

Automatic Winding Machines

WM3000

WM4000

WM5000

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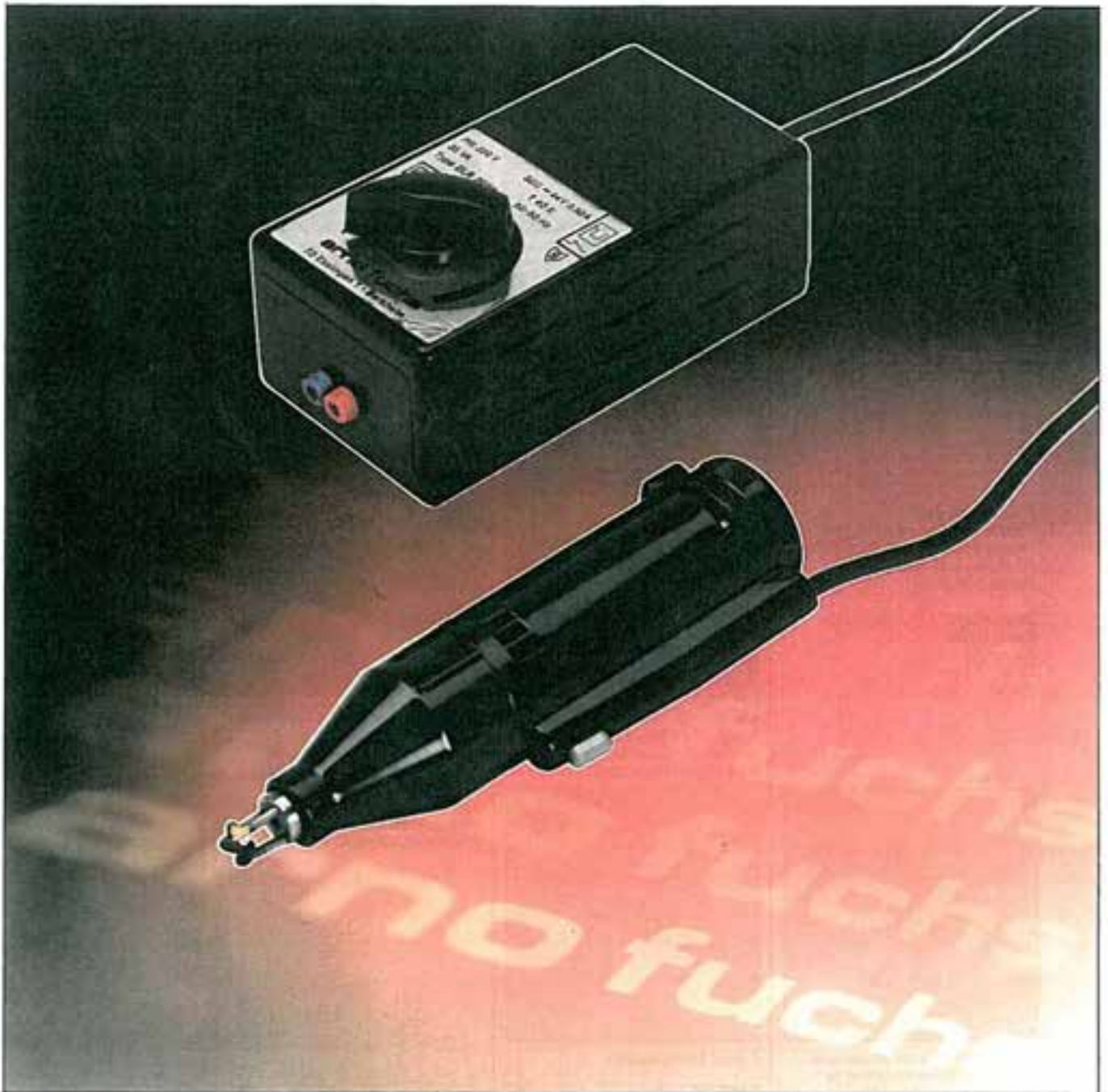


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ABISOFIX

**Käsi­käyt­toi­set kuori­ma­koneet
lakatuille ja eristetyille johtimille**

Abisofix

Abisofix-kuorimakoneet rakentuvat moottori- ja teräistukayksiköistä ja erillisestä muuntajasta, jossa sijaitsee myös pyörimisnopeuden säätöpottiometri. Teräistukka on varustettu kolmella kovametalliterällä, jotka pyöriessään keskipakovoiman avulla sulkeutuvat kuorittavan johtimen ympärille.

Pyörimisnopeutta säädetään muuntajassa olevasta potiometriestä. Tätä säätimellä saadaan riittävä kuorintaterien kosketuspaine kuorittavan johtimen pinnalle.

Abisofix-kuorimakoneilla voidaan kuoria lakattuja, lasikuitu- ja PVC-eristettyjä johtimia.

Tekniset tiedot

Kuorimakone
Tasavirtamoottori 16 - 24V
Pituus 180 mm
Halkaisija 55 mm
Paino 500 g

Muuntaja
Ensiö 220V
Toisio 16 - 42V
Teho 35 VA
Paino 1100 g



Lisävarusteena on saatavissa myös pöytäkiinnike ja jalka-tuominen käyttökytkin.

Teräistukan suojalevy voidaan asentaa tarvittaessa kaikkiin malleihin (ei kuvassa).

Lakatuille johtimille



Malli 1: ϕ 0,2 - 1,5 mm
Malli 3: ϕ 0,3 - 3,0 mm
Malli 4: ϕ 0,6 - 4,0 mm
Kuorintaetäisyys 3 - 4 mm
Kuorintapituus max. 70 mm

Malleissa 1L, 3L ja 4L on kuorintapituuden rajoitin.



Malleissa 1ML, 3ML ja 4ML on kuorintapituuden ja johdinhalkaisijan rajoittimet.



Pienet kuorintapäät

KMK 0,5: ϕ 0,5 mm
KMK 0,6: ϕ 0,6 mm
KMK 0,7: ϕ 0,7 mm
KMK 0,8: ϕ 0,8 mm
KMK 0,9: ϕ 0,9 mm
KMK 1,0: ϕ 1,0 mm
KMK 1,2: ϕ 1,2 mm

Kuorintaetäisyys 1 mm
Kuorintapään halkaisija 8 mm

Abisofix-mallit

Lakatuille johtimille



Malli S: ϕ 0,5 - 1,5 mm
Kuorintaetäisyys 0 mm

Käy erityisesti elektronikkakomponenteille.

Eristetyille johtimille



Malli FML: 0,5 - 1,5 mm²
Kone on säädettävissä tarkkaan halutulle kuorintapituudelle ja johdinhalkaisijalle. Terät on asennettu lähes vaakasuoraan kuorittavaan johtimeen nähden.

Erikoiskäyttöön



Malli F: kovametalliterä muotokuparisen kuorintaan.



Malli V: kuorittujen monisäikeisten johdinpäiden punontaan poikkipinnoille 0,14 - 2,5 mm².



Malli VII: punontakoukku johdinten punontaan 0,6 mm halkaisijaan saakka.



Ohjainhylsy mallille V
Ohjainlevy mallille FML

Maahantuonti ja myynti:

 **Stenbacka**



FUCHS STAR

KÄSIKÄYTTÖISET KUORIMAKONEET
Eristetyille johtimille \varnothing 0,2 mm - 0,5 mm ja \varnothing 0,3 mm - 4,0 mm

Malli "Fuchs Star" on kätevässä pidettävä sähkökäyttöinen eristettyjen johdinten kuorimakone. Se sisältää moottori- ja teräistukkayksiköt. Teräistukkayksikkö on varustettu kolmella kovametalliterällä, jotka pyöriessään keskipakovoiman avulla sulkeutuvat kuorittavan johdinten ympärille.

Kuorimakoneen liitäntäjohdon puoleisessa päässä on pyörimisnopeuden säätöpotentiometri, jota säätämällä saadaan erivahvaisille materiaalipaksuuksille riittävä kuorintaterien kosketuspaine.

Kuorittava johdin asetetaan terien väliin laitteen ollessa pysähdyksissä. Tämän jälkeen laite käynnistetään teräistukan lähellä sijaitsevista punaisesta katkaisijasta ja johdin vedetään ulos pyöri-vien terien välistä.

Laite ei tarvitse erillistä muuntajaa, vaan on suoraan liitettävissä 220V verkkojännitteeseen.

Käyttökohteet:

Pyöreät, lakatut, lasikuitu- tai PVC-eristetyt johtimet.



Teräistukka malli 02



Teräistukka malli 03

Malli 02
johtimille $\varnothing 0,2 - 1,5$ mm

Malli 03
johtimille $\varnothing 0,3 - 4,0$ mm

Kuorintapituus 32 mm

Liitäntä 220V/50Hz

Toho 18W

Pituus 170 mm

Halkaisija 50 mm

Paino 550 g

Maahantuonti ja myynti:

Bedienungsanleitung *Duplex D2 / Simplex E*



Handhebelgerät für die Tischmontage

Zum Abmanteln von Kabeln und gleichzeitigem Abisolieren der Innenleiter.
Einsetzbar z.B. für Kabel bis $5 \times 1.5 \text{ mm}^2$ oder $4 \times 2.5 \text{ mm}^2$.

Funktionsweise

Das Kabel zwischen die Messer, gegen den Längenanschlag legen. Mit dem Handhebel das Kabel festklemmen und den Führungsteller drehen. Im ersten Messerpaar wird der Außenmantel abgezogen. Im zweiten Messerpaar werden die Innenleiter abisoliert.

Technische Daten:

Kabeldurchmesser	11 mm
Abmantellänge	170 mm pro Hub (größere Längen durch Nachfassen möglich)
Abmantelmesser	2/3/4/5 mm; 2,5/3,5/4,5/5,5 mm; 6/7/8/9 mm oder 6,5/7,5/8,5/9,5 mm
Abisoliermesser	Flachmesser
Gewicht	4.2 kg

SIMPLEX E

entspricht technisch Duplex D2, jedoch ohne Abisoliereinrichtung für die Innenleiter, daher nur zum Abmanteln des Außenmantels geeignet.

Single Testers

Testing device with only one integrated test method

	Handheld-HV	Handheld-Iso	Handheld-PE	GLP1-e HV	GLP1-e HV	GLP1-e HV	GLP1-e HV	GLP1-e	GLP1-e	GLP2-e ce
				3 6KV	12KV	15...50KV				3...12KV
	2.5KV						1...6KV			
		100...1000V 30MΩ						100...1000V 30MΩ		
			10A 0.7Ω						10...30A 0.7Ω	
										1μA...30mA 1-phase/3-phase 50Hz...1MHz
										1μΩ...1MΩ
										2.5 6KV 2.5 12 15KV 2.5 6 12 15KV 24 30KV
										6KV

	GLP2-e ce HV	GLP2-e ce	GLP2-e ce	GLP2-e ce	GLP2-e ce	GLP2-e ce	MTC2-light	MTC2	MTC2	MTC2	Normstoß
10...100KV											
	1...40KV										
		25...10000V 100kΩ...10TΩ									
			10...70A 0.7Ω								
				1μA...30mA 1-phase/3-phase 50Hz...1MHz							
					1μΩ...1MΩ						
						2.5 6KV	2.5 12 15KV	2.5 6 12 15KV	24 30KV		
											6KV

Highlights

- reasonably priced
- compact | small
- OEM applications

Our single testers contain only one test method. They can be used for both, manual testing or automatic testing.

In production lines, you often find automatically performed tests that can be extended by switch-over relay fields (relay matrices).

We offer single testers mainly in the following families:

- Handheld
- GLP1
- GLP2
- MTC2



Refer to:

Handheld	18
GLP1-e	20
GLP1-e HV	22
GLP2-e	26
GLP2-ce	28
MTC2	48
Test methods	94

Combination Testers

Testing device with two or more integrated test methods

	high voltage AC KV mA A	src detection	high voltage DC KV mA GΩ	insulation resistance KV GΩ	polarization	PE resistance mΩ	leakage current mA μA	substitute leakage current mA μA	leakage current medical mA μA	residual voltage V	short circuit	function 1-phase A	function 1-3-phase V A W VA kWh Ω	resistance Ω	capacity μF	inductivity mH
Handheld			•	•		•		•				•				
GLP1-e	•	•	•	•		•				•	•	•				
GLP2-e	•	•	•	•		•	•	•	•	•	•	•	•	•		
GLP2-ce	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
GLP3	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MTC2			•	•	•									•		•
MTC3	•	•	•	•	•	•								•	•	•
MotorAnalyzer			•	•	•	•								•		

	surge voltage	partial discharge	sense of rotation	special tests	Mechanische Prüfung	visual examination	turn-to-turn faults	neutral zone	switch-over test methods	matrix	multi station
Handheld									•		
GLP1-e									•		
GLP2-e			•	•	•	•	•		•	•	•
GLP2-ce			•	•	•	•	•		•	•	•
GLP3	•	•	•	•	•	•	•		•	•	•
MTC2	•	•				•	•		•	•	
MTC3	•	•	•	•	•	•	•		•	•	•
MotorAnalyzer	•		•				•		•	•	

We offer combination testers for any imaginable combination of test methods. In addition to safety and functional tests, the tester can be equipped with physical tests such as temperature, pressure or flow rate.

Combination testers are available in the following families:

- Handheld
- GLP1
- GLP2
- GLP3
- MTC2
- MTC3
- MotorAnalyzer

The largest variety of combinations can be achieved with GLP3 testers.

Highlights

- combination of various test methods, safety tests and functional tests in one device
- extendable by various physical tests
- automatic switch-over between the test methods
- switch-overs for smallest and highest voltages and currents
- one connection and automatic successive test performance
- significant time-saving during the process
- switch-overs for dual and multi test stations

Combination testers usually combine at least two individual test methods in one testing device. The internal switch-over assures an automatic connection of the respective test leads to the test object.

Standard switch-overs are usually designed for single-phase and three-phase test objects.

If the product under test has further test connections, additional matrices allocate the test leads to the remaining test points.

Semi-automatic and manual tests

After all leads, e.g. the mains plug, have been connected to the testing device, the PE test points are contacted manually with a test probe. Following, the tester performs all the other tests successively automatic in a pre-programmed routine. The internal switch-over connects test methods to the respective connections.

Fully-automatic tests

All necessary test leads can be connected to the test object in one processing step. After activating the shock-hazard protection, the test process starts. All tests are performed successively. The internal switch-over connects test methods to the respective connections.

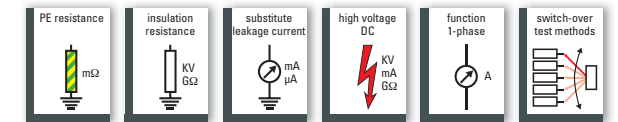
If the tester is designed as a dual or multi station, you can remove the tested product at any desired station and replace it by a new test object while the test is in process.

Refer to:

Handheld	18
GLP1-e	20
GLP1-e HV	22
GLP1-e 60204	24
GLP2-e	26
GLP2-ce	28
GLP3	36
MotorAnalyzer	46
MTC2	48
MTC3	50
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Handheld

Compact safety tester



- RS232
- PC
- I/O

Possible combinations of test methods in a device

	PE resistance mΩ	insulation resistance kV GΩ	high voltage DC kV mA GΩ	substitute leakage current mA μA	function 1-phase A	switch-over test methods
Handheld PE/IR	•	•				•
Handheld PE/IR/SLC/FCT	•	•		•	•	•
Handheld PE/IR 2500V DC	•		•	•		



Testing PE and insulation resistance



Testing the PE at X-ray equipment



Testing conductors at wind-power stations

Highlights

- small and portable
- integrated test socket
- easy and convenient operation
- start switch at both sides for left- and right-handed operation
- ground-continuity test with 10A AC in 4-wire configuration: evaluation of resistance or voltage drop
- insulation-resistance test: evaluation of resistance or current
- high-voltage test DC with up to 2500V DC
- serial interface for printer or result transmission
- integrated result storage for a transmission via RS232 interface at a later point
- storing and printing test results with PrintCom



Devices of the Handheld series are universal testers for electrical safety tests, for PE tests and they check for insulation faults. They are available as single and combination testers.

With regard to the integration of functions, high power density and miniaturization, Handheld testers are outstanding. This generation of testing devices by Schleich represents compact and precise testers.

They are mainly used on site. Therefore, the test electronics are integrated into a sturdy aluminum case. Optional accessories such as transport cases and shoulder straps even improve the handling of the device.

Except for the high-voltage test AC, the tester can also be used for EN60204 tests. Without the high-voltage test, it is possible to perform all necessary tests according to the Machine Guideline. Due to the internal data storage, test results do not have to be written down.

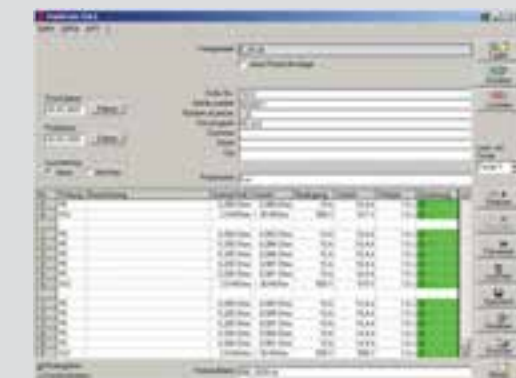


Handheld testers also allow an increase of the test voltage at the insulation-resistance test to max. 2500V DC. This offers an interesting alternative to the high-voltage test with AC. 1800V ACeff correspond to approx. 2500V DC.

The test object is connected via test socket. Using the test probe, the tests can be performed against this socket. Alternatively, the tester can be connected to the enclosure (PE feeding point) of the test object by connection cable. In this case, the tests are performed against this PE point.

A special application is testing the lightning conductors at wind-power stations. To perform tests with currents below 10A, the PE-minimum-current monitoring can be turned off. With a reduced test current and a test lead in 4-wire configuration with a length of 50m, it is possible to test resistances up to 15Ω.

If a PC is available, you can use our Windows® software PrintCom to store the test results directly on the PC.



Read-in measured values via PrintCom



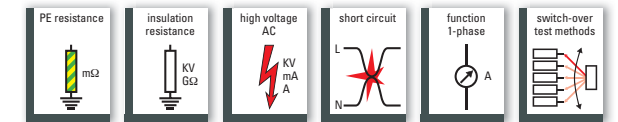
EN60204 test at a service cabinet

Refer to:

Windows® software PrintCom	58
HV pistols and warning lamps	68
Calibration and black boxes	82
test methods	94

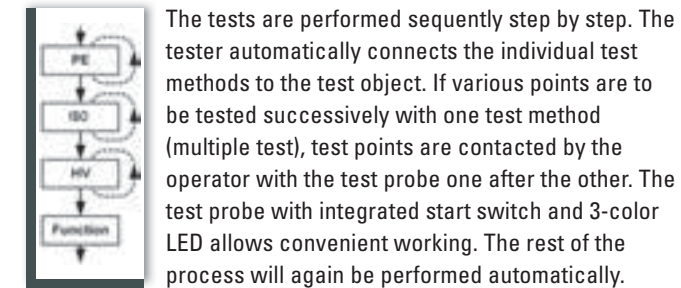


Safety and functional tester



- RS232
- PC
- LabView®
- SPS
- I/O
- Analog
- Print

Single or combination testers of the GLP1-e series are to test the electrical safety and function of electrical products according to defined standards. Due to the small number of adjustable parameters, GLP1-e testers are particularly suited for standardized test processes.



The tests are performed sequentially step by step. The tester automatically connects the individual test methods to the test object. If various points are to be tested successively with one test method (multiple test), test points are contacted by the operator with the test probe one after the other. The test probe with integrated start switch and 3-color LED allows convenient working. The rest of the process will again be performed automatically.

Because of the monitoring functions that can be activated, even untrained personnel can perform the tests safely and reliably.

The integrated RS232 interface allows to print the test results directly. You can use our Windows® software PrintCom to store and process the test results.

Alternatively, it allows a remote control of the device via a PC, a PLC or LabView®. For remote control, digital I/O channels are available, as well. Therefore, our testers can easily be integrated into automatic production lines.

