. Oil bath air filter

- a) Before starting operation fill with oil mark in oil pot.
- b) Clean oil bath air filter when working under very dusty conditions. Rinse filter in fuel, shake it carefully and let it drip dry for approx. 15 minutes. Top up with oil.

3. Maintenance

Motor: First oil change after 25 hours of operation, thereafter, after every 150 hours of operation:

- a) Clean oil bath air filter.
- b) Check valve clearances adjust if necessary when motor is cold, see "Information regarding the motor".
- c) Replace fuel filter. When installing new filter make sure that the direction of flow of the new filter is correct, (see arrow).

4. Starting the motor

5. Stopping the motor

Do not stop motor while under full load. Reduce load first and let it idle for a short while, then stop motor by means of speed lever.

Instructions regarding the motor

1. Adjusting the valve clearance

The valve clearance should be 0,1 mm when the motor is cold. To adjust clearance when motor is cold, proceed as follows:

- a) Place decompression lever downwards in vertical position. Remove cylinder head cover, turn motor in direction of rotation until you feel resistance of compression.
- b) Check valve clearance - between rocker arm and valve stem. Use feeler gauge, thickness 0,1 mm.
- c) If valve clearance is not correct, loosen hexagon nut. Use screw driver to adjust setting screw such that after adjusting the nut, the feeler gauge can be pulled through between the rocker arm and the valve stem. Slight resistance should be felt when doing so.

2. Adjusting the decompression device

The decompression device is to be adjusted if the motor is not decompressed when the decompression lever is in position 1 (approx 45° to the left or right from its vertical downward position). To adjust decompression proceed as follows:

- a) Remove cylinder head cover.
- b) Turn motor in direction of rotation until you feel resistance of compression (same position as to adjust valve clearance).
- c) Turn decompression lever into direction of rotation. Turn is by approx. 60° (until it locks in position).
- d) Loosen locking nut (M 6) and setting screw on rocker arm until the latter can be moved.
- e) Turn setting screw to the right until rocker arm touches the valve stem.
- f) In this position continue to turn setting screw by an additional 1/4 of a turn (90°). Lock setting screw by tightening the nut.

Notes on automatic decompression system

The engine has been provided with an automatic decompression system to ease starting.

 **ATTENTION!** Avoid damage to the system by turning decompression lever only in direction of arrow (see fig. 1).

Engine start

- 1) Open to full throttle.
- 2) Decompression lever in vertical position (as in fig. 1).
- 3) Pull starter knob.
- 4) Insert starting crank (oil gliding parts).
- 5) Turn automatic decompression lever approx. 90° in direction of arrow until a first clicking sound denotes engaging of automatic system.
- 6) Stand sideways to the engine, feet slightly apart, and on the side in which the crank will be moved to from its lower position (fig. 2).
- 7) Place one hand on the equipment to brace yourself and turn crank with other hand.

 **ATTENTION!** While cranking, always keep firm grip on crank handle to avoid sudden slippage.

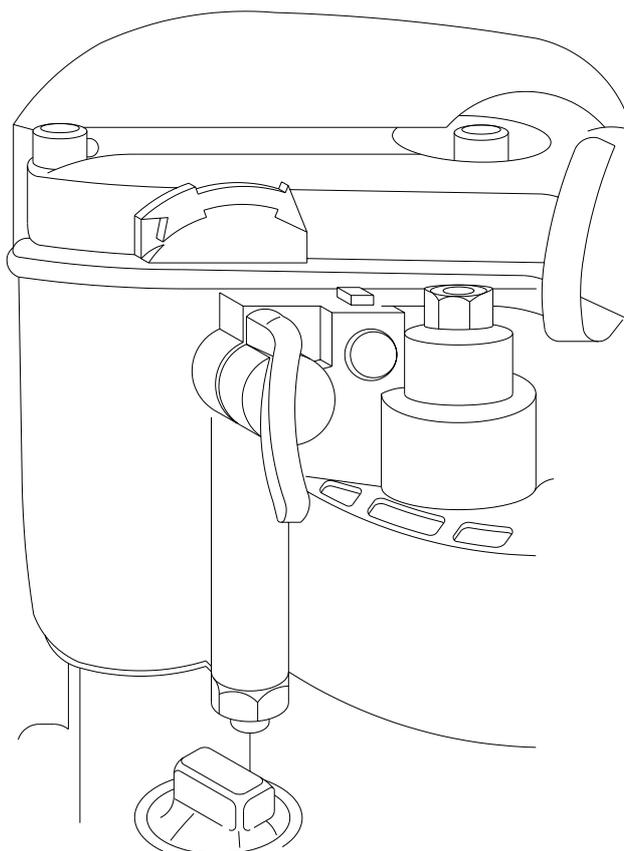


Fig.1

- 8) Turn crank slowly at first until catch grabs, then turn always faster.

