Megger

HV Test Set (digital)
50 / 80 / 110 / 120 kV

Operating manual

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FORWORD

ADVICE FROM MEGGER

These Operating Instruction are intended to help you solve any questions and problems as fast and easily as possible. Please start with reading the manual whenever some problem should arise.

If, however, some question should remain unanswered, please contact one of the following addresses:

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TERMS AND CONDITIONS OF WARRANTY

Megger will accept a warranty claim brought forward by a customer for a product sold by Megger under the terms stated below.

Megger guarantees that at the time of delivery Megger products are free from faults in material and workmanship which would reduce their value and serviceability to a large degree. This warranty does not cover any error in the software supplied. During the warranty period Megger will repair faulty parts or replace them with new parts or parts as new (with the same usability and life as new parts) at their discretion.

Further warranty claims, in particular those from consequential damage, cannot be accepted. Each component and product replaced in accordance with this warranty becomes the property of Megger.

All warranty claims versus Megger expire after a period of 12 months from the date of delivery. Each component supplied by Megger in the context of warranty will also be covered by this warranty for the remaining period of time, but at least for 90 days.

Each measure to remedy a warranty claim must be carried out exclusively by Megger or one of their authorised service stations.

It is a precondition for accepting a warranty claim that the customer complains about the fault, in a case of an immediately detectable fault within 10 days from the date of delivery.

This warranty does not cover any fault or damage caused by exposing a product to conditions which are not in accordance with this specification, by storing, transporting or using it improperly, or having it serviced or in-stalled by a workshop not authorised by Megger. No claim will be ac-cepted in case of wear and tear, will of God, or connection to foreign components.

For any damage resulting from a violation of their duty to repair or re-supply items, Megger can be made liable only in case of severe negligence or intention. Any liability for slight negligence is disclaimed.

CONTENST

CHAPTER 1

GENERAL

1. GENERAL

The HV Test Set is a generator of high direct voltages.

The insulation of cables, electrical plant and plant components can be tested for electric strength with this set. The insulation resistance of test objects can be determined by measuring current and voltage using integrated measuring instruments.

Thanks to its small size and low weight, the HV Test Set, which consists of a operation unit and an HV unit, is portable and can be used directly on site. The clear arrangement of controls and displays makes the set comfortable to handle.

A special protective ground circuit ensures a high level of safety.

1.1 Safety instructions

All persons involved in the transport, installation, operation, maintenance and repair of this system must have read this user manual carefully.

The system and its accessories are in accordance with the current state of safety technology at the time of delivery. Owing to the work process involved, however, there may be parts of the system and its peripherals which cannot be given optimum protection without an unreasonable reduction in function and usability.

The following safety instructions must be complied with.

GENERAL INSTRUCTIONS

Work on this system and its peripherals must only be performed by qualified and/ or trained staff. Other persons must be kept away.
This user manual must be available for the supervisory, operating and maintenance staff to refer to.
Improper use may endanger life and limb, the system and connected equipment, as well as the efficient functioning of the system.
Always use correct tools in perfect condition.
Checks must be made to ensure that the relevant safety regulations are being complied with.
Only operate the system if it is in technically perfect condition.
No non-original parts may be used for the system and its peripherals, as the necessary safety will not be guaranteed. No mode of working which detracts from the safety of the system must be used.
The user is under an obligation to report any changes in the system to the supervisor responsible without delay.

ELECTROTECHNICAL INSTRUCTIONS

The system and all additional equipment must be connected properly. The relevant DIN and VDE regulations must be complied with.

Maintenance work must only be carried out when the system is switched off (dead) and then only by qualified and/ or trained staff.

1.2 Indications used in the description

Important instructions concerning personal protection, work safety and technical safety are indicated as follows:

WARNING: Warning indicates work and operating procedures which must be complied with in full to exclude the possibility of persons being put at risk. This includes instructions concerning particular dangers when handling the system.

Attention: Attention indicates work and operating procedures which must be complied with in full to prevent the system/ peripherals from being damaged or destroyed

N.B.: N.B. indicates special technical requirements to which the user must pay particular attention when using the system.