Highlights

- ground-continuity test up to 30A AC in 4-wire configuration: indication of resistance or voltage drop
- automatic constant regulation of the test current
- automatic start when touching the test object with the test probe, optionally with start switch
- insulation-resistance test: indication of resistance or current
- high-voltage test with fixed voltage
- short-circuit test prior to the functional test
- functional test with current measurement and evaluation
- integrated isolating transformer
- acoustic error message and optical indication via signal lamps at the front panel
- digital I/O interface and analog actual-value outputs
- interface for printer, remote control or result transmission
- PrintCom software for storing and printing the test results
- self-test via blackbox according to VDE
- design: tabletop unit, 19" installation
- ideal pre-conditions for OEM applications
- integration into automatic lines with remote control via PLC or PC



PE tester



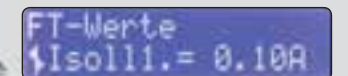
Luminaire testing: PE | ISO | HV | function



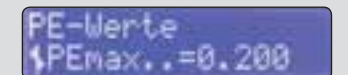
Testing device with up to 1500V DC



Display at the end of a test



Input of a test parameter



Input of a test parameter



Luminaire testing: PE | ISO | function



Luminaire testing: PE | ISO | HV | function



Testing an electric grill: PE | ISO | function

Possible combinations of test methods in a device

PE resistance	insulation resistance	high voltage AC	short circuit	function 1-phase
•				
	•			
•	•			
•	•	•		
•	•	•	•	
•	•	•	•	•

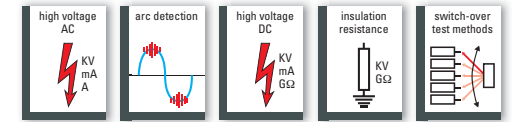
Refer to:

Windows® software PrintCom	58
HV pistols and warning lamps	68
Mains-connection adapters	70
Contacting devices for leads	72
Special contacting devices	74
Test covers	76
Rolling tables	78
Calibration and black boxes	82
Test methods	94



GLP1-e HV

High-voltage tester AC/DC up to 50KV



- RS232
- PC
- LabView®
- SPS
- I/O
- Analog
- Print



directly. You can use our Windows® software PrintCom to store and process the test results directly on the PC.

Alternatively, it allows to remote control the device via a PC, a PLC or LabView®. For remote control, digital I/O channels are available, as well. Thus, an integration of our testers into automatic production lines is no problem.



Highlights

- AC high-voltage testers up to 30KV
- DC high-voltage testers up to 6KV with the lowest residual ripple
- 3 modes: manual, automatic with target time and burning
- high-voltage check / cable-break detection (4-wire configuration)
- automatic voltage adjustment with ramp
- acoustic error message and optical indication via signal lamps at the front panel
- interface for printer, remote control or result transmission
- PrintCom software for storing and printing the test results
- digital I/O interface, two-hand start and analog actual-value outputs
- designs: table-top unit, mobile caddy, 19" installation
- ideal pre-conditions for OEM applications
- integration into automatic lines with remote control via PLC or PC

GLP1-e HV high-voltage testing devices can test the insulation capability and the electric strength (clearance and leakage paths) at electric modules and components.

They are ideal for fast and uncomplicated manual testing within the production process. Without a separate test program, the testers allow manual testing via test pistols, automatic testing (e.g. with programmed time target), various monitoring functions or the localization of isolation faults ("burning").

Our testing devices offer manually or automatically adjustable voltages. Thus, the testers deliver not only a test voltage for routine tests according to standards, but also a sufficiently high test voltage for type tests and material tests.

The tests are often performed with two safety test pistols. In order to meet your requirements best, our product range comprises a great variety of test pistols. For an application in automatic production lines or test systems, the necessary high-voltage cables and contactings are also available.

In addition to single testers, our product range offers combination testers with an internal automatic switch-over between the different test methods, to perform more complex testing tasks. The integrated RS232 interface allows to print the test results



High-voltage test under a test cover



Testing with pistols



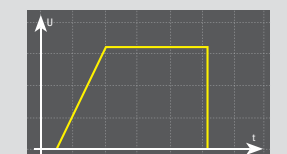
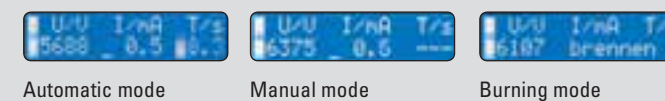
Burning



Mobile caddy

Single tester AC	3KV	6KV	12KV	15KV	30KV	50KV
high-voltage DC	3KV	6KV	12KV	15KV	30KV	50KV
current	100mA	100mA	50mA	50mA	30mA	10mA
Single tester DC	1KV	2KV	6KV	6KV	6KV	6KV
high-voltage AC	1KV	2KV	6KV	6KV	6KV	6KV
current	1mA	1mA	3mA	5mA	10mA	20mA
insulation resistance	•	•	•	•	•	•
Combination tester	6KV AC	3KV AC	2.5KV DC			
high-voltage	6KV AC	3KV AC	2.5KV DC			
current	100mA	100mA	1mA			
insulation resistance	•	•	•			
PE resistance	-	•	•			
function-test	-	•	-			

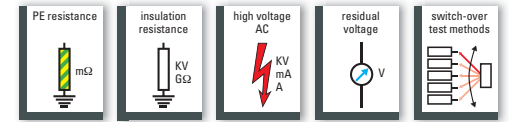
• Standard | ◊ Option | - not available



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- RS232
- PC
- LabView®
- SPS
- I/O
- Analog
- Print



Article Number

	GLP1-e 60204 V1 401854	GLP1-e 60204 V2 401855
high-voltage test AC 500VA	•	•
maximum high voltage	6000V AC	3000V AC
high voltage potential-free	•	–
safety high-voltage test pistols	2	1
ground-continuity test 10A	•	•
insulation resistance test 500Vdc (stepless100 - 1000Vdc)	•	•
residual-voltage test	◇	◇
V1 > PE/IR ground-connection lead in 4-wire configuration	5 m	–
V1 > PE/IR test probe with switch-over and 3-color LED (green/yellow/red)	10 m	–
V2 > PE/IR/HV ground-connection lead in 4-wire configuration	–	10 m
V2 > PE/IR/HV test pistols with integrated push-button	–	1
V2 > PE/IR/HV test pistol length of connection lead	–	6 m
V2 > PE/IR/HV control panel with 3-color LED (green/yellow/red)	–	•
warning lamp	•	•
foot switch	•	–

• Standard | ◇ Option | – not available



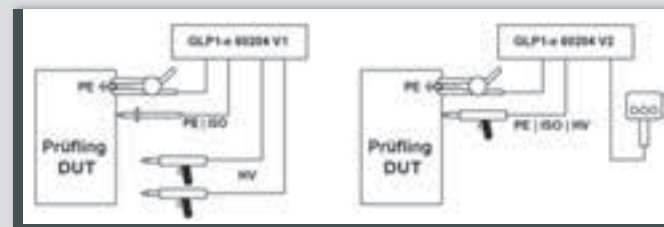
Mobile caddy

Highlights

- ground-continuity test with 10A AC in 4-wire configuration: indication of resistance or voltage drop
- insulation-resistance test: indication of resistance or current
- high-voltage test with manual voltage adjustment
- 3 modes: manual, automatic with time target and burning
- optional residual-voltage test
- acoustic error message and optical indication via signal lamps at the front panel
- integrated result storage for later data transmission
- interface for printer, remote control or result transmission
- PrintCom software for storing and printing the test results on a PC
- digital I/O interface and analog actual-value outputs
- designs: table-top unit, mobile caddy, 19" installation
- ideal pre-conditions for OEM applications
- self-test via black-box according to VDE

GLP1-e-60204 testers perform electric safety tests at machines and devices according to the Machine Guideline (EN60204/VDE0113).

They are ideal for fast and easy testing in factories and on site. It is possible to perform ground-continuity tests, insulation-resistance tests, high-voltage tests and residual-voltage tests. Two models are available – differing only in the contact method.



With Model V1, the ground-continuity tests and the insulation-resistance tests with a test probe with an integrated operating unit are performed first. The high-voltage test with two safety test pistols follows. The test pistols can be delivered with or without integrated start switch and with varying cable lengths.

With model V2, the test object is contacted at ground (central PE-point). All three tests can be performed against this ground point with the same test pistol. By activating the selection switches

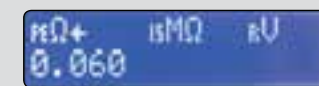


on the control panel, test methods can be changed. To ensure the operator's safety, it is necessary that the high-voltage switch is activated permanently during the high-voltage test. To start the test, the test probe needs to be pushed against the test object.

The integrated RS232 interface allows to print the test results directly. You can use our Windows® software PrintCom to store and process the test results directly on the PC.



EN60204 test at a service cabinet



PE resistance



Insulation resistance



High voltage

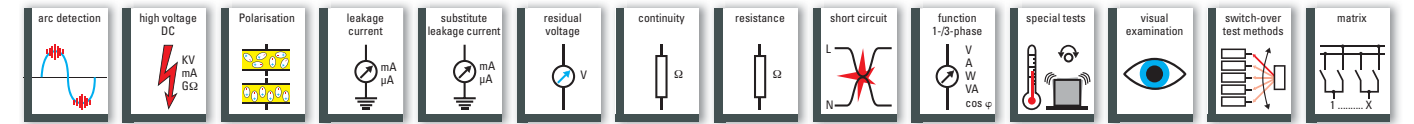
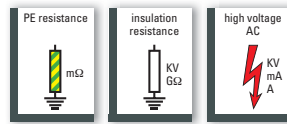
Possible combinations of test methods

	high voltage AC KV mA A	PE resistance mΩ	insulation resistance KV GΩ	residual voltage V
Basic	•	•	•	–
Full	•	•	•	•

Refer to:

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HV pistols and warning lamps	68
Mains-connection adapters	70
Contacting devices for leads	72
Special contacting devices	74
Rolling tables	78
Calibration and black boxes	82
Test methods	94

Universal safety and functional tester



- RS232
- CAN
- Ethernet
- LabView®
- PC
- SPS
- I/O
- Analog
- Print



GLP2-e in a 19"-cabinet with integrated test cover



GLP2-e in a system solution



GLP2-e in a rolling container with test cover



GLP2-e with accessories



GLP2-e as resistance tester in 4-wire configuration

Highlights

- tester for all safety tests
- automatic switch-over between high-voltage tests and low-voltage tests
- single-phase and three-phase functional test with apparent-power and active-power measurement
- single tests with large display of the measured values – ideal for manual testing
- additional analog inputs and outputs
- additional digital inputs and outputs
- additional programmable processes for digital outputs and inputs
- large graphic LCD with 256 x 128 pixels and touch screen
- test-program database and result storage
- integrated statistics
- standard PC printer connection
- thermal-transfer printer for printing labels
- connection for standard PC keyboard or connection for bar-code reader
- Windows® software for remote control, administration of databases for test programs and test results and for printing test protocols
- network (wired or wireless) with testing devices and a central PC
- ideal pre-conditions for OEM applications (integration in automatic lines)

GLP2-e testing devices are the basis for single or combination testers of all kinds. Having an extremely compact design, they offer a large number of test features with intelligent test processes.

The integrated automatic switch-over between all low-voltage tests and high-voltage tests is a special feature of the GLP2-e. With this, the test object can be tested automatically in one test run without reconnection. Therefore, GLP2-e testers are ideal for serial production, no matter whether you document the test results or not. In laboratories, these testers can be used for type tests and for material tests.

Due to the intuitive operation via integrated touch-display, GLP2-e testers are very user-friendly universal testing devices. Of course, the testers can also be operated via an additional standard PC keyboard and/or a bar-code scanner.

GLP2-e testers have an integrated test program database for more than 200 test programs and a separate result database. The results can be stored, printed or transmitted to a PC. To print labels for your products directly after testing, GLP2-e testers can also control thermal-transfer printers.

These testers offer the unique feature to be operated in a server-based network. It is possible to transmit test programs to the testers and send the test results to the PC for storing and further processing. The complete data traffic is organized by our PC software NetCom Xi.

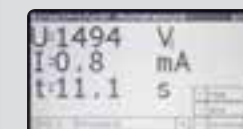
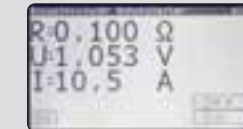
If you only wish to collect, store and print data on the PC, you can use our software PrintCom.



GLP2-e in a system solution with light curtain



GLP2-e in rolling container with dual station

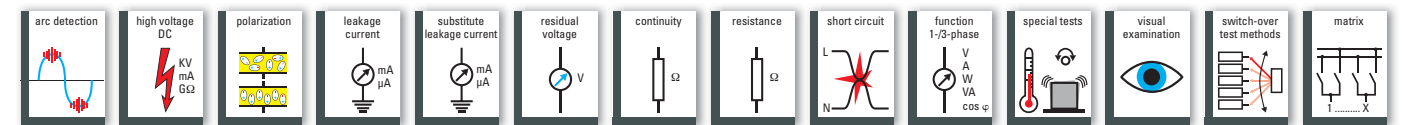
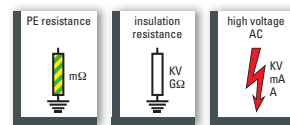


GLP2-e with a functional test DC



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Universal safety and functional tester

- RS232
- CAN
- Ethernet
- USB
- LabView®
- Profibus
- PC
- SPS
- I/O
- Analog
- Print



Based on Windows CE®, our new GLP2-ce testing devices offer numerous possibilities for the application as single or combination testers. With consistently improved measurement and control technology, the GLP2-ce testers have the usual compact and handy design.

GLP2-ce testers support the integrated automatic switch-over between all low-voltage and high-voltage tests. Therefore, the test object can be tested automatically in one test process without reconnecting the test connections. GLP2-ce testers are ideal for applications in serial production, no matter whether the test results are documented or not. Of course, these testers can also be used for type tests and material testing in laboratories.

The innovative touch TFT display, which also allows to enter numbers and letters, makes the GLP2-ce tester one of the most user-friendly universal tester on the market. The testers can, of course, also be operated via external standard PC keyboard, mouse and/or bar-code scanner.

In addition to thousands of test programs, the integrated 4GB memory can also store huge quantities of test results. This gives



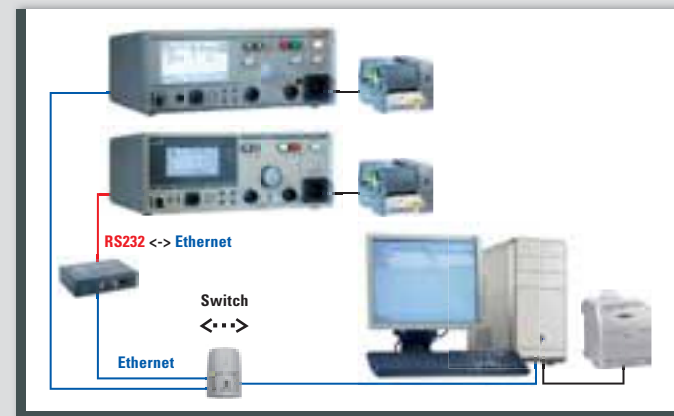
GLP2-ce in a system solution for electric motors

Highlights

- testing device for all safety tests
- automatic switch-over between high-voltage tests and low-voltage tests
- single-phase and three-phase functional tests with apparent-power and active-power measurement
- single tests with large display of the measured values
- additional analog inputs and outputs
- additional digital inputs and outputs
- additional programmable processes for digital outputs and inputs
- high-definition color display with a resolution of 800 x 480 pixels and touch operation
- integrated 1GB database for test programs and 3GB result storage
- data backup on USB stick
- statistical evaluation
- thermal-transfer printing for labels
- USB connections for mouse, keyboard or bar-code reader
- network-compatible (via Ethernet LAN or wireless) with testing devices and a central PC
- ideal pre-conditions for OEM applications (integration into automatic lines)
- remote maintenance and calibration



GLP2-ce with accessories



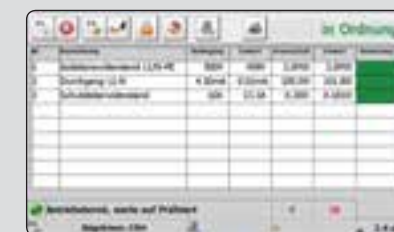
With NetCom Xi, GLP2-ce testers can be operated in combination with GLP2-e testers in one network.

you the certainty to store test results of many years in the tester. You can save them on a USB stick or via an integrated interface on a PC. The GLP2-ce devices can control thermal transfer printers, allowing you to print type labels for your products directly after the test.

GLP2-ce testers can be operated in server-based networks. Test programs can be loaded from the testers and the test results can be sent back to the PC, where they are stored and processed. With Windows CE® integrated in the testers, this is very convenient.



Setup menu



Test process with GO result



Statistical evaluations

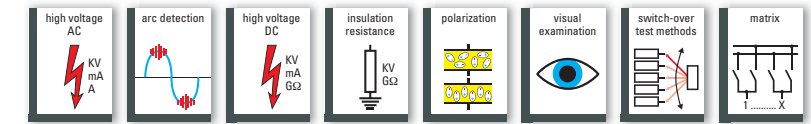
Refer to:

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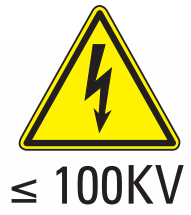


GLP2-e|ce up to 100KV

High-voltage tester up to 100KV



- RS232
- CAN
- Ethernet
- USB
- LabView®
- Profibus
- PC
- SPS
- I/O
- Analog
- Print



Highlights

- tester for the highest high voltages AC and DC
- extremely low residual ripple at high voltage DC
- insulation resistances at high voltage DC up to 10TΩ
- single tests with large display of the measured values
- automatic processes including any ramp profiles
- display of the measured values in graphics
- long-term measurements over hours, days or weeks
- storage of the individual values of the long-term measurements
- high voltage regulated by transformers or electronically
- electronic high-voltage adjustment with super-fast switch-off
- electronic high-voltage adjustment with very fast ramps
- electronic adjustment with output-voltage stabilization
- programmable processes and ramps

With the testers of our GLP2-ce and GLP2-e series, we currently have the most extensive range of testers for high voltage in the market – no matter whether AC, AC with rectifier, DC with highly stable output voltage or AC plus DC combined in one device. The testers can be used for both, manual applications (e.g. in laboratories or in production) and integrated in automatic production lines.

High-voltage sources DC

High-voltage in KV | Current in mA

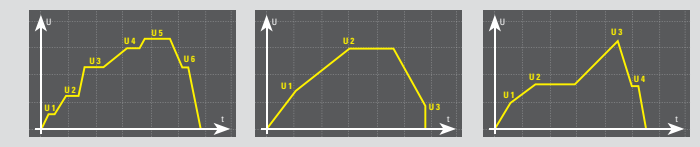
unearthed (potential-free) or minus or plus related to ground (not potential-free)

1	20	30	60	125	250
2	10	15	30	60	125
4	5	7.5	15	30	60
6	3.25	5	10	20	40
8	7.5	15			
10	1.2	3	6	12.5	
12	5	10			
15	1	2	4	8	

minus or plus related to ground (not potential-free)

20	0.75	1.5	3	6	
25	0.6	1.2	2.4	5	
30	0.5	1	2	4	
35	0.42	0.66			
40	0.35	0.75			

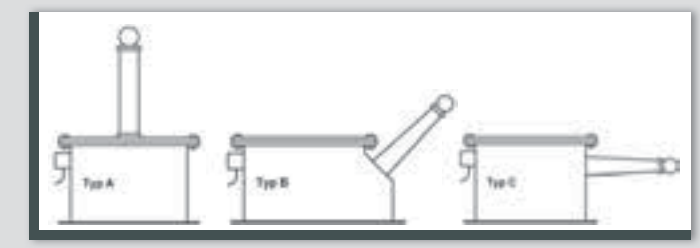
The table shows the available voltages and currents. The high-voltage test DC combined with an insulation-resistance test is always included.



High-voltage sources AC

KV	KVA							
3, 6, 10, 15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 100	0.5	0.7	1.25	3	5.5	8.5	15	20

The table shows the available voltages and powers. Depending on power and voltage, the high-voltage sources are either integrated in the enclosure of the tester or they come in a separate unit containing the high-voltage transformer. The external high-voltage transformers can be delivered in three different designs. They can, for example, be integrated into rolling tables.



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Universal medical safety and functional testers



Our testing devices GLP2-e, GLP2-ce and GLP3-2000-Windows® are suitable to perform tests at medical products according to EN 60601.

Among other safety tests, the medical leakage-current test is the most important test. In order to enable a manual or an automatic test process, the tester supplies all connection points to the test object. This applies also to testers with integrated, automatic high-voltage tests.

The test program is based on a number of conditions. On the basis of the standards, the user can generate a suitable test program. Depending on the complexity of the medical device, the test program can contain a large number of different test steps. Optional wizards facilitate the generation of test programs.

When performing the tests, you receive individual results instead of total results. This guarantees a perfect and complete documentation of the quality.

- 1 Ground leakage current | device with integrated voltage supply
- 2 Ground leakage current | device with separate voltage supply
- 3 Enclosure leakage current with one test probe
- 4 Enclosure leakage current between two test probes
- 5 Enclosure leakage current with one test probe | signal parts connected to voltage
- 6 Enclosure leakage current between two test pistols | signal parts connected to voltage
- 7 Enclosure leakage current without test probe
- 8 Enclosure leakage current without test probes
- 9 Patient leakage current
- 10 Patient leakage current | applied part type F
- 11 Patient leakage current | signal parts connected to voltage
- 12 Patient leakage current | internal power supply
- 13 Patient leakage current | applied part type F | internal power supply
- 14 Patient leakage current | signal parts connected to voltage | internal power supply
- 15 Patient auxiliary current | internal power supply
- 16 Patient auxiliary current | internal power supply
- 17 Ground-continuity test PE-probe
- 18 Ground-continuity test PE-FE
- 19 Ground-continuity test PE-TP1 to TP8
- 20 Insulation-resistance test L+N-PE
- 21 Insulation-resistance test L+N-FE
- 22 Insulation-resistance test L+N-test probe
- 23 Insulation-resistance test L+N-enclosure part
- 24 Insulation-resistance test PE-enclosure part



SP=signal part | AP=applied part

PortaTest

Oil tester for insulating liquids



- RS232
- PC
- Print

The PortaTest allows a fully-automatic detection of the dielectric strength of insulating liquids. The compact design allows to use the PortaTest either on-site or in laboratories. Due to the protection cover that can be opened wide, the test vessel can comfortably be placed on the high-voltage electrodes in the test chamber.