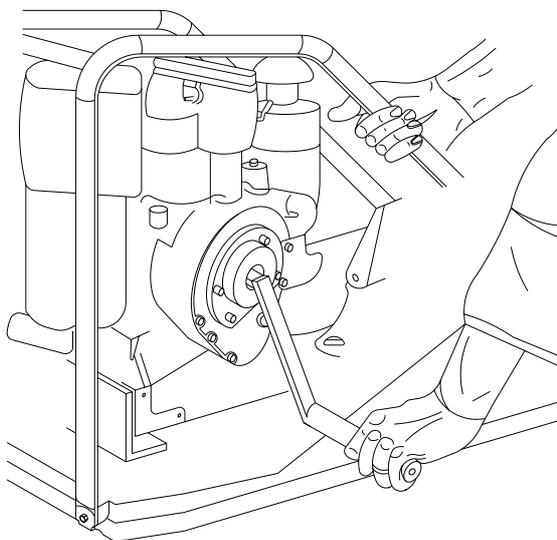


Fig. 2

- 9) When automatic decompression lever returns to its vertical position, highest crank turning speed must have been reached. Engine fires up and reaches maximum rpm's. Starter knob returns to initial position automatically.

ATTENTION! If cranking procedure is too slow, engine may start up in wrong direction. Air will be sucked in through the exhaust and the air filter turns into an exhaust. Fire hazard! Turn off engine and start cranking procedure again.

Pull starting crank out as soon as the engine starts running. Then set engine's rpm's to idle. Let engine warm up for 7 minutes before starting with the actual compaction job.

ATTENTION! Use of starting aids, such as starting sprays, is forbidden (even in extremely cold temperatures) because they are very dangerous. Single out defective cranks (e.g. damaged claws, missing handle tubes) and replace.

Warning: Incorrect starting procedures, i.e. all possible and imaginable deviations from the above mentioned, may lead to bodily injury!

Additional suggestions for starting at very low temperatures

- Insert crank correctly, turn automatic decompression lever to first notch and turn engine "free", i.e., while decompressed, turn engine over 10 to 20 times with crank. By doing this, the resistance to turn of the engine will diminish due to the change in the viscosity of the lubricating oil. Simultaneously the correct functioning of the injection nozzle (rattling) and the jetting of the fuel may be heard.
- Under extremely low temperature conditions (below -5°C), starting oil dosification device should be used. For engines up to approx. 6 kW (8 HP) up to 2 dosages, over 6 kW (8 HP) up to 3 dosages.

ATTENTION! A higher than recommended dosage could lead to a back-swing of the crank.

EC - CONFORMITY-CERTIFICATE

Wacker Construction Equipment AG , Preußenstraße 41, 80809 München

hereby certify that the construction equipment specified hereunder:

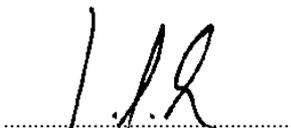
1. Category: **Vibratory plate**
2. Type: **DPU 2950 / DPU 2960 / DPU 2970**
3. Equipment item number: **0007881 ... / 0007883 ... / 0007880 ...**
4. absolute installed power: **4,1 kW**

has been evaluated in conformity with Directive 2000/14/EC:

Conformity assessment procedure	At the following notified body	Measured sound power level	Guaranteed sound power level
Annex VIII	VDE Prüf- und Zertifizierungsinstitut Zertifizierungsstelle Merianstraße 28 63069 Offenbach/Main	106 dB(A)	108 dB(A)

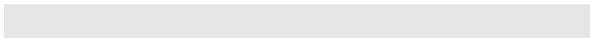
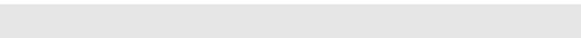
and has been manufactured in accordance with the following directives:

2000/14/EG
98/37/EG
EN 500-1
EN 500-4


.....
Dr. Sick
Board of Directors

File certificate carefully





VDE Prüf- und Zertifizierungsinstitut

VDE VERBAND DER ELEKTROTECHNIK
ELEKTRONIK INFORMATIONSTECHNIK e.V.

CERTIFICATE

Registration Number 6236/QM/06.97

This is to certify that the company

WACKER



Wacker Construction Equipment AG
Wacker-Werke GmbH & Co. KG

with the locations

Head Office Munich
Preussenstr. 41
80809 München

Production plant Reichertshofen
Karlsfeld logistics centre
Sales regions with all branches all over Germany

has implemented and maintains a
Quality System for the following scope

Machine manufacture
Construction machines

This Q System complies with the requirements of

DIN EN ISO 9001:2000

This Certificate is valid until 05.06.2006

VDE Testing and Certification Institute
Certification

D-63069 Offenbach/Main, Merianstraße 28
Date 02.06.2003

The VDE Testing and Certification Institute is accredited by DAR Accreditation Bodies
according to DIN EN 45012 and notified in the EU under ID. No. 0366.