CHAPTER 2

TECHNICAL DESCRIPTION

2. TECHNICAL DESCRIPTION

2.1 Description of the set

2.1.1 Set versions

Three set versions with different maximum voltages are available:

HV Test Set 50:	max. DC test voltage 50 kV
HV Test Set 80:	max. DC test voltage 80 kV
HV Test Set 110:	max. DC test voltage 110 kV
HV Test Set 120:	max. DC test voltage 120 kV

2.1.2 Scope of supply

The scope of supply includes the following:

		50 kV	80 kV	110 kV	120 kV
Item	**Description**	**Article no.**	**Article no.**	**Article no.**	**Article no.**
00001	Operation unit	950200	950200-1	950200-2	950200-03
00002	Leather case for operation unit	02104	02104	02104	02104
00003	High-voltage unit	950201	950201-1	950201-2	950201-3
00004	HV attachment	950203	950203	950203	950203
00005	Connecting cable, high-voltage unit to operation unit (permanently attached to operation unit)	60005	60005	60005	60005
00006	Cable 3 (blue), lead for high-voltage unit	60003	60003	60003	60003
00007	Cable 2, operation ground cable, high-voltage unit to station ground, black	60002	60002	60002	60002

		50 kV	80 kV	110 kV	120 kV
Item	**Description**	**Article no.**	**Article no.**	**Article no.**	**Article no.**
00008	Cable 1, ground cable, operation unit to station ground, green/yellow	60001	60001	60001	60001
00009	Discharge rod	9540021	9540022	9540023	9540024
00010	Cable 4, ground cable for discharge rod	60004	60004	60004	60004
00011	Case for discharge rod	02106	01206	02106	02106
00012	User manual	06001	06001	06001	06001
00013	Service kit	950204	950204	950204	950204
00014	Packing	02004	02004	02004	02004

Table 2.1 Scope of supply

2.1.3 Use of the set

The HV TEST SET is used for electrical testing of power cables and plant with direct voltage. Areas of application include:

- Testing newly laid cables before initial use
- Testing disconnected cables
- Regular cable testing
- Testing electrical equipment

The following test voltages are prescribed by DIN VDE 0276 part 621 for testing with direct voltage:

Nominal voltage Vo/U in kV/kV	3.6/6	6/10	12/20	18/30	20.8/36
DC test voltage in kV	20-29	34-48	67-96	76-108	87-124

Table 2.2 Test voltages

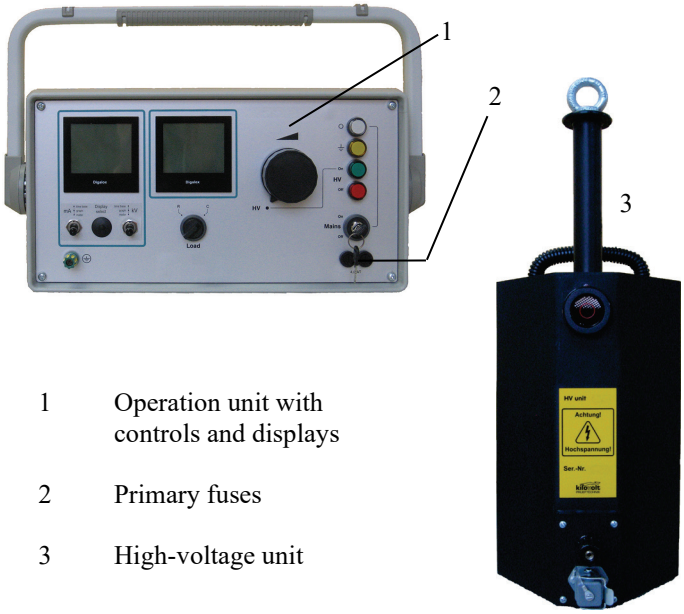
WARNING: Owing to the high voltages which occur, special safety measures are required. These are explained in later sections of the manual (see also chapter 1).

WARNING: The Digital meters only work when the HV test set is powered on. In the case of power loss check with external test equipment, if the device under test is charged. Alternatively connect the HV test set to a working power supply or discharge the device under test with the ground and discharge rod.

2.2 Design of the set

The HV TEST SET consists of the operation unit and the high-voltage unit. All the controls and displays are arranged clearly in the operation unit. The high-voltage transformers, measuring dividers and rectifiers are housed in the high-voltage unit, which is filled with oil (see fig. 2.1).

The two units are linked by a five-pole cable which is connected to the back of the operation unit.



1 Operation unit with controls and displays

2 Primary fuses

3 High-voltage unit

Fig. 2.1 Operation unit and high-voltage unit

2.3 Function

Before the set can be used, the operation unit and high-voltage unit have to be grounded properly.

When the high-voltage adjuster is set to zero, the test voltage can be switched on at the press of a button and increased continuously

between 0 V and the nominal voltage.