Our oil testers are very easy to handle. The test programs are selected by the operator according to the respective standards. The test electrode and the electrode spacing required for the test are directly indicated by the tester. The distance is adjusted via an adjusting gauge. The test sequences are performed automatically.

Due to the graphic display, the tester can be operated easily. The four soft keys below the display serve for the selection of the standard, for data input, for the configuration of your own test sequences and for the overall configuration of the tester.

When delivered, the tester already includes test sequences, which correspond to all common national and international standards and test specifications. On top of that, you can define up to ten further test sequences and store them in the testing device.



Highlights

- automatic oil tester
- test voltages 60KV, 80KV and 100KV
- variable test voltage and test-voltage increase
- integrated test sequences according to national and international standards
- storage capacity for ten self-defined test sequences
- carbonization is avoided through short switch-off times shorter than < 1ms
- indication of average values and indication of individual breakdown values
- magnetic stirrer
- integrated plain-paper protocol printer
- various test electrodes
- graphic display with backlight
- clear operator guiding via four soft keys
- input of sample number and sample temperature
- PC software PrintCom for storing and printing test results

Article Number	4018300	4018301	4018302
test voltage	60KV	80KV	100KV
voltage measurement TRMS	•		
voltage increase	0.1...10KV/s		
standards: IEC 156/95, VDE 370/96, BS 148/72, UTE C 27-221/74, UNE 21309/89, NEN 10156, SEV 3141/69, CEI 10-1/73, ASTM D1816/90, ASTM D877/90, JIS 2101-82, JIS Silicon 2101/82	•		
test sequences according to standards	12		
freely programmable test sequences	10		
withstand-voltage test	•		
step-voltage test	•		
switch-off time in case of disruptive breakdown	<1ms		
magnetic stirrer [can be switch on/off]	•		
incl. removal device for stirrer bar	•		
matrix printer 40 digits per line	•		
glas test vessel with one pair of electrodes as desired (0.4 liters)	•		
adjusting gauge	•		
integrated clock with date and battery back-up	•		
mains-voltage supply	230 - 240V 50 - 60Hz		
special-voltage supply 110V 60Hz	◇		
operating temperature storing temperature	0...50°C -20...50°C		
dimensions (w x d x h mm)	580 x 370 x 400		

• Standard | ◇ Option | – not available

Integrated test processes

- 12 standard test sequences consistent with worldwide test standards
- 10 freely programmable test sequences
- short test program for a fast evaluation of the condition (test time 5min)
- overload test, single disruptive breakdown test
- voltage-withstand test (1min...24h) with programmable rise time
- step test (1...10 steps)

Every oil sample can be marked automatically with a serial number by the PortaTest device. If desired, you can also use your own numbering.

After every test, a detailed test protocol is printed on the built-in printer. In addition to the standard used for the test, the print-out contains information like date, time, sample number, individual disruptive breakdown values, average values and standard deviations.

With our software PrintCom, the test results can also be transmitted from the oil tester to the PC, where they are stored and summarized to test protocols. To process the data optimally, PrintCom stores all data in Excel® format.



	Article Number
test vessel with one pair of sphere electrodes 12.7 mm...1/2" 0.4 liters	4018303
test vessel with one pair of mushroom electrodes 36 mm 0.4 liters	4018304
test vessel with one pair of disc electrodes 25.4 mm...1" 0.4 liters	4018305
test vessel with one pair of disc electrodes and 0.5 mm edge radius, 25.4 mm...1" 0.4 liters	4018306

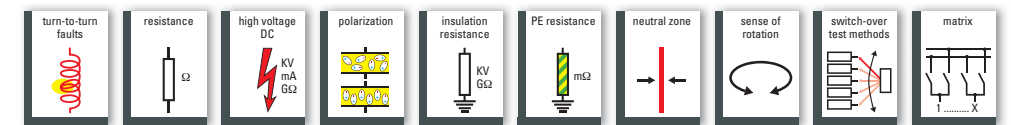
Refer to:

Windows® software PrintCom	58
Rolling tables	78
Test methods	94



MotorAnalyzer

Universal tester for electric motors



- RS232
- PC
- I/O

The MotorAnalyzer is a universal tester for testing electric motors and winding material. This user-friendly and mobile unit comprises ten different test methods.

With the combination of the test methods, the extremely compact design and the battery operation, the MotorAnalyzer is the ideal tool for service on site, even for difficult installation positions.

For testing a 3-phase motor, the three winding connections and the motor frame are connected to the tester. Via surge test and resistance test, now, the MotorAnalyzer analyzes the motor fully-automatically. Afterwards, a high-voltage test is performed at the motor in order to be able to evaluate the quality of the motor quickly and clearly.

For testing the winding, the tester generates surge waves with low level. The patented automatic surge-voltage comparison between the windings or to a reference test object enables precise statements on the symmetry of the windings. Asymmetries are detected by the MotorAnalyzer automatically.



Winding detection at a rotor with induction test probe



MotorAnalyzer in measurement case suitable as hand luggage



Winding detection at a rotor with flexible induction test probe



Resistance test at an armature between the lamellas

Highlights

- ten test methods
- fully-automatic quality assessment
- automatic switch-over between the three motor-connection leads
- manual and automatic testing
- localization of turn-to-turn faults
- mains and/or battery operation
- light weight
- available in a solid measurement case
- rotary switch for quick selection of test methods
- integrated result storage for transmission via RS232 interface
- storing and printing test results via PrintCom



The resistance test is performed with high precision in 4-wire configuration. The evaluation of the symmetry of the three winding resistances or the comparison with nominal values take place automatically. If required, a temperature compensation converts the copper resistance to 20° Celsius.

For the high-voltage test, the insulation-resistance test and the polarization-index test, the MotorAnalyzer generates an extremely stable test voltage of 50...4000V (MotorAnalyzer II 5000V) DC.

With an induction test probe, you locate the slot at the stator or armature, where the turn-to-turn fault is located. The probe also serves to detect rotor faults at squirrel-cage rotors.

The graphical indication of the misadjusted position of the brushes facilitates the adjustment of the "neutral zone" at DC motors.



Winding detection at a stator with induction test probe



Motor testing



Test protocol with surge curve



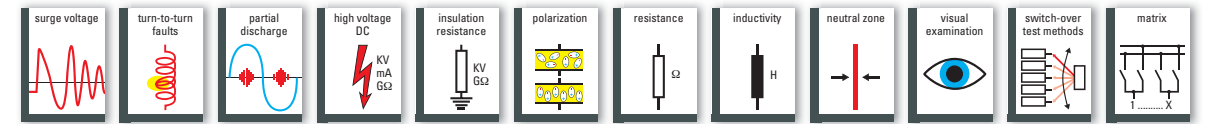
If a PC is available, you can use our Windows® software PrintCom to store the test results directly on the PC.



Refer to:

GLP1-e HV high voltage testers	22
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MTC3 rotor testers	52
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Universal winding testers



- RS232
- USB
- Ethernet
- I/O
- SPS
- Print



Backpack suitable for the MTC2-5KV light with measurement case



MTC2-5KV light in a measurement case suitable as hand luggage

The graphics shows the connection diagram of the 4-wire test leads with a connected motor.

Below please find the measuring channels:
 1 <-> 2 · 1 <-> 3 · 2 <-> 3
 1 <-> 4 · 2 <-> 4 · 3 <-> 4

The switch-over of the test leads to the individual connections takes place via a relay matrix inside the tester.



MTC2-15KV as 19"-rack



MTC2-15KV in mobile caddy

Highlights

- digital surge test with patented evaluation
- surge test with 100nF/200nF (depending on the device) and up to 1500A surge current
- partial-discharge analysis for detecting special insulation faults
- resistance test in 4-wire configuration with temperature compensation
- insulation-resistance test with automatic PI test
- optimized for maintenance
- four winding connections (3 winding leads + star point) plus frame connection
- automatic testing with go / no go comparison
- integrated armature-testing wizard and automatic armature adapter
- compact and lightweight MTC2-light – suitable to be taken as luggage on air travel
- remote control of an AC high-voltage tester and reading in of the test results
- integrated PC with Windows XP® or Windows 7®
- easy operation via touch screen or mouse and keyboard
- remote control and remote calibration
- database for a great amount of test programs and test results
- storing of test results with the motor name plate data and surge curves

Our testers of the MTC2 line are, for example, used for testing 3-phase stators, single-phase stators, transformers, armatures or motors. MTC2 devices can also control armature-contacting units made by SCHLEICH – unique in the world. This allows a fully-automatic armature test and saves hours of work!

For evaluating the errors, the individual tests are compared to each other or, alternatively, to a reference curve.

In addition to manual tests, it is, of course, possible to run automatic test processes. Test processes and test results are stored in the integrated Access® database.

In addition to the test results, the name-plate data of the motors is stored, as well. With the name-plate data, the test results can be searched for in the database and printed out. In addition, it is possible to compare the test results of old tests automatically to new test results easily. The tester, therefore, allows an evaluation of the condition of the stator / motor and indicates a possible deterioration of the insulation.

The software allows an operation of the testers in WINDOWS® networks. The Ethernet interface belongs to the standard delivery extent of the tester.



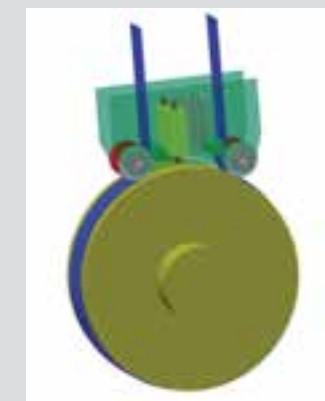
MTC2 light on a wind-power generator



Armature test



Manual armature test probe



Armature adapter that moves around the collector automatically

Resistance test Surge test Insulation-resistance test

Name-plate data

Overview of the results

Storage in a database Protocol print-out Storage as pdf

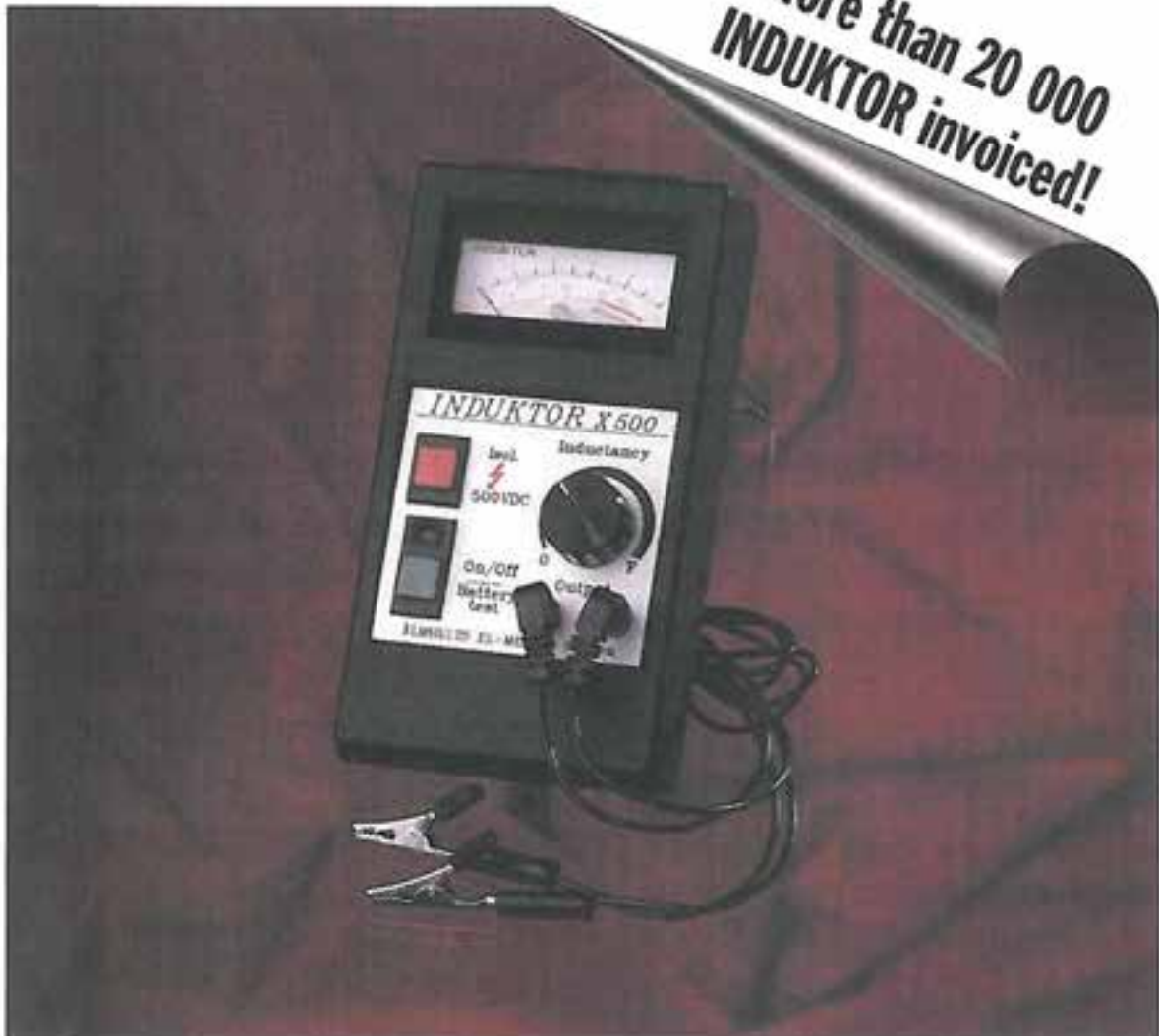
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INDUKTOR X500

More than 20 000
INDUKTOR invoiced!



”THE INDUKTOR METHOD” – a valuable technical concept

For electrical workshops, electrical and maintenance departments in industry, the armed forces, shipping and off-shore operations, etc. In more than 20 countries the INDUKTOR METHOD has become a technical concept – for simple, safe and rational fault detection.

INDUKTOR X500 – a simple and reliable measuring instrument for rational fault detection.



- Performs complete fault detection of 3-phase squirrel-cage motors in a few minutes. Stator, rotor and insulation tests.
- You do not even have to see the motor, measure at the YD converter, the contactor, the over load protector or the terminal box.
- Tests, just as easily, ordinary 3-phase motors, slip-ring motors, variable speed motors, submersible pumps, AC inverters, power tools etc.
- Variable pulse width for inductance measurement.
- 500 V DC insulation test with pointer indication.
- Gives information on the battery condition when switched on.
- Autostop.
- Weight 0.4 kg.
Dimensions 180x100x44 mm.
- 2 year guarantee.

Technical training centres – also abroad, have introduced the INDUKTOR METHOD into their training programmes.

**The INDUKTOR METHOD
– a valuable concept, even for you.**

ELECTROM INSTRUMENTS

LEADING THE INDUSTRY FOR OVER TWENTY YEARS



INTRODUCING THE NEW
iTIG Winding Analyzer

Designed and built with reliable digital components. Rugged and dependable.
For the electric motor and generator manufacturing and repair environment.



ELECTROM INSTRUMENTS LOVELAND COLORADO USA
Phone: 970-669-6609 email: info@electrominst.com

Test Equipment Built to Last !

A pioneer in the industry, **Electrom Instruments** produced the first ever digital Winding Analyzer in the early '90s, revolutionizing the industry. Today computers and software contribute to a greater level of performance, flexibility and ease of use. Electrom Instruments offers the latest and most durable Winding Analyzer on the market.

The **iTIG** is a complete “*all in one*” Winding Analyzer. Its main function is that of an insulation tester designed to safely detect weak or unstable insulation at voltages far below what the apparatus being tested is designed to withstand.

All models can perform all of the following tests:

- Megohm (resistance) Tests
- Hipot Tests
- Surge Tests
- Rotor Bar Tests (Open or cracked AC Rotors)
- Step Voltage Tests
- Dielectric Absorption Tests
- Polarization Index Tests
- Armature Tests (DC Rotors)
- Form Coil Tests

The instruments are sold worldwide to companies in a **vast** range of industries, to electric motor repair shops, manufacturers of electric motors, generators and transformers, to utilities and various processing and manufacturing plants.



iTIG Models:

- **iTIG A:** Basic Winding Analyzer with no storage or reporting capability
- **iTIG B:** Stores one Surge Test wave form pair, can produce print screens and Excel test reports
- **iTIG C:** Same as B but stores 10 test sets (Megohm, Hipot and Surge test results)
- **iTIG D:** Stores unlimited amounts of customer, motor and test data. Comes with **Capture Pro** database and reporting software.

iTIG A,B,& C are upgradable in the field to any higher level model.

Data is stored in the computer memory and on memory sticks.



Capture Pro

Capture Pro V3 is a database and reporting software specifically designed to work with the iTIG. It is used to store and organize data for easy retrieval and to generate reports. It is a valuable tool for predictive and preventative maintenance, and generates trend reports. Capture Pro is installed on a separate desk or lap top PC. Data is transferred from the iTIG to Capture Pro using a memory stick or by connecting directly via USB cable. Data stored can include customer information, equipment data, test data for all tests performed, analysis and notes. Reports are automatically generated, and can be customized or modified to suit individual users. Capture Pro V3 works with Windows 95 through Vista.

iTIG Advantages:

- **MORE SENSITIVE AND ACCURATE FAULT DETECTION:** Most surge testers have one surge generator or channel. This means one winding is tested and compared to a stored winding test. The Electrom iTIG uses two independent surge generators operating simultaneously to compare two windings or coils. This produces a live comparison with a higher voltage gradient between the two phases under test, thus simulating what motors are subject to during operation. Comparing two live waveforms makes it easier to see faults that might go undetected using only one live channel.
- **FINDS FAULTS AT LOWER TEST VOLTAGES:** Ionization of the air surrounding the windings is necessary for detection of insulation weaknesses in a surge test. The iTIG generates line frequency Surge Pulse Rates (50 or 60Hz). This produces and maintains sufficient ionization around fault locations at lower test voltages than instruments with lower pulse rates, such as commonly used 5Hz units.
- **PREVENTS DETECTED FAULTS FROM WORSENING:** Voltage is the equivalent of pressure causing currents of electrons to flow. Voltage (pressure) is necessary to detect weaknesses (current leaks) in the insulation of rotating equipment. Leakage current (the flow of electrons crossing a fault) should be kept as small as possible to prevent further deterioration of the insulation. The current is a function of the discharge capacitance of the instrument. The higher the capacitance the higher the current. The iTIG's discharge capacitance is very low at 0.02uF (20nF) per channel.
- **EASY TO USE AND READ:**
 - Computer-controlled oscilloscope functions with color LCD display.
 - Large displays of test and output voltage, resistance (Megohms) and leakage current
 - Easier to use than previous instruments with multiple report printing options.
- **ONLY BUY WHAT YOU NEED NOW, UPGRADE LATER:** The iTIG is upgradeable in the field from a basic non-reporting winding analyzer to one with unlimited data storage and full reporting capability through simple software upgrades.
- **PORTABLE ALL IN ONE INSTRUMENT:** All tests, including the AC Rotor Bar test, are done with one instrument, no extras. Optional accessories fit in the cover of the rugged moisture-proof case which is designed for harsh environments.
- **BUILT IN SAFETY FEATURES:** Improper power line ground and polarity prevents the iTIG from turning on. Limits on leakage current prevent insulation damage and shuts the test down.