This voltage is generated in the high-voltage unit using transformers with rectifiers connected in outgoing circuit.

The condition of the test object with regard to electric strength and insulation quality can be determined from the values for test voltage and leakage current displayed on the operation unit.

2.4 Specifications

Power supply	Observe version! 230 V ± 10%, 50 Hz (Standard) 115 V ± 10%, 60 Hz
Power consumption	max. 900 VA
DC output voltage	
HV test set 50 kV	0... 50 kV
HV test set 80 kV	0... 80 kV
HV test set 110 kV	0...110 kV
HV test set 120 kV	0...120 kV
negative polarity, infinitely variable	

Measuring range, voltage

HV test set 50 kV	50 kV
HV test set 80 kV	80 kV
HV test set 110 kV	110 kV
HV test set 120 kV	130 kV

Measuring range, current 0 – 9.999 mA

Measuring accuracy

Temperature range	23°C +/- 2K ± 1 %
Temperature range -25...55°C	± 5 %

DC output current at maximum DC output voltage

HV test set 50 kV	6 mA
HV test set 80 kV	5 mA
HV test set 110 kV	4 mA
HV test set 120 kV	3.5 mA

Overcurrent tripping

HV test set 50 kV	≥ 8 mA
HV test set 80 kV	≥ 7 mA
HV test set 110 kV	≥ 6 mA
HV test set 120 kV	≥ 5.5 mA

Climatic and mechanical stresses as per DIN IEC 68

Operating temperature	-25°C...+55°C
Storage temperature	-40°C...+70°C
Mechanical strength	
Vibration stress	as per DIN 68 T2-6, test group C

Weight of operation unit 14.0 kg (approx. 31 lbs)

Weight of high-voltage unit

50 kV version	15.8 kg (approx. 35 lbs)
80 kV version	7.2 kg (approx. 38 lbs)
110 kV version	20.5 kg (approx. 45 lbs)
120 kV version	20.9 kg (approx. 46 lbs)

Degree of protection as per DIN VDE 0470 Part 1

Operation unit	IP 40
High-voltage unit	IP 65
High-voltage unit at terminals	IP 00

Maximum discharge capacitance for ground and discharge rod

HV test set 50 kV	6 µF
HV test set 80 kV	4 µF
HV test set 110 kV	3 µF
HV test set 120 kV	2 µF
	at maximum DC output voltage

CHAPTER 3

PREPARATION FOR USE

3. PREPARATION FOR USE

3.1 Operating requirements

Once the operation unit has been removed from the leather case, its carrying handle can be adjusted by exerting gentle sideways pressure on the button on either side in the joint area.

The connecting cables are in the back cover of the operation unit.

The high-voltage unit must always be set up in an upright position and secured against accidental contact during operation.

WARNING: The stipulated clearance between the high-voltage unit and grounded or live parts must be complied with.

CAUTION: Warning notices reading

DANGER!
HIGH- TENSION

When the high-voltage unit is set up in accordance with the above instructions, it must be placed in close proximity to the test object, so that the ground and high-voltage cables can be kept as short as possible.

When the equipment is set up in the field, it must be placed outside the cable trench and protected against dirt and moisture.

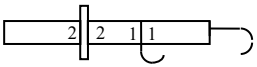
The operation unit should be set up inside the cordon at a distance of 3 m from the high-voltage unit, preferably at operating height.

3.2 Assembling the discharge rod

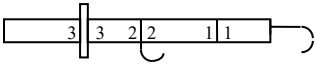
Before the HV Test Set is started up, the ground and discharge rod has to be assembled. The individual parts should be taken out of the protective case and assembled as shown in fig. 3.1.

It should be noted that the discharge rod varies depending on which version of the test set is used (50, 80, 110 kV or 120 kV).

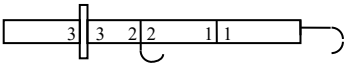
Discharge rod 50 kV
for HV test set 50 kV
7500J (6µF at 50kV)



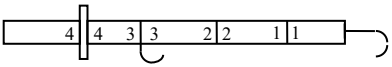
Discharge rod 80 kV
for HV test set 80 kV
11250J (4µF at 75kV)



Discharge rod 110 kV
for HV test set 110 kV
15000J (3µF at 100kV)



Discharge rod 125 kV
for HV test set 120 kV
18750J (2.4µF at 125kV)



3.3 Connecting the test equipment

NB: Before connecting the equipment, make sure that the oil level is visible in the centre of the oil-level lens [3]. If not, no measuring must be done.

1 HV attachment with high-voltage terminal
2 Carrying handle
3 Oil-level lens
4 Ground terminal
5 Terminal for connecting cable to operation unit
6 Ground terminal for operation unit

Fig. 3.2 Operation unit and high-voltage unit with terminals

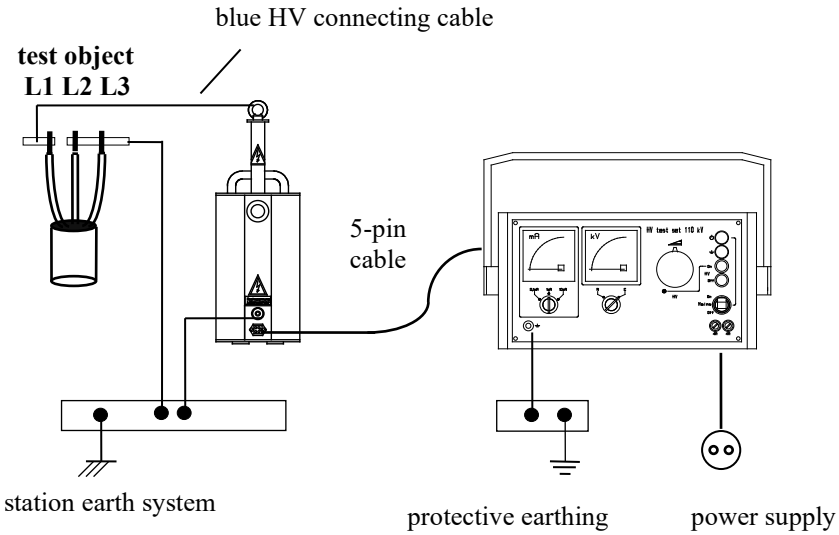
Before the test equipment is connected, safe isolation from supply must be established and safeguarded in accordance with DIN VDE 0105 must be complied with.

The test equipment should be connected in the following order:

1. Ground and short-circuit the conductor of the test object that is not going to be tested (connect to station ground or auxiliary ground point). In the case of ungrounded test objects, the test set can only be used if an auxiliary ground is provided.
2. Establish a conductive connection between the station/auxiliary ground and the ground terminal of the high-voltage unit [4].
3. Screw the high-voltage attachment [1] onto the high-voltage unit and connect the high-voltage terminal [1] to the test object.
4. Connect the ground terminal of the operation unit [6] to the station/auxiliary ground.
5. Connect the ground and discharge rod to the ground terminal of the test object and hold the discharge rod at the ready.
6. Connect the five-pole connecting cable, which is permanently attached to the operation unit, to the high-voltage unit (terminal [5]).
7. Connect the operation unit to the mains.

ATTENTION: The blue connecting cable between high-voltage terminal and test object is to use as unsinsulated overhead cable.

Example (Fig. 3.3)



CHAPTER 4

OPERATING INSTRUCTION

4. OPERATING INSTRUCTIONS

4.1 Controls and displays

The controls and displays needed to operate the HV test set are on the front of the operation unit.

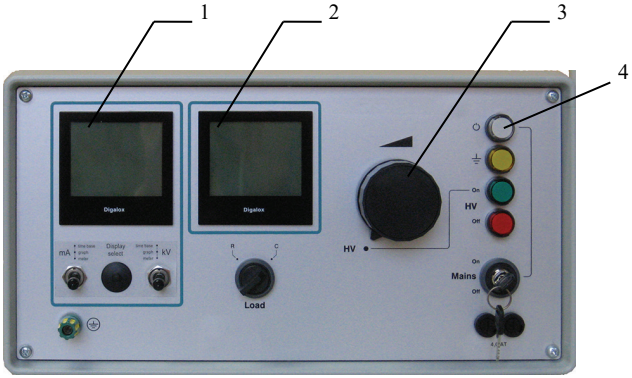


Fig. 4.1 Front of the operation unit

The following tables explain the controls:

Item	Description	Remarks
1	Digital ammeter	Displays the current flowing through the test object
2	Digital voltmeter	Displays the voltage connected to the test object
3	HV adjuster	Adjuster for the high-voltage with forced zero position
4	"Unit on" lamp	Lights up when the unit is switched on with the mains switch [8] and mains voltage is connected

Table 4.1 Controls and displays (part 1)