Electrom Instruments
A Division of Electrom Power Products LLC,
PO Box 745, Loveland, CO 80539, USA
Phone: +1-970-669-6609, 800-833-1881(US),
Fax: +1-970-669-4728, E-mail: info@electrominst.com

Functions & Specifications for the Electrom iTIG Series Winding Analyzer

FUNCTIONALITY:

- Surge test
 - Two Surge Generators - more sensitive fault detection than with one channel
 - Line frequency (50/60Hz) Pulse Rate – detects faults at lower voltage than lower frequency instrument.
- Rotor Bar Test - Open or cracked AC rotors
- DC Megohm Test
- DC HiPot Test
- DC Step Voltage Test
- Polarization Index Test
- Dielectric Absorption Test
- Form Coil Test

SPECIFICATIONS: (Higher outputs available with addition of a Power Pack)

Surge Test

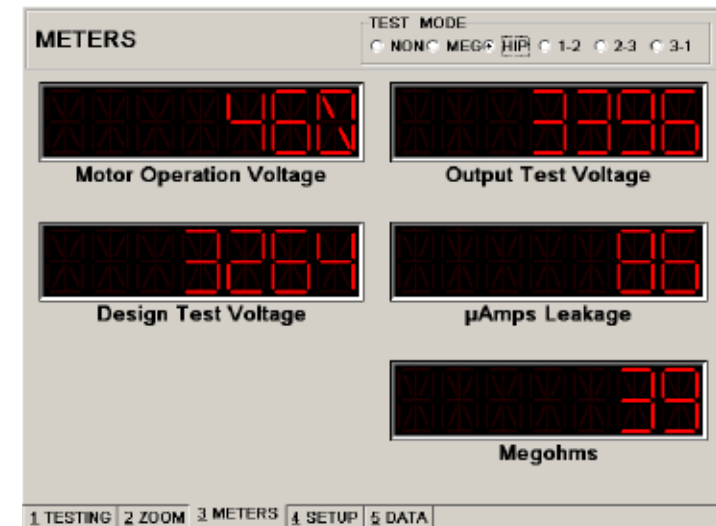
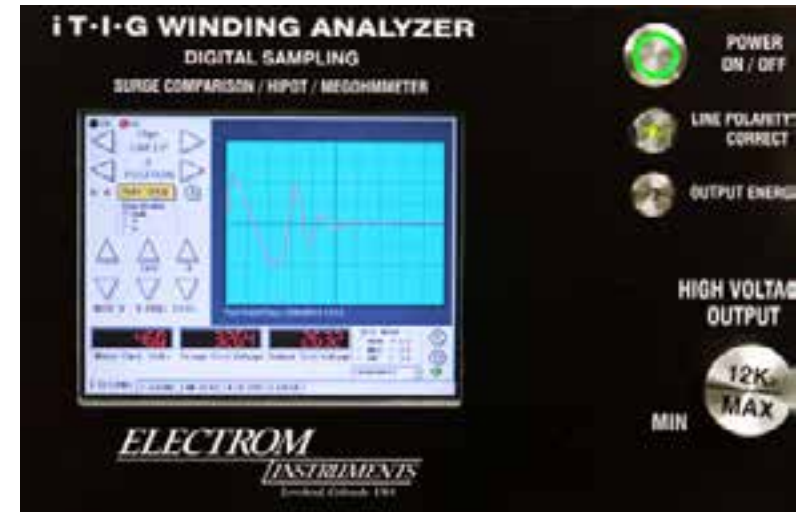
Maximum Voltage	12 kV
Maximum Current	800 Amps
Maximum Energy	2.8 Joules

DC Hi-Pot / Megohm

Maximum Voltage	12 kV
Maximum Current	5 mA
Micro-Amp Display	0.0 – 2000
Over-Current Trip	5 mA
Resistance range	250k ohms to 1,000 meg ohms.

Input Voltage 120 VAC or 220-240 VAC, 50 or 60Hz
Power 600 Watts

Weight 52 lbs - 24kg
Dimensions 20¼ x 8½ x 19½ inches - 51x22x50 cm



This screen is typically used in Megohm and Hipot mode.

ACCESSORIES

Power Pack

- The Power Pack is used to test large and high voltage rotating machines such as slow speed 4,160V, to 13,800V electric motors
- All tests available with the iTIG are standard in all Power Packs when used together with an iTIG.
- Power Packs may be used for Stand Alone DC Hi-Pot and Megohm Testing.
- The surge test is a load dependant test. Load characteristics are influenced by operating voltage, horse power, rotating speed, frame size, coil type etc. Greater loads may necessitate a Power Pack.
- Assembled motors may limit output voltage because of the magnetic influence of the rotor thus requiring a Power Pack.
- The iTIG captures and displays the surge waveforms from the Power Pack.
- The Power Pack is portable and has the same rugged case as the iTIG.

Standard Power Pack PP30 Specifications:

Surge Test

- Maximum Voltage 30 kV
- Maximum Current 2,000 Amps
- Maximum Energy 18 Joules

DC Hi-Pot / Megohm Tests

- Maximum Voltage 30 kV
- Maximum Current 5 mA
- Over-Current Trip 5mA
- Micro-Amp Display 1 micro Amp resolution
- Meg Ohm Display 1 Meg Ohm to infinite

Input Voltage: 120 VAC or 220-240 VAC, 50 or 60Hz
Weight: 70 lbs - 32kg
Dimensions: 20¼ x 8½ x 19½ inches - 51x22x50 cm

Power Packs with other output specifications are available on request.

Rotor Bar Clamp

The RTR-03 is a clamp-on current transformer specifically designed to monitor the 50/60Hz signal on one phase of an induction motor. Its purpose is to find an open or broken bar in the rotor. This is done by detecting a fluctuation in the sine wave produced by a rotating motor.

Armature Test Fixture

The ATF-11 is a one size fits all fixture used when testing DC Armatures. It has a one step set-up and allows one hand operation so the other hand can be used to operate the iTIG. It should be used together with the Foot Switch.

Foot Switch

The FS-01 is a Foot Switch used to energize the iTIG and start the test instead of using the Function Switch on the front panel of the iTIG.



iTIG and Power Pack with ATF-11



iTIG with Rotor Bar Clamp



Product Info / Special Make



MOVISTROB Special Unit Type 2000 N/S.-EXT.-PH

a compact stroboscope with high light intensity, phase shifter independent of frequency and external triggering, alternatively available in 2 frequency ranges from 2 - 50 Hz or 2 - 120 Hz (F.P.S.)

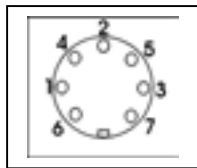
Technical Data

Power supply:	230V AC, 50 Hz (110V on request)
Flash bulb:	socket-mounted Xenon-longlife
Frequency range:	2 - 50 Hz or 2 - 120 Hz (please state range when placing an order)
Light intensity:	approx. 800 lux at 50 Hz, approx. 400 lux at 120 Hz
Input triggering signal:	2 - 30 V, impedance 100 Kohm
Phase shift:	frequency-independent for image shift up to 355°, continuously adjustable by control knob with graduation.
Housing:	shatterproof plastic, VDE-approved
Weight:	0,500 kos
Dimensions:	155 x 80 x 65 mm
Additional features:	7-pin b.c. receptacle for external triggering, 7-pin male plug to match and 2 m power cord with schuko-plug

Recommendable accessories:

induction-transmitter, Infrared sensor
and other adequate devices on request

Trigger input



Front view

- 1 + 15 V
- 2 n.c.
- 3 + 15 V / R = 150 KOhm
- 4 signal input
- 5 ground (earth)
- 6 n.c.
- 7 n.c.



Electro-Mechanical Maintenance

Graphite Specials

Cleaning of Industrial parts

Steel Specials

DRYING OVEN

Since 1916, Luckerath has been active in four market segments. These segments form a complete assortment of products and services in the domains Electro-mechanical maintenance, Graphite and Specials, Cleaning of Industrial components and Steel Specials. Mission: Luckerath supports the critical process components by delivering high quality goods and services supply. This means that Luckerath ensures that industrial production processes run continuously in and efficiently.

CLEANING OF INDUSTRIAL PARTS

THE FUNCTIONING OF THE DRYING OVEN



Cleaning of Industrial parts

Luckerath is a specialist in cleaning industrial parts. This market segment includes the cleaning of any metal type that is coated with one or several types of paint, varnish or coatings. Luckerath proposes two types of Industrial ovens for the cleaning, each one of them unique in their domain. These ovens can remove varnish or dry the product. Moreover, the ovens are the end product of year-long tests and adaptations that have resulted in a unique design with very high performances for many different applications.

The Dutch and Belgian inspection authorities have tested all industrial ovens entirely and all tests with regard to safety, consumption and emission and have been passed successfully. The computer controlled operation enables the ovens to be used for many applications and to be set according to your own requirements.



The functioning of the drying oven

In addition to Pyrolysis and burnout ovens (MUBO), Luckerath produces drying ovens. These are, amongst others, very suitable for the curing and polymerisation of electrical insulating varnishes, resins and paints. The design ensures that the drying oven is able to dry in a fast and professional way, using forced air circulation. Besides the drying of varnish, resin and paint, the oven can also be used for the pre-heating and drying of granulates. The oven has multiple functions. The sucking in of the air by one or several ventilators, mounted centrally in the oven ceiling, ensures a constant air flow. The greater part of this air is evenly distributed over the electrical resistances, resulting in heating up. This heated air is then blown back into the oven, via the side walls, through the double construction. The remaining air is removed through the chimney, via a programmable and adjustable valve. The distribution can be pre-programmed. The simple operation enables you to set the oven entirely to your own requirements. All drying ovens are equipped with a digital temperature setting, an additional maximum thermostat, a ventilator with an explosion free fan and finished inside with heat resistant aluminum paint. The Luckerath drying ovens are designed by a team of specialists, in accordance with your requirements. Luckerath can supply various dimensions and two types of operations. The "standard" version contains three mechanical time settings that have been programmed beforehand. The "special" version is equipped with different options for, amongst others, programming: the pre-setting of starting time, regulation of ramping temperatures and times. This ensures a controlled drying of the goods.



Please contact your account manager, if you require more information about this product group. Luckerath is also your address for personalized advice. Besides drying ovens, Luckerath also supplies burn out ovens and pyrolysis ovens. These are all part of our complete and extensive range to keep industries running!

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Electro-Mechanical Maintenance

Graphite Specials

Cleaning of Industrial parts

Steel Specials

MUBO OVEN

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ELECTRO-MECHANICAL MAINTENANCE

THE FUNCTIONING OF THE MUBO OVEN



Electro-Mechanical Maintenance

One of the market segments that Luckerath offers to its customers is Electro-Mechanical Maintenance. This market segment consists of all products and services that are required for the maintenance of electro motors, transformers and electric transfers. Luckerath supplies and installs complete workshops with machines such as test devices, priming reservoirs, winding machines, pyrolysis- and drying ovens, etc. Thanks to a team of specialists with extensive professional knowledge, Luckerath is capable of converting the customer's requirements into a specialised product of high quality. Luckerath's assortment is comprehensive and conveniently presented.

The functioning of the burnout oven (MUBO)

Besides Pyrolysis ovens, Luckerath also manufactures burnout ovens. These ovens, also called burn out ovens, are able to incinerate, for example, binding agents used to keep coils in electro-motors and transformers together. This facilitates the fitting of new windings in the electro-motors. The functioning is for the greater part similar to a pyrolysis oven. The ovens use heat to reach a temperature of maximum 420°C. The maximum temperature is to be set beforehand. The design and the temperature ensure that copper windings are burnt out of the oven. Electro-motors can therefore be re-winded in a fast and professional way. The difference between the Pyrolysis and the burnout oven is the oxygen control in the heating chamber. The oxygen in the burnout oven is not minimised as in the Pyrolysis ovens, therefore this oven is perfectly suitable for the pyrolysis of electro-motors and transformers. Luckerath is leading the way in the domain of environmental requirements! All burnout ovens comply with the strict worldwide environmental requirements. This is ensured, amongst others, by the controlled supply of gas and oxygen. The built-in delayed heating chamber ensures that all dangerous gasses are burnt before entering the environment. Therefore, the temperature in the delayed heating chamber is approx. 850°C. This technique ensures that the environment remains free of harmful substances.

All burnout ovens are simple to operate. The oven can be set to your own requirements by pressing only a few steps. All ovens are equipped with a digital temperature indication, a temperature protection by means of a water spray system, an explosion hatch on top of the oven and a moveable cart for easy loading and unloading of goods.

Please contact your account manager, if you require more information about this product group. Luckerath is also your address for personalized advice. Besides burnout ovens (MUBO), Luckerath also supplies Pyrolysis ovens and drying ovens. These are all part of a complete and extensive range to keep industries running!



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Electro-Mechanical Maintenance

Graphite Specials

Cleaning of Industrial parts

Steel Specials

PYROLYSIS OVEN

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ELECTRO-MECHANICAL MAINTENANCE

THE FUNCTIONING OF THE PYROLYSIS OVEN



Electro-Mechanical Maintenance

One of the market segments that Luckerath offers to its customers is Electro-Mechanical Maintenance. This market segment consists of all products and services that are required for the maintenance of electro motors, transformers and electric transfers. Luckerath supplies and installs complete workshops with machines such as test devices, priming reservoirs, winding machines, pyrolysis- and drying ovens, etc. Thanks to a team of specialists with extensive professional knowledge, Luckerath is capable of converting the customer's requirements into a specialised product of high quality. Luckerath's assortment is comprehensive and conveniently presented.

Pyrolysis Oven

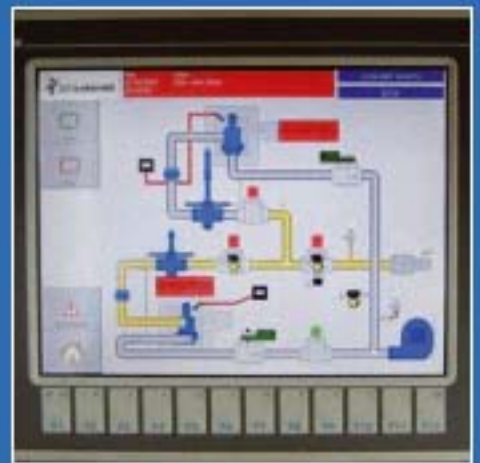
The Luckerath pyrolysis oven is not only suitable for the cleaning of industrial components but also perfect for the re-winding or revision of electro-motors and transformers. Its unique design enables the pyrolysis oven to pyrolyse any type and shape of electro-motor or transformer. The resins that can be found on the motors are melted during this process. This process facilitates the replacement of the copper windings. Burn spots are not formed due to the equal radiation heat. This means that the electro-motor is not damaged in any way.

The functioning of the pyrolysis oven

Luckerath Pyrolysis ovens are leading the way in the domain of environmental requirements! All Pyrolysis ovens comply with the strict environmental requirements. This is, amongst others, due to the delayed heating chamber that every Pyrolysis oven possesses. This space, with a large quantity of oxygen, is capable of incinerating the released gases so that harmful emissions do not occur. This technique ensures that the environment is therefore free of harmful substances. In order to control this whole process, all pyrolysis ovens are equipped with a control panel that is very user friendly. By means of a programme, designed by the experts at Luckerath, the oven can store all data and convert these into graphics and tables. The storing and repeating of the programmes is a simple button away. The touch screen is easy to use and arranges the functions conveniently.

A complete overview of the oven is provided at all times. Every Pyrolysis oven from Luckerath is made to measure. A team of specialists designs the oven in accordance with your requirements, for an optimal result. Besides the possibility to have the oven made to measure, it is also possible to choose from ten standard versions. All pyrolysis ovens from Luckerath are of top quality and can be used for many purposes.

Please contact your account manager, if you require more information about this product group. Luckerath is also your address for personalized advice. Besides Pyrolysis ovens, Luckerath also supplies burn out ovens and drying ovens. These are all part of a complete and extensive range to keep industries running!



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Electro-Mechanical Maintenance

Graphite Specials

Cleaning of Industrial parts

Steel Specials

IMPREGNATION TANK

Since 1916, Luckerath has been active in four market segments. These segments form a complete assortment of products and services in the domains Electro-mechanical maintenance, Graphite and Specials, Cleaning of industrial components and Steel Specials. Mission: Luckerath supports the critical process components by delivering high quality goods and services supply. This means that Luckerath ensures that industrial production processes run continuously in and efficiently.

ELECTRO-MECHANICAL MAINTENANCE

IMPREGNATION TANK



Electro-Mechanical Maintenance

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Impregnation tanks

Luckerath supplies Impregnation tanks for the priming of electro-motors. These Impregnation tanks have been especially developed for the priming of, amongst others, electrical windings, coils, electro-motors, circuit cards and transformers. The Impregnation tanks are designed in such a way that a maximum functionality is obtained with a minimum processing. All Luckerath impregnation tanks are equipped with the following elements to ensure easy use and an optimal result.

- Opening with flange connection for aspiration of solvents
- A clear separation between tank and components.
- A grid in the lid for fresh air circulation.
- A precise pressure regulator has been mounted on the outside.

Besides the abovementioned standard equipment for every priming reservoir, it is also possible to add supplementary options so that the device complies even better with your requirements. The following are optional:

- Hoisting device with monorail for the positioning of motors.
- A 4-arm hoisting device for the positioning of larger motors.
- An electric or pneumatic operation.
- Etc.

The impregnation tanks are entirely made to measure. The process is supervised by a team of specialists. Luckerath can therefore guarantee an optimal result. Besides impregnation tanks, Luckerath also supplies Pyrolysis ovens and Burnout drying ovens.

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COMPACT, MONOBLOCK TYPE VACUUM IMPREGNATION TANK

Compact, robust and very simple to operate full VACUUM IMPREGNATION TANKS with the same features and equipment of their bigger counterparts but at much lower price.

The MONOBLOCK type VACUUM IMPREGNATION plant is composed of:

- Mechanically assisted vacuum resistant completely sealed cover with sight glass
- Flat bottom tank acting as a varnish or resin reservoir
- Upper impregnation tank equipped with a vacuum gauge
- Manual flow and reflow valves with a filtering strainer in-line.
- High efficient rotary vane oil sealed single stage vacuum pump
- Resin level measuring device
- Replaceable filter and valves block for easy maintenance

MODEL	MVI-500	MVI-600	MVI-750	MVI-1000
Impregnation vessel diameter*	500 mm	600 mm	750 mm	1000 mm
Impregnation vessel usable depth*	400 mm	500 mm	650 mm	650 mm
Total height*	1200 mm	1400 mm	1700 mm	1700 mm
Total width*	800 mm	900 mm	1050 mm	1300 mm
Total length*	700 mm	800 mm	1000 mm	1300 mm
Power installed	0,55 kW (50Hz) / 0,65 kW (60Hz)			
Vacuum pump speed	20 m ³ /h			
Resin max. capacity*	80 L	140 L	215 L	510 L

** Note: Sizes and volumes are approximate and subject to slight variations*






AEV Iberica, S.L.

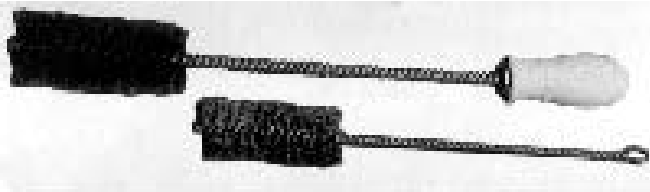
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KÄÄMINPURKU- JA PUHDISTUSTYÖKALUT


Malli Nro	Mitat mm	URANPUHDISTUSTALTAT
UPT1	5 x 290	
UPT2	6 x 320	
UPT3	9 x 355	
UPT4	10 x 415	
UPT5	11,5 x 500	
UPT6	13 x 580	

Malli Nro	Leveys mm	KATKAISUTALTAT
		
		
SMG 1800/30	30	
Vulcan:		
SMM 1044/10	10	
SMM 1044/12	12	
SMM 1044/14	14	
SMM 1044/16	16	
SMM 1044/18	18	
SMM 1044/20	20	
SMM 1044/22	22	
SMM 1044/24	24	
SMM 1044/26	26	
SMM 1044/28	28	
SMM 1044/30	30	

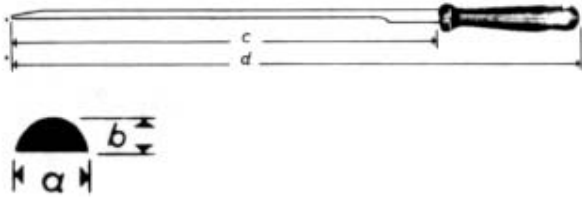
Malli Nro	Harjaosan mitat/mm	URANPUHDISTUSHARJAT / PYÖREÄT + LITTEÄT
Pyöreät		
UPHP 5	5 x 120	
UPHP 6	6 x 120	
UPHP 8	8 x 120	
UPHP 10	10 x 120	
UPHP 15	15 x 120	
UPHP 20	20 x 120	
UPHP 25	25 x 120	
UPHP 30	30 x 120	
Litteät		
UPHL 09	4 x 10 x 100	
UPHL 10	7 x 10 x 120	
UPHL 12	8 x 12 x 100	
UPHL 15	8 x 15 x 100	
UPHL 18	10 x 18 x 100	
UPHL 22	10 x 22 x 100	
UPHL 26	12 x 26 x 100	

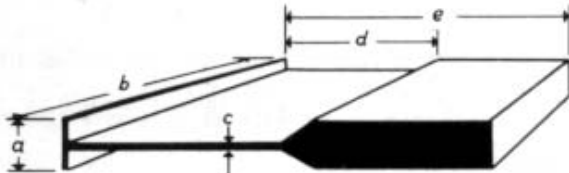
Malli Nro	Leveys mm	URAVIILAT
UV 300 / 10	2,8 x 10 x 300	
UV 400 / 12	3,0 x 12 x 400	
UV 400 / 16	4,0 x 16 x 400	
UV 400 / 20	4,0 x 20 x 400	
UV 500 / 16	4,0 x 16 x 500	
UV 500 / 25	6,0 x 25 x 500	
UYK	Suojakahva	

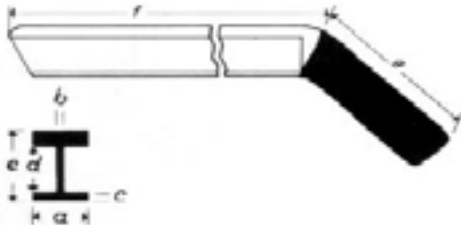
Malli Nro	Leveys mm	KOVAMETALLIPYÖRÖVIILA
SC 8/250	8 x 250	


PURKUPIHDIT					
Malli Nro	Pituus	Malli Nro	Pituus	Malli Nro	Pituus
		GAZM-6857	310	GAZS-5360	380
					

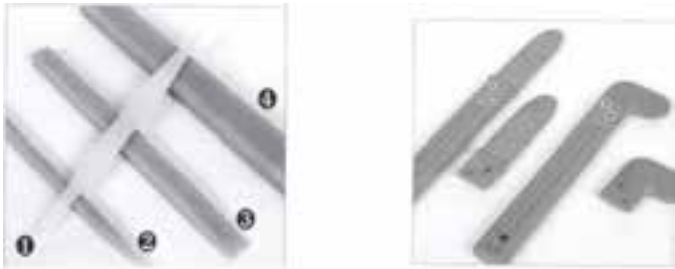
Malli Nro	Leveys mm	KOLMIOKAAPIMET
DLSB 1.125	125	
DLSB 1.150	150	
DLSB 1.175	175	
DLSB 1.200	200	
DLSB 1.250	250	


Malli Nro	Mitat a x b mm	URAPUIKOT
WSW 2,5	2,5 x 1,6	
WSW 3,0	3,0 x 2,0	
WSW 3,5	3,5 x 2,3	
WSW 4,0	4,0 x 2,6	
WSW 4,5	4,5 x 3,0	
WSW 5,0	5,0 x 3,3	
WSW 6,0	6,0 x 3,9	
WSW 7,0	7,0 x 4,5	
WSW 8,0	8,0 x 5,4	
WSW 10,0	10,0 x 6,9	


Malli Nro	Leveys a mm	URAVASARAT -VARRELLISET
NSTM 3	3	
NSTM 4,5	4,5	
NSTM 5,5	5,5	
NSTM 6,5	6,5	
NSTM 7,5	7,5	
NSTM 8,5	8,5	
NSTM 9,5	9,5	
NSTM 10	10	
NSTM 11	11	
NSTM 12	12	


Malli Nro	Leveys a mm	URAMAILAT
NS 2	2	
NS 3	3	
NS 4	4	
NS 5	5	
NS 6	6	
NS 7	7	
NS 8	8	
NS 9	9	
NS 10	10	

Malli Nro	Pituus x leveys mm	URANSULKIJAPIHTI
NKEZ 2070	200 x 13	




Malli Nro	Mitat L x K x P mm	KÄÄMINPULJOTUSPUIKOT
KP 1	13 x 2 x 180	
KP 2	8 x 8 x 185	
KP 3	15 x 10 x 195	
KP 4	24 x 15 x 255	
KP 5	30 x 40 x 320	
Malli Nro	Pituus mm	
TS kahva	145	
TS kärki, suora	72	
TS kärki, 90°	45 x 27	


Malli Nro	Mitat mm	SIDONTANEULAT
SN 04	Ø 0,8	
SN 07	Ø 1,2	
SN 10	Ø 1,4	
SN 25	0,3 x 2,5	


Malli Nro / Väri	Ø -alue	VYYHTIKLEMMARIT
VK 3, sininen	3,5 ... 6	
VK 4, punainen	6,5 ... 10	
VK 5, vihreä	10 ... 12,5	
VK 6, musta	13,5 ... 16	
VK 7, keltainen	17,5 ... 20	
VK 8, valkoinen	25 ... 27,5	

Malli Nro	Pituus mm	ERISTESAKSET
PS 1123	160	
GS 1875	180	


KOMMUTAATORIN HUOLTOTYÖKALUT


Malli No	Kiven mitat mm	Karkeus	HIONTAKIVET
Kahvamalli 1			
121	10 x 8 x 10	karkea	
122	10 x 8 x 10	keski	
123	10 x 8 x 10	hieno	
124	15 x 15 x 15	karkea	
125	15 x 15 x 15	keski	
126	15 x 15 x 15	hieno	
127	20 x 20 x 20	karkea	
128	20 x 20 x 20	keski	
129	20 x 20 x 20	hieno	
Kahvamalli 2			
130	32 x 25 x 32	karkea	
131	32 x 25 x 32	keski	
132	32 x 25 x 32	hieno	
Kahvamalli 3			
133	40 x 25 x 40	karkea	
134	40 x 25 x 40	keski	
135	40 x 25 x 40	hieno	
136	40 x 40 x 40	karkea	
137	40 x 40 x 40	keski	
138	40 x 40 x 40	hieno	
139	75 x 50 x 50	karkea	
140	75 x 50 x 50	keski	
141	75 x 50 x 50	hieno	
142	75 x 75 x 50	karkea	
143	75 x 75 x 50	keski	
144	75 x 75 x 50	hieno	
145	100 x 75 x 50	karkea	
146	100 x 75 x 50	keski	
147	100 x 75 x 50	hieno	
148	100 x 75 x 50	karkea	
149	100 x 75 x 50	keski	
150	100 x 75 x 50	hieno	
151	125 x 75 x 50	karkea	
152	125 x 75 x 50	keski	
153	125 x 75 x 50	hieno	


Kahvamalli 4			
154	75 x 50 x 50	karkea	
155	75 x 50 x 50	keski	
156	75 x 50 x 50	hieno	
157	75 x 75 x 50	karkea	
158	75 x 75 x 50	keski	
159	75 x 75 x 50	hieno	


Kahvamalli 5			
160	125 x 75 x 50	karkea	
161	125 x 75 x 50	keski	
162	125 x 75 x 50	hieno	
163	150 x 75 x 50	karkea	
164	150 x 75 x 50	keski	
165	150 x 75 x 50	hieno	

Kahvamalli 6			
166	200 x 100 x 75	karkea	
167	200 x 100 x 75	keski	
168	200 x 100 x 75	hieno	
169	220 x 110 x 75	karkea	
170	220 x 110 x 75	keski	
171	220 x 110 x 75	hieno	
172	150 x 140 x 75	karkea	
173	150 x 140 x 75	keski	
174	150 x 140 x 75	hieno	
175	230 x 130 x 75	karkea	
176	230 x 130 x 75	keski	
177	230 x 130 x 75	hieno	
178	230 x 150 x 75	karkea	
179	230 x 150 x 75	keski	
180	230 x 150 x 75	hieno	

Malli No	Mitat Ø x pituus mm	KIILLOTUSSAUVAT
GFBO 10	10 X 200	
GFBO 20	20 X 200	
GFBO 30	30 X 200	
GFBO 40	40 X 200	

Malli No	Mitat mm	HOHKAKIVI / HIILENPETAUSLIITU
U761000	9 X 6	
U761005	12 X 8	
U761010	15 X 15	
U761015	20 X 20	


Malli No	Mitat mm	URASAHA KOSS 28
KOSS 28	kahva + teräsarja	
KOBS 2803	0,3 x 28	
KOBS 2804	0,4 x 28	
KOBS 2805	0,5 x 28	
KOBS 2806	0,6 x 28	
KOBS 2807	0,7 x 28	
KOBS 2808	0,8 x 28	
KOBS 2810	1,0 x 28	


Malli No	Mitat mm	URASAHA KOSE 130
KOSE 130	Kahva + terä 0,5 (+0,35 terä puulle ja muoville)	
KOBE 1304	0,4 x 130	
KOBE 1305	0,5 x 130	
KOBE 1306	0,6 x 130	
KOBE 1307	0,7 x 130	
KOBE 1308	0,8 x 130	
KOBE 1310	1,0 x 130	

Malli No	Mitat Ø x paksuus mm	URASAHA LWA KF -1
LWA 70 KF-1	Paineilmasaha	Timanttiterät: halkaisija x paksuus akseli halkaisija 3,0 mm
D08-C2-FKGO	Vedeneroitin ja voiteluyksikkö	
1903	19 x 0,3	
1904	19 x 0,4	
1905	19 x 0,5	
1906	19 x 0,6	
1907	19 x 0,7	
1908	19 x 0,8	
1909	19 x 0,9	
1910	19 x 1,0	
2203	22 x 0,3	
2204	22 x 0,4	
2205	22 x 0,5	
2206	22 x 0,6	
2207	22 x 0,7	
2208	22 x 0,8	
2209	22 x 0,9	
2210	22 x 1,0	

ERIKOISTYÖKALUT

Malli Nro	Koko / Ø	KOLMIOAVAIMET
DKSS 0411	M4 / 11	
DKSS 0513	M5 / 13	
DKSS 0615	M6 / 15	
DKSS 0818	M8 / 18	
DKSS 1022	M10 / 22	
DKSS 1224	M12 / 24	
DKSS 1630	M16 / 30	

Malli Nro	Koko / Ø	KOLMIOAVAINHYLSYSARJA
DKSW 4200	M 4, 5, 6, 8, 10, 12, 16, 20	
DKSE 4224 hylsy	M 24	

Malli Nro	Koko / Ø	URARUUVITALTAT
HSSD 0619	M3 / 6/3,2	
HSSD 0820	M4 / 8/4,2	
HSSD 1023	M5 / 10/5,3	
HSSD 1123	M6 / 11/6,4	
HSSD 1426	M8 / 14/8,4	

Malli Nro	Koko	KAULUSRUUVITALTAT
BUSD 2555	2,5 x 5,5	
BUSD 3565	3,5 x 6,5	
BUSD 3566	3,8 x 7,8	
BUSD 4595	4,8 x 9,8	

Malli Nro	Koko	RISTIKKOAVAIMET
KSMS 4568	M7+8+9+10	
KSMS 0713	M7+8+10+13	
KSMS 0814	M8+10+13+14	
KSMS 1319	M13+14+17+19	

GENERATORI DI GAS WATER GAS GENERATORS



www.oweld.com

**SALDATURA BRASATURA STAGNATURA
WELDING BRAZING SOLDERING**

RAME OTTONE ALLUMINO NICHEL BRONZO ORO ACCIAIO INOX
COPPER BRASS ALUMINIUM NICKEL BRONZE GOLD STAINLESS-STEEL



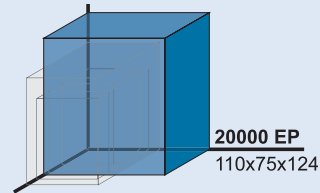
20.000 EP



CARATTERISTICHE - CHARACTERISTIC

MODELLO - MODEL	20.000 EP
Potenza Massima kW Max kW	19
Produzione di Gas: litri/ora Efficiency Max Gas CFM	5.000 170
Consumo Acqua Distillata: litri/ora Distilled Water Consumption: cu in/hr	2 120
Temperatura Fiamma Flame Temperature (°C)	3.650
Peso kg Weight lbs	630 1388
Diametro Massimo Ugello mm Maximum Nozzle Diameter	2,8

INGOMBRO - DIMENTIONS



20.000 EP

Modello di grandi dimensioni a controllo automatico adatto per:

- produzione motori elettrici, trasformatori e generatori di grandi dimensioni
- riparazione motori elettrici e generatori
- grandi impianti di aria condizionata
- collettori solari
- costruzione e riparazione lame con metalloduro
- statue di grandi dimensioni

20.000 EP

Oxyhydrogen flame ideal for:

- OEM, transformers and power generators large size
- electric motor and power generator repair shops
- large air conditioning supplies
- solar collectors
- manufacturing and repair of saw blades with hard metal
- manufacturing of large statues





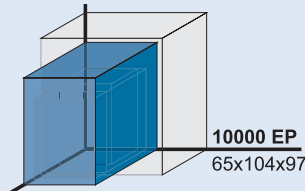
10.000 EP



CARATTERISTICHE - CHARACTERISTIC

MODELLO - MODEL	10.000 EP
Potenza Massima kW Max kW	10
Produzione di Gas: litri/ora Efficiency Max Gas CFM	2.400 85
Consumo Acqua Distillata: litri/ora Distilled Water Consumption: cu in/hr	1 60
Temperatura Fiamma Flame Temperature (°C)	3.650
Peso kg Weight lbs	285 600
Diametro Massimo Ugello mm Maximum Nozzle Diameter	2,4

INGOMBRO - DIMENTIONS



10.000 EP

Modello di grandi dimensioni a controllo automatico adatto per:

- produzione motori elettrici di grandi dimensioni
- riparazione motori elettrici
- trasformatori di medie dimensioni
- frigoriferi, aria condizionata, scambiatori di calore
- collettori solari
- costruzione e riparazione lame con metallo duro
- lampadari, statue coppe e trofei in ottone
- lavorazione del vetro (vetro artistico, medicale ecc.)

10.000 EP

Oxyhydrogen flame ideal for:

- OEM, trasformers (large size)
- electric motor work shops
- large transformers
- refrigeration, heat exchangers, air conditioning
- solar collectors
- manufacturing and repair of saw blades with hard metal
- manufacturing of trophies, chandeliers, statues and other brass articles
- glass works





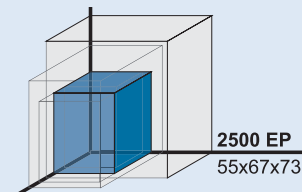
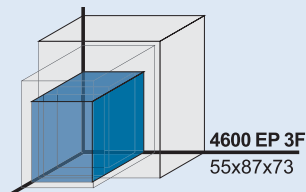
4600 EP3F - 2500 EP



CARATTERISTICHE - CHARACTERISTIC

MODELLO - MODEL	4600 EP3F	2500 EP
Potenza Massima kW Max kW	4,5	2,5
Produzione di Gas: litri/ora Efficiency Max Gas CFM	1.200 42	500 17
Consumo Acqua Distillata: litri/ora Distilled Water Consumption: cu in/hr	0,55 33	0,25 17
Temperatura Fiamma Flame Temperature (°C)	3.650	3.650
Peso kg Weight lbs	155 340	110 240
Diametro Massimo Ugello mm Maximum Nozzle Diameter	2	1,5

INGOMBRO - DIMENTIONS



4600 EP3F

Modello di medie dimensioni a controllo automatico adatto per:

- produzione motori elettrici di medie dimensioni
- riparazione motori elettrici
- trasformatori
- frigoriferi, condizionatori, scambiatori di calore
- collettori solari
- costruzione e riparazione lame con metallo duro
- lampadari, statue coppe e trofei in ottone
- accessori moda e fibie di grosse dimensioni
- lavorazione vetro artistico

4600 EP3F

Oxyhydrogen flame ideal for:

- OEM (medium size)
- electric motor repair shops
- small transformers
- refrigeration, air conditioning and heat exchangers
- solar collectors
- manufacturing and repair saw blades with hard metal
- fashion accessories (large size buckles etc.)
- manufacturing of trophies, chandeliers, statues and other brass articles
- glass works

2500 EP

Modello di medio/piccole dimensioni a controllo automatico adatto per:

- lucidatura di grossi spessori di plexiglass, fino a 250 mm in una solo passaggio.
- produzione motori elettrici di piccole dimensioni
- accessori moda e fibie
- lavorazione oro

2500 EP

Oxyhydrogen flame ideal for:

- thick acrylic edges flame polishing
- OEM (small size)
- fashion accessories
- gold accessories





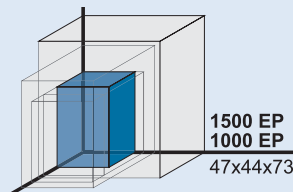
1500 EP - 1000 EP



CARATTERISTICHE - CHARACTERISTIC

MODELLO - MODEL	1500 EP	1000 EP
Potenza Massima kW Max kW	1,5	1
Produzione di Gas: litri/ora Efficiency Max Gas CFM	300 10,5	200 7
Consumo Acqua Distillata: litri/ora Distilled Water Consumption: cu in/hr	0,15 9	0,1 6
Temperatura Fiamma Flame Temperature (°C)	3.650	3.650
Peso kg Weight lbs	75 165	65 140
Diametro Massimo Ugello mm Maximum Nozzle Diameter	1,2	1

INGOMBRO - DIMENTIONS



1500 EP - 1000 EP

Modelli di piccole dimensioni a controllo automatico adatti per:

- lucidatura plexiglass
- brasatura
- saldatura e stagnatura di piccole superfici di metallo (oro, ottone, rame ecc.)

1500 EP - 1000 EP

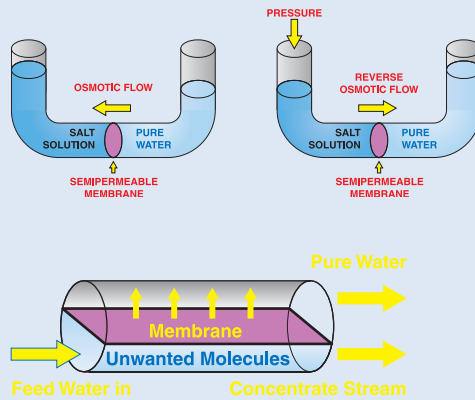
Oxyhydrogen flame ideal for:

- acrylic edge flame polishing.
- brazing
- soldering and welding small metal surfaces (gold, copper, brass etc.)





OSMI 50



DEMINERALIZZATORE AD OSMOSI

OSMI 50, è un apparecchio per la produzione di acqua demineralizzata direttamente dall'acquedotto.

DEMINERALIZE OSMOSIS

OSMI 50, osmosis system to produce demineralized water directly from water tap.

FP

FR 60

EPR1



ACCENDINO ELETTRONICO

Apparecchio economizzatore per l'accensione e lo spegnimento rapido della fiamma.

START UP UNIT

Light up and switch of the flame. Manual on/off switch



ESSICCATORE GAS

Permette di abbattere eventuali residui di condensa presenti nel gas.

GAS DRYER

available option



REGOLATORE DI PRESSIONE ELETTRONICO

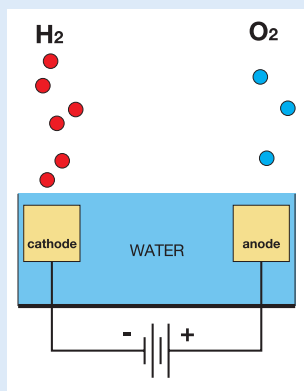
Stabilizza la pressione del gas sul cannello.

ELECTRONIC PRESSURE REGULATOR

available option



PRINCIPIO DI FUNZIONAMENTO ELECTROLYSIS OF WATER



PRINCIPIO DI FUNZIONAMENTO

Il Generatore di Gas OWELD sfrutta il principio dell'elettrolisi per ricavare il gas ossidrico dall'acqua.

Nell'elettrolisi si utilizza l'energia elettrica per scomporre l'acqua nei due gas (Idrogeno ed Ossigeno) di cui è costituita.

Una volta purificati e miscelati vengono messi direttamente a disposizione dell'utilizzatore.

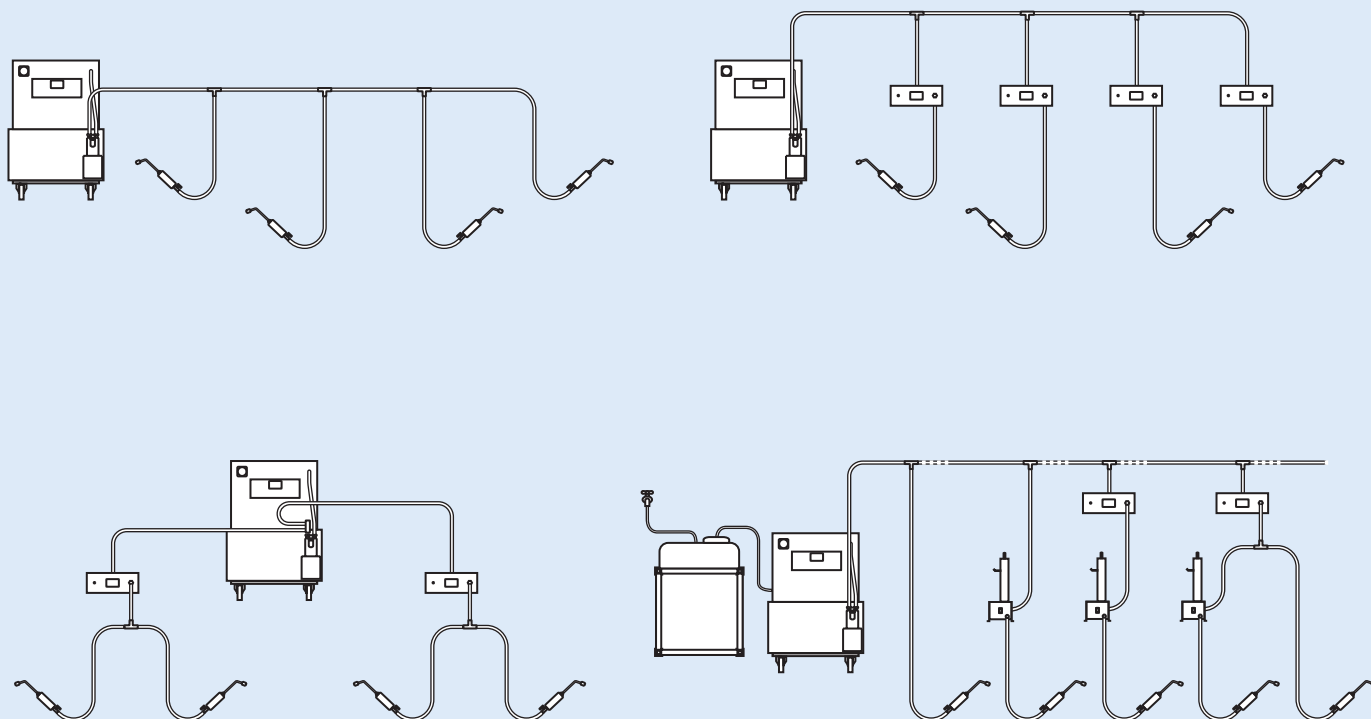
ELECTROLYSIS OF WATER

A water molecule (H_2O) is composed of two hydrogen atoms and one oxygen atom. The molecule is colorless, odorless, and tasteless.