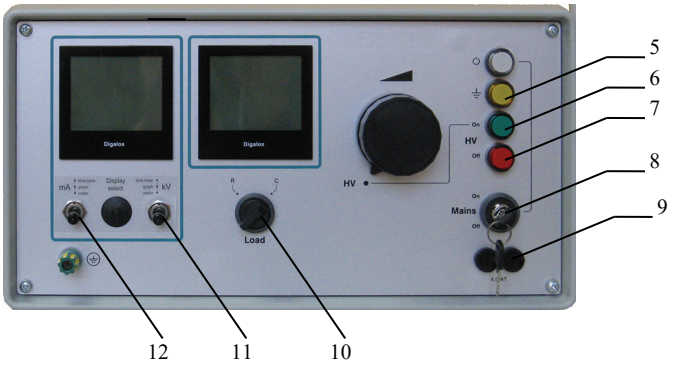


Fig. 4.2 Front of the operation unit

Item	Description	Remarks
5	"Ground terminal" lamp (yellow)	Lights up when the operation unit and high-voltage unit are grounded properly
6	"HV on" button (green)	Button for switching on the high voltage
7	Illuminated "HV off" button (red)	Illuminated button for switching off the high voltage (lights up when the high-voltage is switched on)
8	Mains switch	
9	Primary fuses	
10	"Load" selector switch	Switches between resistive and capacitive load
11	Display Select switch for Voltmeter	Switch between meter and graph-display, change time base
12	Display Select switch for Ammeter	

Table 4.2 Controls and displays (part 2)

4.2 OPERATING PROCEDURE

4.2.1 Setting the operating parameters

When measuring the insulation resistance of plant or plant components with primarily resistive content, the "Load" selector switch (fig. 4.2 [10]) has to be set to "R". This is necessary if an exact reading of the measured value is to be obtained. If cables, plant or plant components with primarily capacitive content are tested, the selector switch must be set to "C".

4.2.2 Performing measurements

When the mains switch is turned on, the white pilot lamp lights up. If the equipment is grounded properly, the green pilot lamp also lights up.

If this does not happen, the operation unit still has to be grounded with cable 1 (ground cable for operation unit to station ground).

This pilot lamp signals proper connection of the station and protective grounds independently of the high voltage being connected.

The equipment will only work when both lamps are lit.

The green "**HV on**" button switches the high voltage on if the voltage regulating transformer is in zero position at left stop (second switching operation, interlock, forced zero position).

The red illuminated "**HV off**" button lights up at the same time, indicating that the "high voltage is switched on".

The test voltage can now be set by slowly turning the adjuster anticlockwise. While doing this, remember to follow the increase in voltage and current on the instruments.

Once the prescribed test voltage has been reached, the leakage current of the test object can be measured.

The following guide values can be quoted for paper-insulated mass-impregnated cables:

Nominal cable voltage (kV)	**Test voltage (kV)**	**Leakage current per wire in µA/km**	
		permitted	**min. achievable**
6	35	500	23
10	50	700	30
20	80	700	80
30	110	700	100

Table 4.2 Guide values for leakage currents

Measurement must be repeated at least three times during testing. The test time should be at least 15 min. and max. 30 min. The tendency of the leakage current should be followed.

The following are all signs of increased wear to the test object:

1. The leakage current indicated is greater than the permitted leakage current
2. The leakage currents of different wires in the same cable differ by more than 1:3
3. The leakage current measured after approx. 60 seconds is less than the leakage current at the end of the test time

If the maximum operating current is exceeded, the overcurrent trip will respond and disconnect the equipment from the mains.

If this happens, the test object is defective.

If the nominal test voltage of the equipment is exceeded by approx. 5 kV, the overvoltage trip will respond. If this happens, the high voltage will have to be switched back on (set the high-voltage adjuster to zero first).

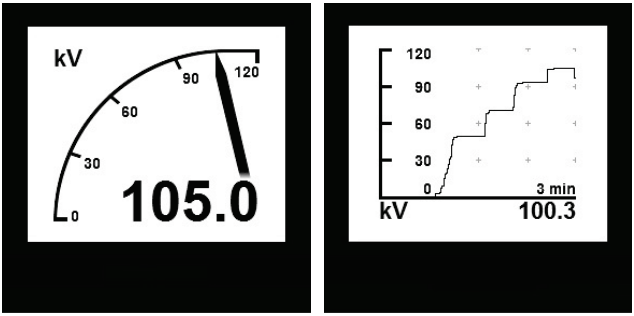


Fig. 4.3 left: meter display, right: graph display

During measurement both digital meters can be switched independently between a meter display and a graph display. The right switch [11] is for the voltmeter and the left switch [12] is for the ammeter.