The hydrogen atoms in water are joined to the central oxygen atom by single polar covalent bonds.

Electrolysis is an electrochemical process by which electrical energy is used to promote chemical reactions that occur at electrodes. In more simple terms, electrolysis is the decomposition of a compound by passing an electric current through it.

ESEMPI DI COLLEGAMENTO EXAMPLES OF CONNECTIONS





SICURO

Non vi sono pericoli di esplosione, perchè il generatore produce solo la quantità di gas utilizzata. La pressione massima interna è di 0,5 bar. Sono eliminati i rischi che comportano il deposito di bombole contenenti gas ad alta pressione.

SAFETY

There is no risk of explosion because the generator produces only the gas that it consumes. The maximal internal pressure is 10 psi and the risk of having stored high pressure bottled gases is eliminated.

FACILE UTILIZZO

Non richiede personale specializzato.

EASY TO USE

Minimal training required for operation.



ECOLOGICO

Non inquina, perchè l'unico prodotto della combustione è vapor acqueo. A differenza dei sistemi tradizionali, la cui fiamma genera nella migliore delle ipotesi monossido di carbonio, il sistema OWELD non emette alcun tipo di sostanza nociva.

ECOLOGY

In many other systems, the by-product is carbon monoxide, which is harmful to people and environment. In this case, there is no risk to the environment because the by-product of combustion is water vapour.



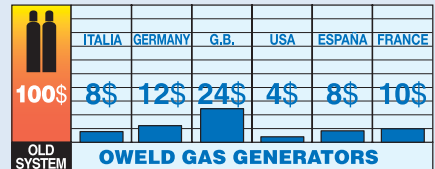
ECONOMICO

Il risparmio sul costo di esercizio è superiore all'85%, comparato con un sistema a gas di tipo tradizionale (vedi tabella). Il costo di utilizzo è ridotto al solo consumo di energia elettrica e acqua distillata (250 cm³ di acqua per 600 litri/ora di gas ossidrico).

ECONOMY

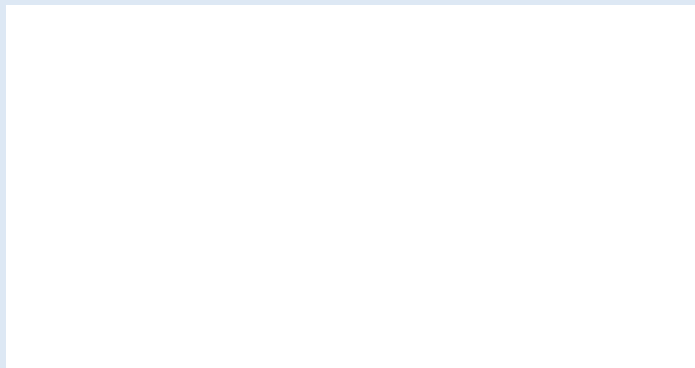
85% less expensive than the cost of gas. In order to maintain and operate the cost is comparable to electricity and distilled water.

COSTO D'ESERCIZIO OPERATIONAL COST
In rapporto col sistema tradizionale
Compared to traditional systems




OWELD
La nostra azienda è stata istituita nel 1981. Da sempre produciamo generatori di gas miscelati e li esportiamo in tutto il mondo. La nostra profonda esperienza in materia, sommata al continuo impegno nella ricerca e nello sviluppo tecnologico, ci permettono di offrire affidabilità e professionalità senza eguali.

OWELD was founded in 1981. A unique system was produced to create gas from water through extensive research and development. In 1997, H2OWELD was formed in the United States, moving us closer to our goal of the complete globalisation of oweld.



12/04/07 I-USA 5000



GAS GENERATOR

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GAS GENERATOR

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fax +201 9911752
h2oweld@comcast.net

THE COMPLETE RANGE OF TOOLS FOR MOUNTING, DISMOUNTING AND CHECKING OF ROTATING EQUIPMENT, IN MAINTENANCE AND PRODUCTION

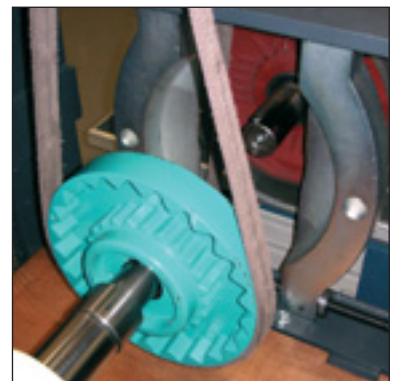
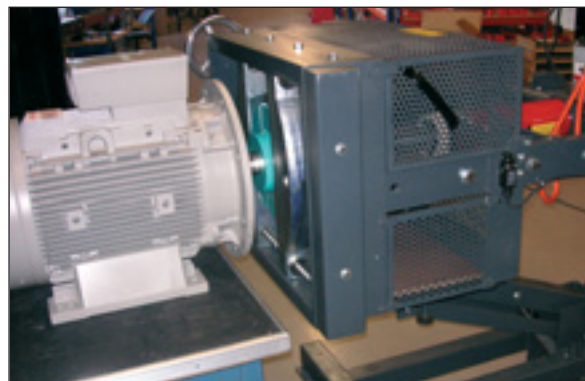
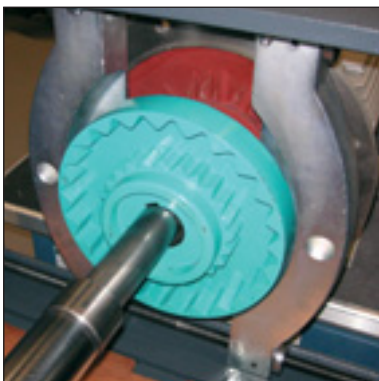


BETEX

MOBIPULLER MOBILE HYDRAULIC PULLER



25
or
50 tons



THE BETEX MOBIPULLER

is a heavy duty, mobile hydraulic puller. It is used for dismantling bearings, couplings, gears and other parts, with relative speed and ease. The Mobipuller excels through functional and ergonomic operation.

It is stable, mobile and adjustable in height. A maximum tractive force of either 25 or 50 tons can be applied with diameters of upto 430 mm.

To ensure safe and easy operation the electrical models are equipped with remote control.

Optional:

For diameters larger than 430 mm, we advise to use an extension adaptor, for a max. diameter of 1500 mm and a max. shaft length of 970 mm!

Remote control ►

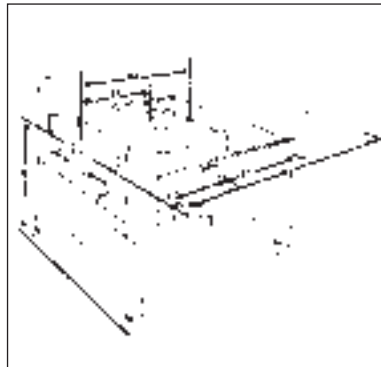
For personal safety ►
all models are equipped with a safety cage



▲ Auxiliary tools for dismantling of inner rings and delicate components.

MEANING OF CODES:

25-50	tractive force in tons
430	max. diameter in mm
H	manual hydraulic
E	electrical hydraulic
V	mobile
A	remote control
S	max. stroke in mm
D	double acting



	Type	manual hydraulic		electric hydraulic		electric hydraulic double acting	
	force (tonnes)	25	50	25	50	50	50
S	stroke cylinder mm	260	260/340	260	260/340	340	460
	pump manual/ electric 230 V	manual	manual	single acting electric		double acting electric	
A1	in standard position mm	575	575/500	575	575/500	450	300
A2	in extended position mm	955	955/800	955	955/880	830	680
B1	frame length standard mm	1210	1210	1210	1210	1210	1210
B2	frame length extended mm	1590	1590	1590	1590	1590	1590
	position high/low mm	1100/1650	1100/1650	1100/1650	1100/1650	1100/1650	1100/1650
	dimensions L x W mm	1470x1040	1470x1040	1470x1040	1470x1040	1470x1040	1470x1040
C	diameter of jaws mm	430	430	430	430	430	430
D	set-up height mm	800/1360	800/1360	800/1360	800/1360	800/1360	800/1360
	adapters mm (175 mm)	Ø40,50	Ø40,50	Ø40,50	Ø40,50	Ø40,50	Ø40,50
	safety cage	yes	yes	yes, incl. safety switch		yes, incl. safety switch	
	weight kg	± 400	± 400	± 400	± 400	± 400	± 400
	emergency stop			yes	yes	yes	yes
	pressure gauge	yes	yes	yes	yes	yes	yes



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www.bega.nl, info@bega.nl



Microclean Maxiclean Masterclean



GBP
ERGONOMICS

GBP TVÄTTAR FÖR MASKIN VERKTYG OCH SMÅ DELAR

GBP's industritvättar är utvecklade i samarbete med expertis inom området. Vi har inte bara tagit hänsyn till att maskin- och motordetaljer behöver rengöras effektivt för att kunna fungera längre, utan också till tiden, pengarna och miljön

Snabb rengöringsprocess i kombination med konkurrenskraftiga priser och driftsnålhet ger bättre ekonomi.

Våra tvättar är utrustade med ventilationskåpa och kan enkelt anslutas till befintligt ventilationssystem. Tvättmaskinen ger dig en bättre arbetsmiljö på köpet.

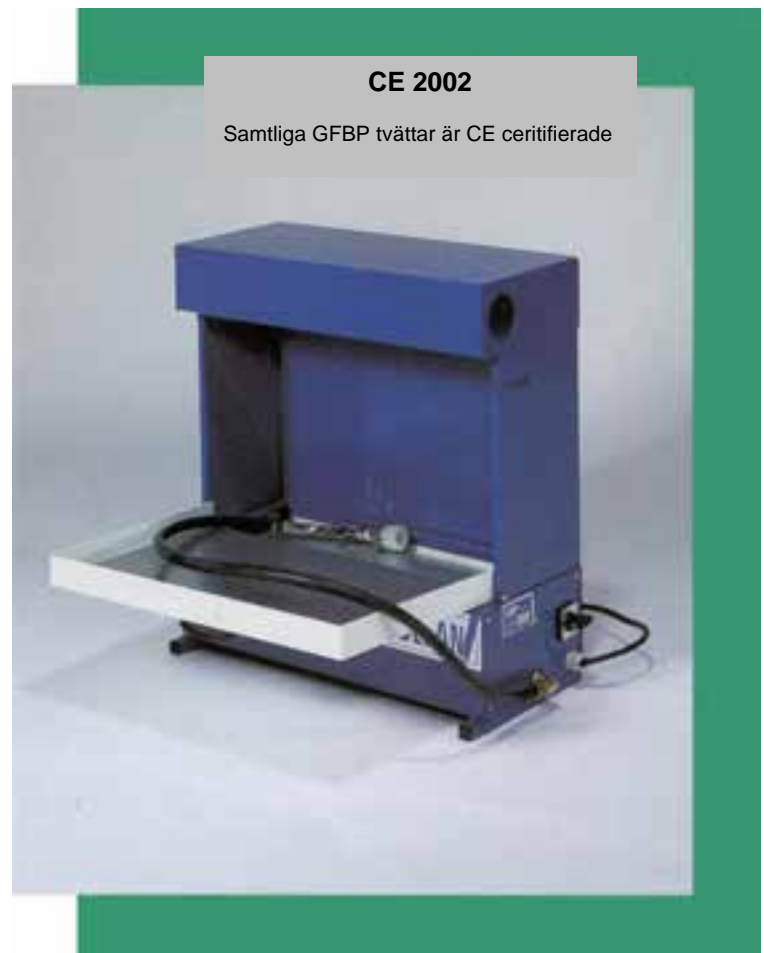
Eftersom vi sedan många år tillbaka har tillverkat industritvättar, känner vi väl till de problem som kan vara förknippade med rengöring av detaljer inom olika industrigrenar.

Tvättarna tillverkas i vår modern maskinpark, vilket eliminerar riskerna med ojämn kvalitet. "Know how" och jämn kvalitet är viktigt, när du väljer leverantör.

MICROCLEAN

Vår minsta maskin är lämplig för service- och bilverkstäder. Microclean kan placeras direkt på en arbetsbänk eller hängas upp på en vägg i lämplig höjd.

Tvättgodset tvättas manuellt och är idealistiska lösningen för tvättning av små maskin- och motordelar.



SPAR TID OCH FÖRBÄTTRAR ARBETSMILJÖ



MAXICLEAN

Maxiclean har två tvättsystem, som kan användas samtidigt eller separate.

Godset kan antingen placeras i det stängda utrymmet och tvättas automatiskt av tre munstycken, eller tvättas manuellt med tvättborste.

Tvätten är utrustad med ställfötter som standard. En hjulsats finns som tillbehör, för att tvätten skall kunna förflyttas mellan olika arbetsplatser.



MASTERCLEAN

Även Masterclean har två tvättsystem som i likhet med Maxiclean kan användas tillsammans eller separate.

Tvättgodset kan rengöras i det slutna utrymmet där det spolas automatiskt av sex rörliga munstycken från både under- och översida, eller tvättas manuellt med borste.

TEKNISK INFORMATION

BENÄMNING	Art Nr. MICROCLEAN	Art Nr. MAXICLEAN	Art Nr. MASTERCLEAN
Tvättutrymme (BxDxH)	515x170x335 mm	900x410x310 mm	770x400x370 mm
Anslutningsstos för ventilation	1 St	1 St	(Stängd lucka) 1 St
Antal spolmunstycken (över spolning)	-	3 St	3 St
Tvättbord (BxD)	515x340 mm	930x230 mm	840x200 mm
Max tvättvikt	20 kg	100 kg	100 kg
Tvättbordets höjd	-	830 mm	870 mm
Pumpens kapacitet	28 l/min	28 l/min	28 l/min
Antal pumpar	1	1	3
Tvättpistol med borste	1	1	1
Tankvolym	8 l	30 l	30 l
Ytermått BxDxH utan länkhjul	590x250x625 mm	970x700x1130 mm	1010x710x1300 mm
Maskinvikt	24 kg	72 kg	96 kg
Filter, sedimentering	1	1	1
Nätsil vid pump	1	1	1
Anslutningseffekt 220-240 V/50 Hz	85 watt	85 watt	3x85 watt
Tvättvätska, Kall-Avfettning eller liknande Med flampunkt minst 70 grader C.	X	X	X

TILLBEHÖR

Art Nr.	Benämning	Microclean	Maxiclean	Masterclean
36 190	Ventilationsslang	X		
36 186	Tvättkorg 420x270x190 mm		X	X
36 188	Tvättkorg 250x120x90 mm		X	X
36 191	Hjulsats		X	

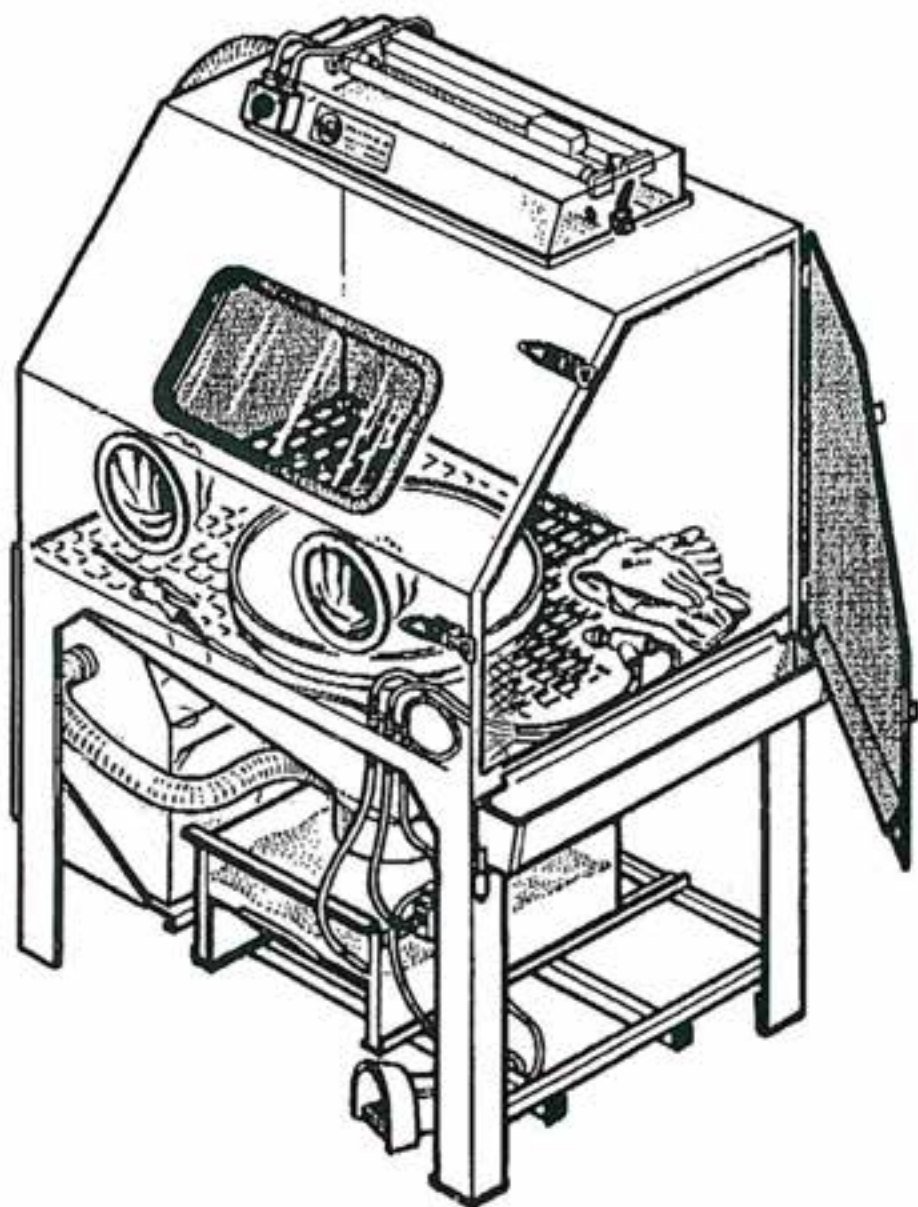


GBP ERGONOMICS ÄR ETT KENDRION FÖRETAG

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Blästerutrustning för industri & verkstad



**ILB-MASKINER
DEVELOPMENT AB**



Produktpresentation

Blästertekniken har idag ett mycket stort användningsområde t.ex. rengöringsblästring såsom:

Avsandning, avrostning, avskalning, avlägsnande av rester (oxider, separeringsmedel, limlösningar, pannsten, kol, sot, klister, fläckar): avlägsnande av målarfärg och beläggningar (lack, färg, krom, nickel, kadmium, koppar, zink, tenn, gummi, plast, hårda material) i stället för borstning, slipning, betning, skavning, tvättning, avlägsnande av lödnings- och svetsrester, avlägsnande av anlöpningsfärger. – Samtidigt förberedande av ytorna för metalliska eller icke-metalliska beläggningar.

Eller ytförädlingsblästring såsom:

Avgradnings-, poler/glätt-, läppnings- (även polera) och polerblästring (ruggningsdjupreducering, avlägsnande av bearbetnings-spår, allmän ytbehandling, antireflex, mattarbetning, dekor, mönster, ornament, struktur, mattpolering, satinbehandling), uppenbarande av ytfelaktigheter.

ILB-Maskiner i Kungälv har under lång tid utvecklat och anpassat sina produkter för den verkligt kräsne blästraren, och är nu idag väl framme med den mest effektiva metoden inom blästring med återvinning samt blästersugar. Blästerutrustningarna är byggda i samarbete med arbetarskyddstyrelsen vilket ger den säkerhet som krävs för blästraren.

Hör av dig till oss så får du veta vem som är närmaste återförsäljare på din ort och som kan demonstrera blästerutrustningen för er.

ILB-Maskiner Development AB

Svarvaregatan 21, 442 34 Kungälv

Tel. 0303-184 07

Fax 0303-184 06

Hemsida: www.ilb-maskiner.com

E-mail: leif.bengtsson@ilb-maskiner.se



ILB-MASKINER
Kungälv

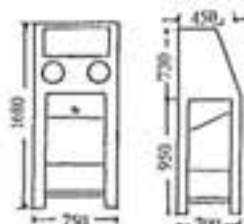


ILB 775

Best.nr ILB 775

En kompakt blästermaskin med bekväm arbetsinställning och mycket bra översikt över arbetsmomenten. Maskinen har stor siktruta av 4 mm hårdglas i Z-list, stor frontlucka med dörrspärr, 2-polig säkerhetsbrytare, liten smidig blästerpistol ca 400 l/m, handskar medföljer, monterat stoftavsug med förfilter och microfilter för effektiv rening av utluften från blästerkabinen.

ILB 700 och 775

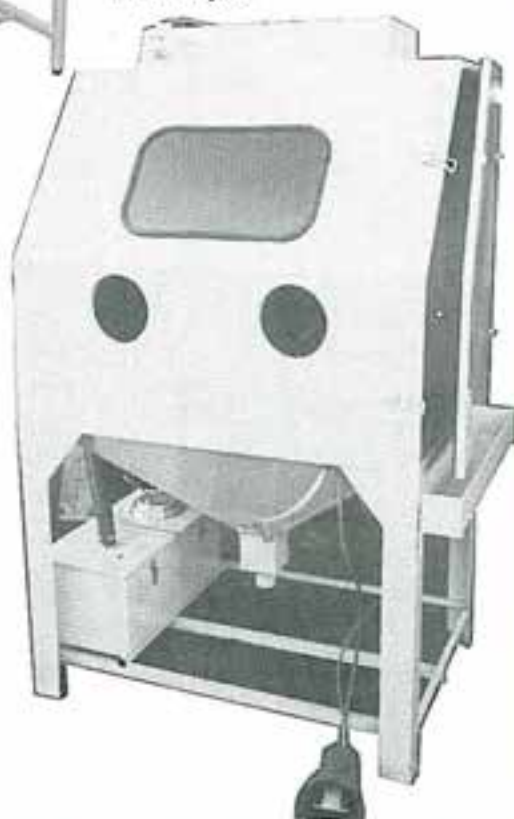


Modell	700	775	1100
Förfilter 17	-	1	1
Microfilter 14	-	1	1
Sidolåda	-	-	1
Renblåsn. pistol	-	-	1
Handskar	1P	1P	1P
Blästerpistol	523	523	521-10
Luftförbr. vid 7 bar	ca 400 l/m	ca 400 l/m	ca 1000
Max bar	8	8	8
Belysning W/220V	Lysrör 2x18	Lysrör 2x18W	Lysrör 2x18W
kW/220V	36W	1	1
Kg	45	60	95

ILB 700

Best.nr ILB 700

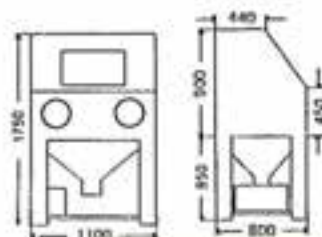
En kompakt blästermaskin med bekväm arbetsinställning och mycket bra översikt över arbetsmomenten. Maskinen har stor siktruta av 4 mm hårdglas i Z-list, stor frontlucka med dörrspärr, 2-polig säkerhetsbrytare, liten smidig blästerpistol ca 400 l/m, handskar medföljer.



ILB 1100

Best.nr ILB 1100

Mod 1100 har stor sidolucka, för enkel ur- och ilastning. Monterad blästerpistol med fotmanöver och säkerhetsspärr.





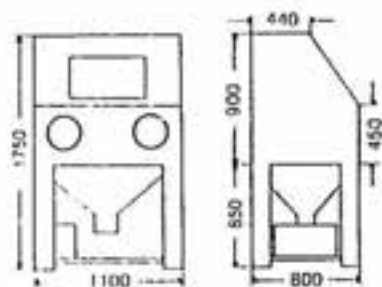
ILB 1200

Best.nr ILB 1200

Mod. 1200 är i första hand byggd för GLAS-BLÄSTRING. Samma mått som MOD 2000 men har ett enkelt avsug och reningssystem. Dom flesta blästermedel går att använda i denna Mod. som i alla våra övriga modeller.



Modell	1200
Förfilter 17	1
Microfilter 14	1
Sidolåda	1
Renblåsningspistol	1
Handskar	1 P
Blästerpistol	521-10
Luftförbr. vid 7 bar/pistol	ca 1000 l/m
Max bar	8
Belysning W/220V, lysrör	2x18
KW/220V	1
Kg	100



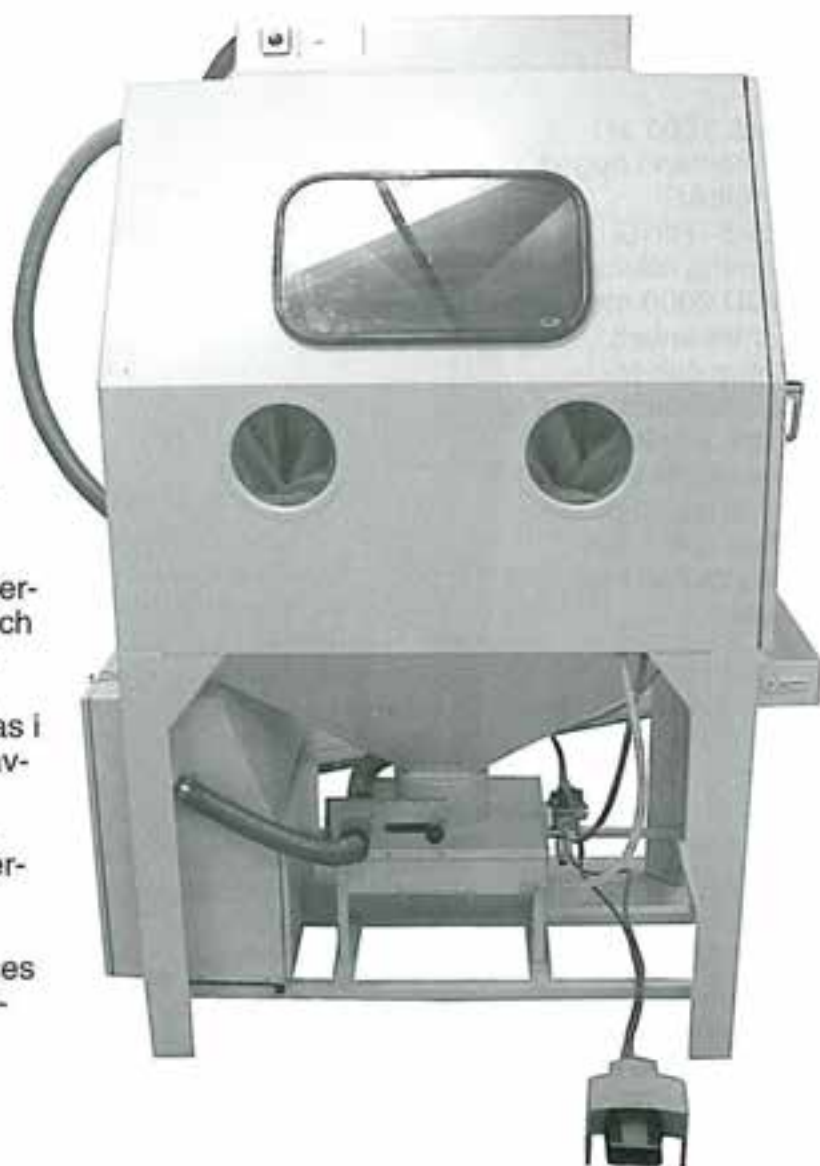


ILB 2000

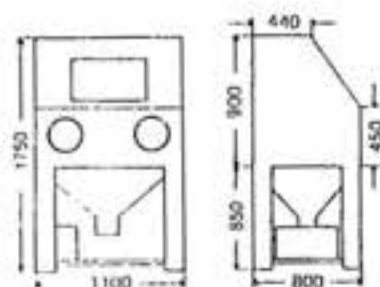
Best.nr ILB 2000

Modellen 2000 har stor sido-lucka, för enkel ur- och ilastning. Blästermedelsbehållare under kabinen. Monterad blästerpistol med fotmanöver och säkerhetsspärr. Patent-sökt. Modellen har stor siktruta av 4 mm härdglas i enkel Z-list. Mont. Stoffavsug inkl. förfilter och microfilter samt dubbelt reningssystem för blästermedlet.

Alla mod. med mod.nr 1100 och uppåt kan förses med rälsbana på beställning.

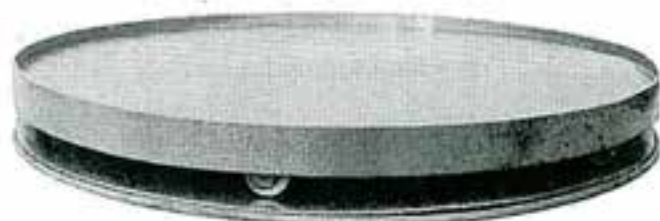


Modell	2000
Förliter 17	2
Microfilter 14	2
Sidolåda	1
Renblåsningspistol	1
Handskar	1P
Blästerpistol	521-15
Luftförbr. vid 7 bar/pistol	ca 1500 l/m
Max bar	8
Belysning W/220V, lysrör	2x18
KW/220V	2
Kg	115





Tillbehör ILB Bläster



ILB 501. Vridplatta 500 Ø mm Till alla mod. över 1100.



ILB 515. Filter-regulator med manometer. Alla mod. Ange L/min.



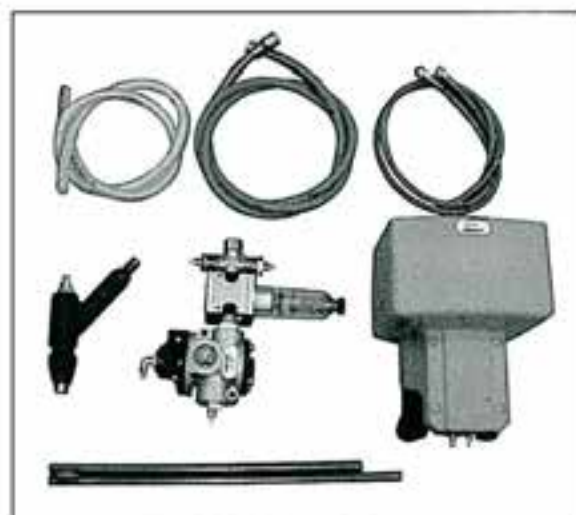
ILB 17. Förfilter till alla ILB-sugkällor.



ILB 14. Microfilter till alla ILB-sugkällor.



ILB 521-10KPL. Ca 1000 L/min. Komplet stort blästerpistol med fotmanöver.



ILB 521-15KPL. Ca 1500 L/min. Komplet stort blästerpistol med fotmanöver.



ILB 521-10. Separat blästerpistol ca 1000 L/min.

ILB 521-15. Separat blästerpistol ca 1500 L/min.

ILB 511. Extra blästermedelbehållare. Till alla mod. över 1200.

ILB 340. Förfilter till sugdel 340.

ILB 28. Sikruta blästerkabin 4-pack.

ILB 26. Tygmanschetter par.

ILB 25. Handskar par.

ILB 520. Renblåsningspistol. Komplet med slang och nippel.

ILB 521-37. Nippel till blästerpistoler 521-10 och 521-15.

ILB 523. Liten blästerpistol med pistolavtryck ca 400L/min.

ILB 523-45. Nippel till pistol 523.



ILB 521-35. Blåstermunstycke stor pistol 521.



ILB 521-36-4. Luftdysa till blästerpistol 521-10.

ILB 521-36-5. Luftdysa till blästerpistol 521-15.

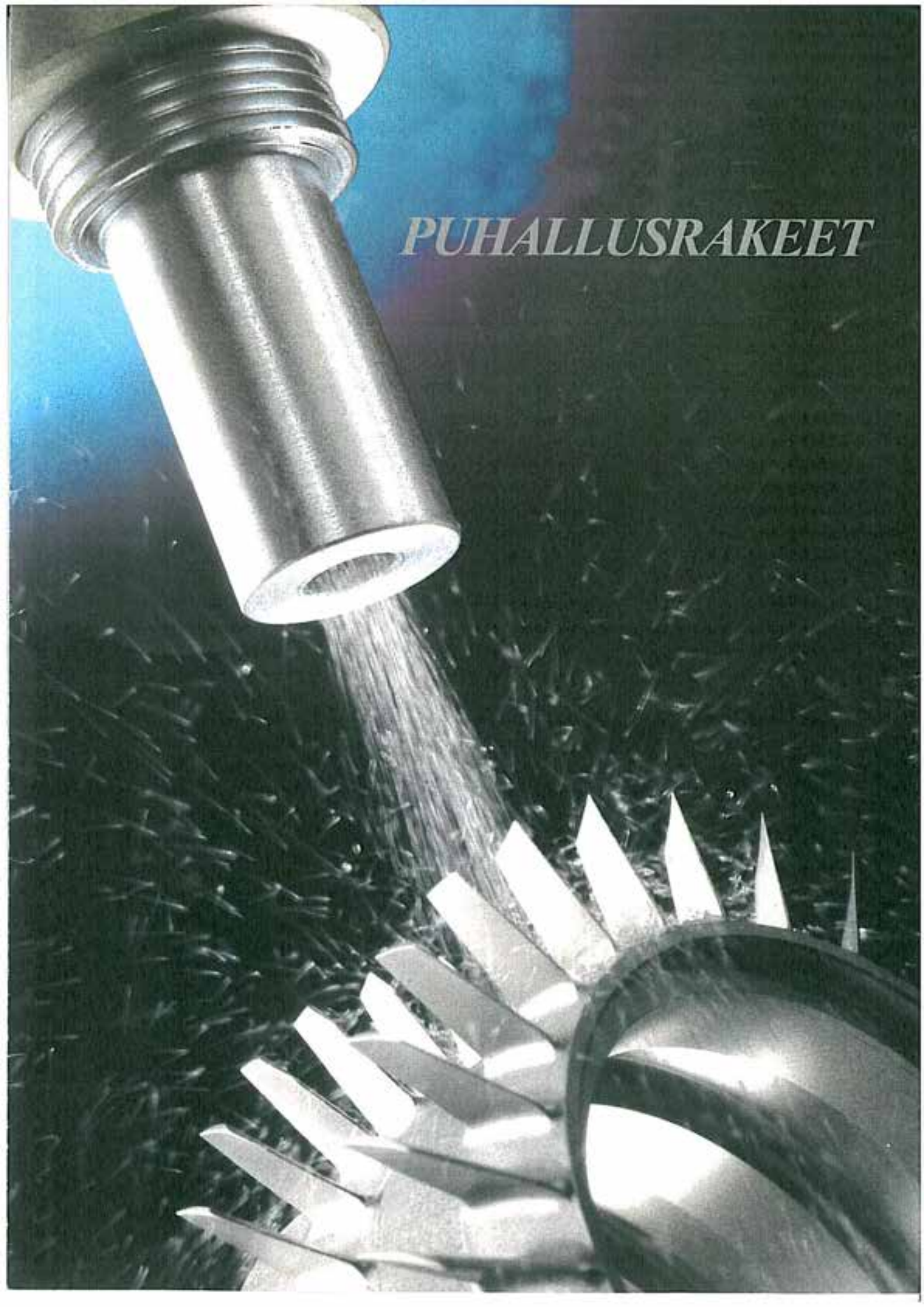


ILB 523-41. Blåstermunstycke till pistol 523.



ILB 523-42. Luftdysa till pistol 523.

PUHALLUSRAKEET



Lasikuulat

Pyöreytensä ja oikean kovuutensa (46 HRC) ansiosta lasikuulat eivät vahingoita tai kuluta perusainetta. Ne irrottavat lian, ruosteen, hilseen yms. jättäen kauniin, himmeänhohtoisen pinnan. Kemiallisesti neutraaleina ne eivät reagoi puhdistettavien materiaalien kanssa, niistä ei myöskään jää mitään epäpuhtauksia työkappaleeseen. Näin ollen lasikuulat soveltuvat lähes kaikentyyppiseen käyttöön pintojen esikäsitteilyä ja puhdistuksesta kuulapommitukseen (shot peening).

Koot

A	0,60-0,80 mm
BL	0,40-0,80 mm
B	0,40-0,60 mm
C	0,30-0,40 mm
AB	0,20-0,30 mm
AC	0,15-0,25 mm
AD	0,10-0,20 mm
AF	0,07-0,15 mm
AG	0,05-0,11 mm
AH	0,04-0,07 mm
AQ	0,01-0,05 mm

Pakkaus 25 kg

Sirkonioksidi

Pyöreän keraamisen sirkonioksidirakeen suuri etu on sen pitkäikäisyys. Rakeen käyttöikä voi olla jopa 12 kertainen lasikuulaan verrattuna. Koska rae on käytännössä rikkoontumatonta on pölynmuodostuminen vähäistä, jolloin työtilan näkyvyys on hyvä, suodattimien kuormitus vähenee ja ennen kaikkea työkappaleen kuluminen on olematonta. Puhallettu pinta on tasainen ja kirkas. Suhteellisen korkea ominaispaino sallii alhaisen puhalluspaineen käytön.

Koot

B 20	0,600-0,850 mm
B 30	0,425-0,600 mm
B 40	0,250-0,425 mm
B 60	0,125-0,250 mm
B 120	0,063-0,125 mm
B 125	0,01 - 0,125 mm
B 205	0,01 - 0,063 mm

Pakkaus 25 kg

Alumiinioksidi ja piikarbidi

Äärimmäisen kovuutensa (Mohs 9) ja särmikkään raemuotonsa ansiosta alumiinioksidi ja piikarbidi ovat tehokkaimmat yleisessä käytössä olevat puhallusrakeet.

Kemiallisesti neutraaleina sekä täysin metallittomana ne soveltuvat kaikkien materiaalien pintakäsittelyyn.

Suuri irrotuskyky hyvinkin alhaisilla paineilla merkitsee nopeutunutta työskentelyä, ajan, vaivan sekä paineilman säästöä.

Alumiinioksidit jaetaan puhtausasteensa mukaan seuraavasti

- valkoinen EK, alumiinioksidia noin 99,8 %
- ruskea NK, alumiinioksidia yli 95 %
- hiomalaikoista regeneroitu M, noin 80 %

Piikarbidi SIC

- piitä min. 98 %

Koot

FEPA 12	1,40-2,00 mm	FEPA 54	0,25-0,35 mm
FEPA 14	1,20-1,70 mm	FEPA 60	0,20-0,30 mm
FEPA 16	1,00-1,40 mm	FEPA 80	0,15-0,20 mm
FEPA 20	0,85-1,20 mm	FEPA 100	0,10-0,15 mm
FEPA 24	0,60-0,85 mm	FEPA 120	0,09-0,12 mm
FEPA 30	0,50-0,70 mm	FEPA 150	0,06-0,10 mm
FEPA 36	0,40-0,60 mm	FEPA 180	0,05-0,09 mm
FEPA 40	0,35-0,50 mm	FEPA 220	0,04-0,07 mm
FEPA 46	0,30-0,40 mm		

Pakkaus 25 kg

Teräsrakeet

Teräsrae on yleisin puhallusrae. Käyttölaite on joko sinkokone tai paineilmatoiminen puhalluslaite. Edellisissä laitteissa käytetään valtavoiittoisesti pyöreätä rautaa, jälkimmäisissä särmikästä.

Puhalluksen tarkoitus on joko kohteen puhdistaminen tai lujittaminen (shot peening).

Suhteellisen edullisena hinnaltaan teräsrae on omiaan suurten rauta- ja teräspintojen ja määrien käsittelyyn.

Merkintä	Koot	Merkintä	Koot
Särmikkäät rakeet		Pyöreät rakeet	
SAE	BS	SAE	
G16	G 47	S550	1,40-2,00 mm
G18	G 39	S460	1,18-1,70 mm
G25	G34	S390	1,00-1,40 mm
G25	G24	S330	0,85-1,18 mm
G40	G17	S280	0,71-1,00 mm
G50	G12	S230	0,60-0,85 mm
G80	G07	S170	0,42-0,71 mm
G120	G05		
	G02		

Pakkaus 25 kg

Pakkaus 25 kg

Ruostumaton pyöreä rae

Ruostumaton rae antaa kirkkaan, puhtaan metallisen pinnan ilman tummentumia ja rautapitoisia jäänteitä. Rakeen korkea ominaispaino merkitsee suurta iskutehoa ja siten myös suurta puhdistustehoa.

Erytisominaisuuksista johtuen niitä käytetään vaativien ja "vaikeiden" materiaalien suihkupuhdistuksessa tavanomaisten puhalteiden sijaan, jolloin saavutetaan merkittäviä etuja.