To display the meter, keep the switch in the lower position. For the graph display switch into the middle position. The time base for the graph display can be changed by holding the switch upwards for less than 2 seconds. At the first switch the actual time base is displayed. The next switch activates the next lower time base in predefined steps: 14, 7 days; 72, 48, 24, 12, 6 hours; 60, 30, 15, 3 minutes. Switching the time base deletes the internal memory of the digital meter. Choose a time base at the beginning of your measurement, which is equal to your expected measure time.

4.2.3 Ending testing

Once testing is complete, turn the voltage down and switch the equipment off.

When the test voltage has dropped by about 10%, discharge the test object by holding the ground and discharge rod against the high-voltage terminal of the high-voltage unit.

WARNING: Make absolutely sure that the ground and discharge rod is grounded properly.

Only capacitances of less than 6 µF may be discharged, in which case the cooling time for the discharge rod is approx. 30 minutes.

The discharge process of the test object can be followed on the measuring instrument.

Hang the ground and discharge rod up in the middle of the high-voltage attachment.

This short-circuits the connected test object, the middle hook of the grounding and discharge rod has to be attached to the high-voltage terminal of the high-voltage unit

The equipment can now be unplugged from the mains.

Finally ground/short-circuit the test object itself.

4.2.4 Safety measures

Please also follow the safety instructions in chapter 1.

The set must only be operated by electricians in accordance with DIN VDE 0105. It must only be operated in areas which have been secured and/or cordoned off and marked in accordance with DIN VDE 0104 and DIN VDE 0105.

In an emergency, the high voltage must be switched off by a second operator pressing the red "HV off" button, and the set must be discharged and short-circuited with the discharge rod.

WARNING: Never put equipment with moisture condensation into operation.

Reliable grounding of the high-voltage unit, the operation unit and the ground and discharge rod is always necessary in addition to adequate protection against electric shock.

WARNING: Care must be taken during testing that the far end is also reliably protected against electric shock.

Be aware that residual charges may still be present after discharge in the case of capacitive tests.

WARNING: Parallel cables may also still be charged after testing.

Always check the oil level (oil level in the centre of the oil-level lens) before testing.

CHAPTER 5

CARE; MAINTENANCE AND REPAIR

5. CARE, MAINTENANCE AND REPAIR

The repair work which can be done on the HV TEST SET by the user is limited to the replacement of fuses and lamps. Fuses, lamps and tools are included in the service kit.

Repairs to the high-voltage unit are not generally permitted.

No more testing must be done if the oil level drops.

If the HV TEST SET is defective, the complete set must be sent in for repair, as the operation unit is matched to the high-voltage unit (interchangeability not guaranteed).

The HV TEST SET is test equipment and as such must be handled and looked after with care.

Moisture, external soiling, direct sunlight and ambient temperatures in excess of 55°C must be avoided.

ATTENTION: The high-voltage unit must only be transported in an upright position.

Tento symbol indikuje, že výrobek nesoucí takovéto označení nelze likvidovat společně s běžným domovním odpadem. Jelikož se jedná o produkt obchodovaný mezi podnikatelskými subjekty (B2B), nelze jej likvidovat ani ve veřejných sběrných dvorech. Pokud se potřebujete tohoto výrobku zbavit, obraťte se na organizaci specializující se na likvidaci starých elektrických spotřebičů v blízkosti svého působiště.

Dit symbool duidt aan dat het product met dit symbool niet verwijderd mag worden als gewoon huishoudelijk afval. Dit is een product voor industrieel gebruik, wat betekent dat het ook niet afgeleverd mag worden aan afvalcentra voor huishoudelijk afval. Als u dit product wilt verwijderen, gelieve dit op de juiste manier te doen en het naar een nabij gelegen organisatie te brengen gespecialiseerd in de verwijdering van oud elektrisch materiaal.

This symbol indicates that the product which is marked in this way should not be disposed of as normal household waste. As it is a B2B product, it may also not be disposed of at civic disposal centres. If you wish to dispose of this product, please do so properly by taking it to an organisation specialising in the disposal of old electrical equipment near you.

Този знак означава, че продуктът, обозначен по този начин, не трябва да се изхвърля като битов отпадък. Тъй като е B2B продукт, не бива да се изхърля и в градски пунктове за отпадъци. Ако желаете да извърлите продукта, го занесете в пункт, специализиран в изхвърлянето на старо електрическо оборудване.

Dette symbol viser, at det produkt, der er markeret på denne måde, ikke må kasseres som almindeligt husholdningsaffald. Eftersom det er et B2B produkt, må det heller ikke bortskaffes på offentlige genbrugsstationer. Skal dette produkt kasseres, skal det gøres ordentligt ved at bringe det til en nærliggende organisation, der er specialiseret i at bortskaffe gammelt el-udstyr.

Sellise sümboliga tähistatud toodet ei tohi käidelda tavalise olmejäätmena. Kuna tegemist on B2B-klassi kuuluva tootega, siis ei tohi seda viia kohalikku jäätmekäitluspunkti. Kui soovite selle toote ära visata, siis viige see lähimasse vanade elektriseadmete käitlemisele spetsialiseerunud ettevõttesse.

Tällä merkinnällä ilmoitetaan, että kyseisellä merkinnällä varustettua tuotetta ei saa hävittää tavallisen kotitalousjätteen seassa. Koska kyseessä on yritysten välisen kaupan tuote, sitä ei saa myöskään viedä kuluttajien käyttöön tarkoitettuihin keräyspisteisiin. Jos haluatte hävittää tämän tuotteen, ottakaa yhteys lähimpään vanhojen sähkölaitteiden hävittämiseen erikoistuneeseen organisaatioon.

Ce symbole indique que le produit sur lequel il figure ne peut pas être éliminé comme un déchet ménager ordinaire. Comme il s'agit d'un produit B2B, il ne peut pas non plus être déposé dans une déchetterie municipale. Pour éliminer ce produit, amenez-le à l'organisation spécialisée dans l'élimination d'anciens équipements électriques la plus proche de chez vous.

Cuireann an siombail seo in iúl nár cheart an táirgeadh atá marcáilte sa tslí seo a dhiúscairt sa chóras fuíoll teaghlaigh. Os rud é gur táirgeadh ghnó le gnó (B2B) é, ní féidir é a dhiúscairt ach oiread in ionaid dhiúscartha phobail. Más mian leat an táirgeadh seo a dhiúscairt, déan é a thógáil ag eagraíocht gar duit a sainfheidhmíonn i ndiúscairt sean-fhearas leictrigh.

Dieses Symbol zeigt an, dass das damit gekennzeichnete Produkt nicht als normaler Haushaltsabfall entsorgt werden soll. Da es sich um ein B2B-Gerät handelt, darf es auch nicht bei kommunalen Wertstoffhöfen abgegeben werden. Wenn Sie dieses Gerät entsorgen möchten, bringen Sie es bitte sachgemäß zu einem Entsorger für Elektroaltgeräte in Ihrer Nähe.

Αυτό το σύμβολο υποδεικνύει ότι το προϊόν που φέρει τη σήμανση αυτή δεν πρέπει να απορρίπτεται μαζί με τα οικιακά απορρίμματα. Καθώς πρόκειται για προϊόν B2B, δεν πρέπει να απορρίπτεται σε δημοτικά σημεία απόρριψης. Εάν θέλετε να απορρίψετε το προϊόν αυτό, παρακαλούμε όπως να το παραδώσετε σε μία υπηρεσία συλλογής ηλεκτρικού εξοπλισμού της περιοχής σας.

Ez a jelzés azt jelenti, hogy az ilyen jelzéssel ellátott terméket tilos a háztartási hulladékokkal együtt kidobni. Mivel ez vállalati felhasználású termék, tilos a lakosság számára fenntartott hulladékgyűjtőkbe dobni.Ha a terméket ki szeretné dobni, akkor vigye azt el a lakóhelyéhez közel működő, elhasznált elektromos berendezések begyűjtésével foglalkozó hulladékkezelő központhoz.

Questo simbolo indica che il prodotto non deve essere smaltito come un normale rifiuto domestico. In quanto prodotto B2B, può anche non essere smaltito in centri di smaltimento cittadino. Se si desidera smaltire il prodotto, consegnarlo a un organismo specializzato in smaltimento di apparecchiature elettriche vecchie.

Šī zīme norāda, ka iztrādājumu, uz kura tā atrodas, nedrīkst izmest kopā ar parastiem mājsaimniecības atkritumiem. Tā kā tas ir izstrādājums, ko cits citam pārdod un lieto tikai uzņēmumi, tad to nedrīkst arī izmest atkritumos tādās izgāztuvēs un atkritumu savāktuvēs, kas paredzētas vietējiem iedzīvotājiem. Ja būs vajadzīgs šo izstrādājumu izmest atkritumos, tad rīkojieties pēc noteikumiem un nogādājiet to tuvākajā vietā, kur īpaši nodarbojas ar vecu elektrisku ierīču savākšanu.

Šis simbolis rodo, kad juo paženklinto gaminio negalima išmesti kaip paprastų buitinių atliekų. Kadangi tai B2B (verslas verslui) produktas, jo negalima atiduoti ir buitinių atliekų tvarkymo įmonėms. Jei norite išmesti šį gaminį, atlikite tai tinkamai, atiduodami jį arti jūsų esančiai specializuotai senos elektrinės įrangos utilizavimo organizacijai.

Dan is-simbolu jindika li l-prodott li huwa mmarkat b'dan il-mod m'għandux jintrema bħal skart normali tad-djar. Minħabba li huwa prodott B2B , ma jistax jintrema wkoll f'ċentri ċiviċi għar-rimi ta' l-iskart. Jekk tkun tixtieq tarmi dan il-prodott, jekk joqgħbok għamel dan kif suppost billi tieħdu għand organizzazzjoni fil-qrib li tispeċjalizza fir-rimi ta' tagħmir qadim ta' l-elettriku.

Dette symbolet indikerer at produktet som er merket på denne måten ikke skal kastes som vanlig husholdningsavfall. Siden dette er et bedriftsprodukt, kan det heller ikke kastes ved en vanlig miljøstasjon. Hvis du ønsker å kaste dette produktet, er den riktige måten å gi det til en organisasjon i nærheten som spesialiserer seg på kassering av gammelt elektrisk utstyr.

Ten symbol oznacza, że produktu nim opatrzonego nie należy usuwać z typowymi odpadami z gospodarstwa domowego. Jest to produkt typu B2B, nie należy go więc przekazywać na komunalne składowiska odpadów. Aby we właściwy sposób usunąć ten produkt, należy przekazać go do najbliższej placówki specjalizującej się w usuwaniu starych urządzeń elektrycznych.

Este símbolo indica que o produto com esta marcação não deve ser deitado fora juntamente com o lixo doméstico normal. Como se trata de um produto B2B, também não pode ser deitado fora em centros cívicos de recolha de lixo. Se quiser desfazer-se deste produto, faça-o correctamente entregando-o a uma organização especializada na eliminação de equipamento eléctrico antigo, próxima de si.

Acest simbol indică faptul că produsul marcat în acest fel nu trebuie aruncat ca şi un gunoi menajer obişnuit. Deoarece acesta este un produs B2B, el nu trebuie aruncat nici la centrele de colectare urbane. Dacă vreţi să aruncaţi acest produs, vă rugăm s-o faceţi într-un mod adecvat, ducând-ul la cea mai apropiată firmă specializată în colectarea echipamentelor electrice uzate.

Tento symbol znamená, že takto označený výrobok sa nesmie likvidovať ako bežný komunálny odpad.Keďže sa jedná o výrobok triedy B2B, nesmie sa likvidovať ani na mestských skládkach odpadu. Ak chcete tento výrobok likvidovať, odneste ho do najbližšej organizácie, ktorá sa špecializuje na likvidáciu starých elektrických zariadení.

Ta simbol pomeni, da izdelka, ki je z njim označen, ne smete zavreči kot običajne gospodinjske odpadke. Ker je to izdelek, namenjen za druge proizvajalce, ga ni dovoljeno odlagati v centrih za civilno odlaganje odpadkov. Če želite izdelek zavreči, prosimo, da to storite v skladu s predpisi, tako da ga odpeljete v bližnjo organizacijo, ki je specializirana za odlaganje stare električne opreme.

Este símbolo indica que el producto así señalizado no debe desecharse como los residuos domésticos normales. Dado que es un producto de consumo profesional, tampoco debe llevarse a centros de recogida selectiva municipales. Si desea desechar este producto, hágalo debidamente acudiendo a una organización de su zona que esté especializada en el tratamiento de residuos de aparatos eléctricos usados.

Den här symbolen indikerar att produkten inte får blandas med normalt hushållsavfall då den är förbrukad. Eftersom produkten är en så kallad B2B-produkt är den inte avsedd för privata konsumenter, den får således inte avfallshanteras på allmänna miljö- eller återvinningsstationer då den är förbrukad. Om ni vill avfallshantera den här produkten på rätt sätt, ska ni lämna den till myndighet eller företag, specialiserad på avfallshantering av förbrukad elektrisk utrustning i ert närområde.