Pääominaisuudet

GRANOX GX (kromi) CRONIX CX (kromi/nikkeli)

Cr	~ 14 %	~ 18 %
Ni	~ 1 %	~ 8 %
C	0,3 % maks.	0,3 % maks.
Suurin kovuus	45 HRc	30 HRc

Raekoko

Molempia laatuja valmistetaan kaikkiin yleisiin käyttötarpeisiin seuraavan taulukon mukaan

Merkintä	Raekoko
No 20	0,08 - 0,30 mm
No 30	0,13 - 0,50 mm
No 40	0,40 - 0,85 mm
No 50	0,60 - 1,00 mm
No 60	0,70 - 1,20 mm
No 100	1,00 - 1,40 mm
No 150	1,20 - 1,70 mm
No 200	1,40 - 2,00 mm
Pakkaus	25 kg

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E-mail: etu@tst-stenbacka.fi, kirstu@tst-stenbacka.fi



Easy therm

induction heaters

**Controllable, fast, clean and save
heating system for bearings,
couplings and other parts.
Stress-free mounting ensured.**



Easy puller

bearing pullers



**Complete program high quality,
save and reliable bearing pullers
with self centrating jaws. Force
from 2 till 100 ton!**



www.tm-induction.com

TM induction heating has manufactured induction heaters for more than 25 years, under the brand name "TM induction heating". Induction heaters for heating up bearings, bushings, gears, pulleys and couplings. Through constant innovation and our extensive experience we are able to offer a technical and reliable product.

The Pioneers in the use of induction applications

Advantages of TM Easy therm induction heaters:

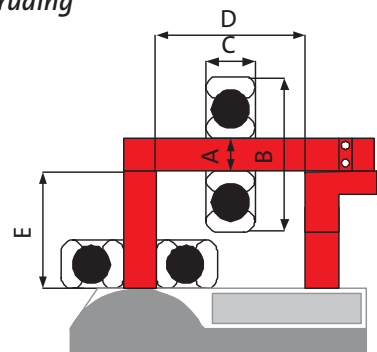
- Fast controllable heating process.
- Safe heating process; only the work piece is heated.
- Elimination of hot oil bath, no risk of localized overheating.
- Suitable for sealed and shielded bearings.
- Suitable for pre-greased bearings.
- Suitable for bearings with polyamide cages.

Technical advantages of TM Easy therm induction heaters:

- Manufactured according to the **CE** Regulations.
- Fast heating process through high output; **Cos phi > 0,8**.
- **"TURBO-BOOST"**: In the horizontal position the parts will heat up twice as fast.
- The heating coil is placed horizontal under the part;
 - By this it is impossible to damage the coil
 - This ensures an equal temperature all over the part (inner- and outer ring).
 - This makes it able to heat up parts with smaller bores.
- All heaters are **continuously useable** without any optional cooling system.
- Constantly monitoring heating process by probe and microprocessor.
- Temperature control accuracy +/- 2°C.
- Timer accuracy 0,01 sec.
- Maintenance free.
- **Three years** warranty.
- Easy to use; user friendly design.
- Ergonomic design (**pivoting yoke principle**).
- **Automatic power regulation**, no manual pre-setting necessary.
- Less than 2A/cm residual magnetism.

The pivoting yoke has the great advantage that only the work piece is handled, because the arm does not have to be lifted manually. This avoids unnecessary handling and reduces the risk of dirt intruding into the bearing or work piece.

Measurements heaters and parts:



Easy therm 2

The Easy therm 2 is a small powerful microprocessor controlled induction heater for heating of small sized components including bearings up to 40 kg!! It is easy to use and portable, complete with a robust case, ideal to use on location.



Display



Increase Temperature



Decrease Temperature



Technical information

Voltage	110-230V
Frequency	50 or 60Hz
Power	3.6kVA
Heater mass	17kg
Dimensions	345x200x240mm
Temp. mode	Max. 240/400°C
Width U-core	120mm
Height U-core	100mm

Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part	Max. outside diameter with extension yoke 40x50x75mm	Max. width with extension yoke 40x50x75mm
10x10x200	15mm	210mm	120mm	5kg	360mm	120mm
14x14x200*	20mm	215mm	120mm	15kg	365mm	120mm
25x25x200*	35mm	225mm	120mm	25kg	375mm	120mm
40x40x200*	60mm	280mm	120mm	40kg	375mm	120mm

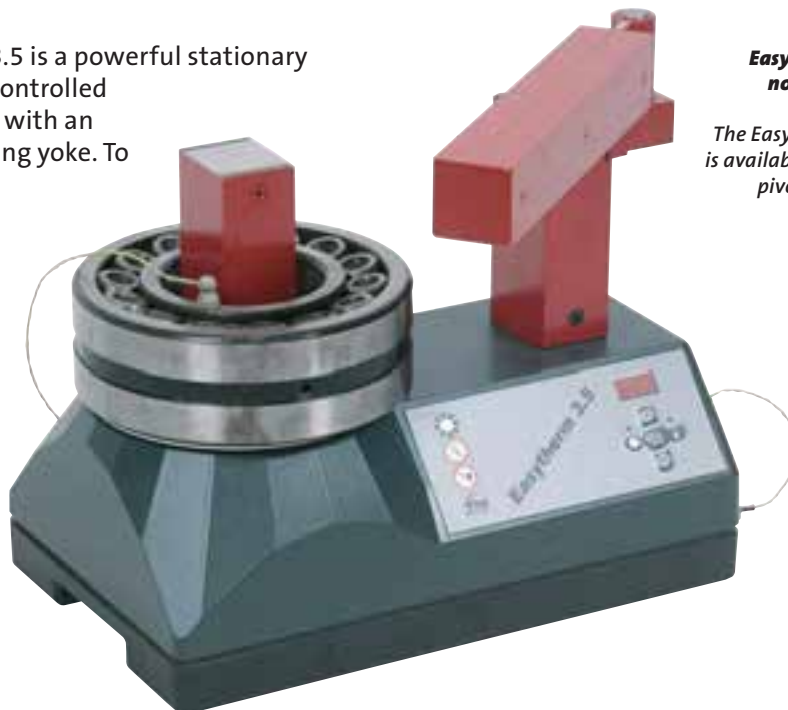
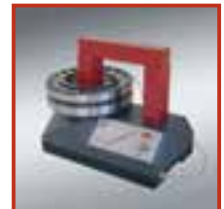
*Standard delivered within induction heater.

Easy therm 3.5

The Easy therm 3.5 is a powerful stationary microprocessor controlled induction heater with an ergonomic pivoting yoke. To be used for the professional mounting of a range of parts including bearings, typically used in maintenance shops and production areas.

Easy therm 3.5 non pivoting

The Easy therm 3.5 is available without pivoting yoke.



Technical information

Voltage	110-230V
Frequency	50 or 60Hz
Power	3.6kVA
Heater mass	31kg
Dimensions	420x260x360mm
Temp. mode	Max. 240/400°C
Width U-core	180mm
Height U-core	160mm

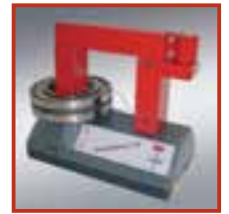
Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part	Max. outside diameter with extension yoke 50x50x120mm	Max. width with extension yoke 50x50x120mm
10x10x280	15mm	330mm	180mm	5kg	570mm	180mm
14x14x280	20mm	345mm	180mm	15kg	585mm	180mm
25x25x280	35mm	355mm	180mm	25kg	595mm	180mm
40x40x280	60mm	360mm	180mm	40kg	600mm	180mm
50x50x280	70mm	410mm	180mm	35/70kg	600mm	180mm

*Standard delivered within induction heater.

Easy therm 15

The Easy therm 15 is a powerful 400 Volt stationary microprocessor controlled induction heater with an ergonomic pivoting yoke, to be used for the professional mounting of a range of parts including bearings, typically used in maintenance shops and production areas.



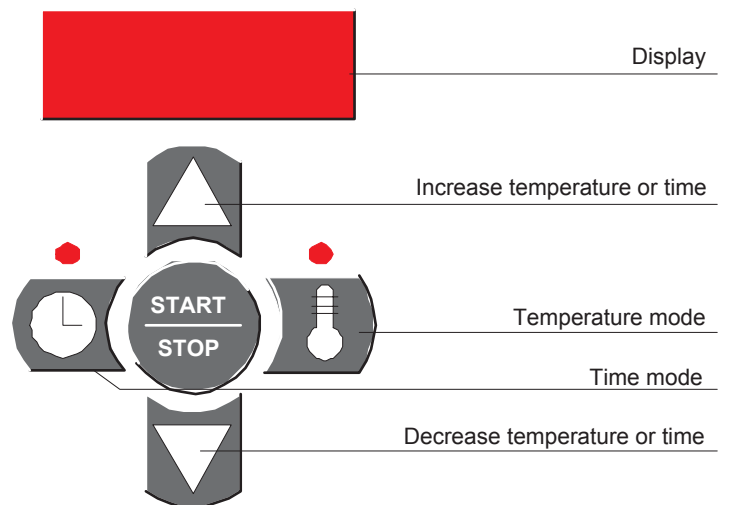
Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	12.8kVA
Heater mass	51kg
Dimensions	505x260x440mm
Temp. mode	Max. 240/400°C
Width U-core	210mm
Height U-core	215mm

Dimensions:

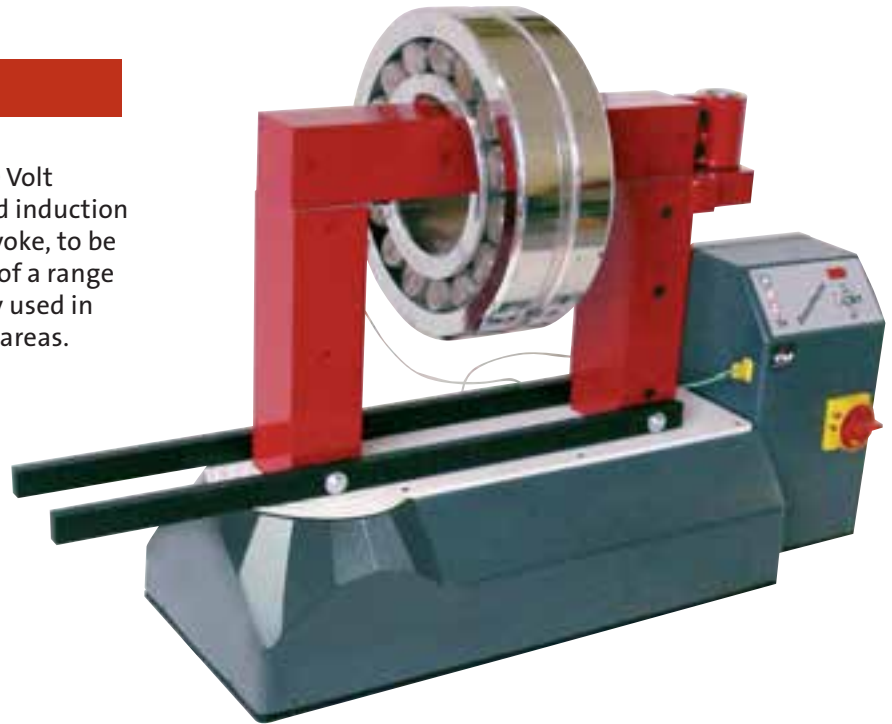
Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part	Max. outside diameter with extension yoke 70x70x150mm	Max. width with extension yoke 70x70x150mm
20x20x350	30mm	460mm	210mm	15kg	760mm	210mm
30x30x350	45mm	475mm	210mm	20kg	775mm	210mm
40x40x350	55mm	485mm	210mm	25kg	785mm	210mm
50x50x350	70mm	500mm	210mm	35kg	800mm	210mm
60x60x350	85mm	515mm	210mm	60kg	815mm	210mm
70x70x350	100mm	515mm	210mm	150kg	815mm	210mm

Easy to use; the process is entirely microprocessor controlled. The operator only needs to set the temperature or time, other features like power reduction will be automatically recognized.



Easy therm 30

The Easy therm 30 is a powerful 400 Volt stationary microprocessor controlled induction heater with an ergonomic pivoting yoke, to be used for the professional mounting of a range of parts including bearings, typically used in maintenance shops and production areas.



Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	12.8kVA
Heater mass	60kg
Dimensions	880x320x570mm
Temp. mode	Max. 240/400°C
Width U-core	330mm
Height U-core	295mm

Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part	Max. outside diameter with extension yoke 80x80x150mm	Max. width with extension yoke 80x80x150mm
20x20x490	30mm	620mm	330mm	15kg	910mm	330mm
30x30x490	45mm	630mm	330mm	20kg	920mm	330mm
40x40x490	55mm	640mm	330mm	25kg	930mm	330mm
50x50x490	70mm	650mm	330mm	35kg	940mm	330mm
60x60x490	85mm	660mm	330mm	60kg	950mm	330mm
70x70x490	100mm	670mm	330mm	80kg	960mm	330mm
80x80x490	115mm	740mm	330mm	300kg	960mm	330mm

Easy therm 30 with trolley

With the trolley the Easy therm 30 can easily be assembled into a movable model. The large castors make it easily movable and allow the unit to be used where needed.

Technical information

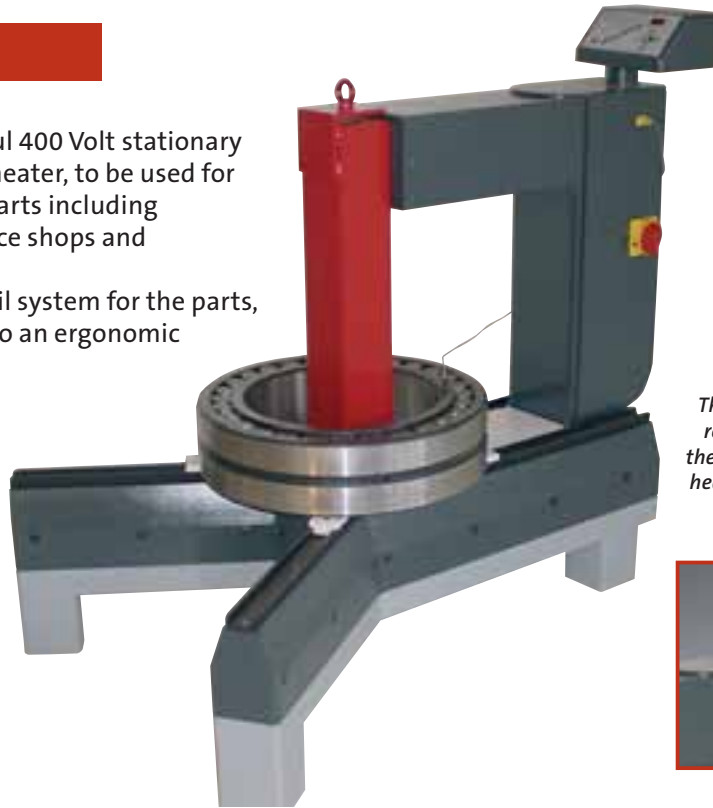
Voltage	380-480V
Frequency	50 or 60Hz
Power	12.8kVA
Heater mass	85kg
Dimensions	1060x500x1090mm
Temp. mode	Max. 240/400°C
Width U-core	330mm
Height U-core	295mm



Easy therm 60

The Easy therm 60 is a robust powerful 400 Volt stationary microprocessor controlled induction heater, to be used for the professional mounting of heavy parts including bearings, typically used in maintenance shops and production areas.

With easy to fit lift installation and rail system for the parts, the Easy therm 60 can be assembled to an ergonomic production machine. (see optional parts)



The operating panel rotates, this allows the user to follow the heating process from every angle



Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part
40x40x700	55mm	840mm	410mm	700kg
60x60x700	85mm	860mm	410mm	700kg
80x80x700	115mm	880mm	410mm	700kg
100x100x700	145mm	900mm	410mm	700kg

Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	25kVA
Heater mass	350kg
Dimensions	780x1200x1060mm
Temp. mode	Max. 240/400°C
Width U-core	440mm*
Height U-core	390mm*

Other measurements on request

Easy therm 100



The operating panel rotates, this allows the user to follow the heating process from every angle



The Easy therm 100 is a robust powerful 400 Volt stationary microprocessor controlled induction heater, to be used for the professional mounting of heavy parts including bearings, typically used in maintenance shops and production areas, for instance paper-mills and steel-mills. With easy to fit lift installation and rail system for the parts, the Easy therm 100 can be assembled to an ergonomic production machine. (see optional parts)



Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	40kVA
Heater mass	800kg
Dimensions	1200x1700x1250mm
Temp. mode	Max. 240/400°C
Width U-core	470mm*
Height U-core	690mm*

Other measurements on request

Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part
60x60x850	85mm	1500mm	470mm	1250kg
80x80x850	115mm	1500mm	470mm	1250kg
100x100x850	145mm	1500mm	470mm	1250kg
150x150x850	215mm	1500mm	470mm	1250kg

Easy therm 250

The Easy therm 250 is a very robust and powerful 400 Volt stationary microprocessor controlled induction heater, to be used for the professional mounting of a range of heavy parts including bearings up to 3000 kg, typically used in maintenance shops and production areas, for instance gearbox manufacturers.

The Easy therm 250 is a custom made product, Parts up to 10.000 kg can be heated up with a modification of the coil



When press mounting is not an option the Easy therm 250 offers the solution.

Dimensions:

Size induction yokes mm	Standard min. bore part (A)	Standard max. outer diameter part (B)	Standard max. width part (C)	Max. weight part
150x150x1250	215mm	2000mm	620mm	3000kg
200x200x1250	284mm	2000mm	620mm	3000kg

Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	100kVA
Heater mass	1800kg
Dimensions	1500x3000x2000mm
Temp. mode	Max. 240/400°C
Width U-core	750mm*
Height U-core	1000mm*

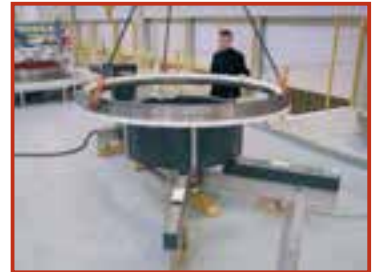
Other measurements on request

Easy therm 250 special

The Easy therm 250 Special is developed for the windmill industry. This heater is able to heat up parts with a weight of 10.000 kg with an outside diameter of 4000mm in 60 minutes up to 120°C.



The sliding yoke makes it ergonomic to use, there is no crane necessary to remove the heavy induction yoke



Technical information

Voltage	380-480V
Frequency	50 or 60Hz
Power	100kVA
Heater mass	1800kg
Dimensions	1000x3000x2000mm
Temp. mode	Max. 240/400°C
Width U-core	1200mm*
Height U-core	1000mm*

Other measurements on request

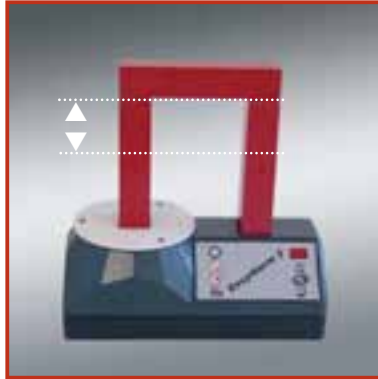
Optional parts and spare parts

Extension yokes

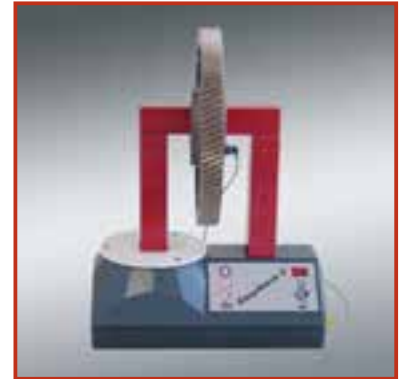
With extension yokes the user is able to heat up bigger parts on a standard Easy therm induction heater.

Dimensions:

Type heater	Measurements set of extension yokes	Max. outside diameter part
Easy therm 2	50x50x75	375mm
Easy therm 3.5	50x50x120	600mm
Easy therm 15	70x70x150	770mm
Easy therm 15	70x70x200	870mm
Easy therm 30	80x80x150	980mm
Easy therm 30	80x80x200	1080mm



Max O.D. with a set extension yokes



Lifting device for Easy therm 60 and 100

The easy to assemble lifting device makes it possible to lift the heavy induction yoke. With this device an external elevating crane is not needed.



Sliding table system for Easy therm 60 and 100

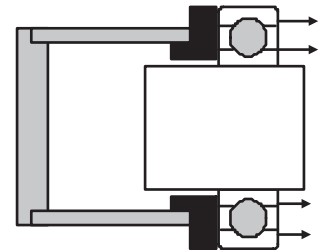
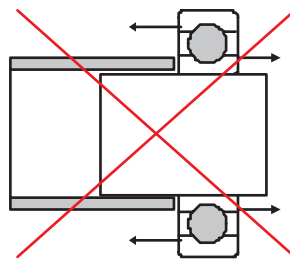
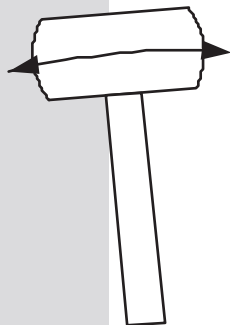
The easy to assemble sliding table makes it easier to handle the heavy part.

Fitting tool set



For a safe, precise and quick mechanical mounting of bearings, bushings, sealing rings and pulleys. This set is usable for fitting more than 230 sizes of bearings with a bore from 10 to 50mm. The set consist of three special aluminium impact sleeves, 33 synthetic impact-resistant collets and a dead blow hammer, delivered in a robust plastic case.

The relief on the tubes realizes a perfect grip.



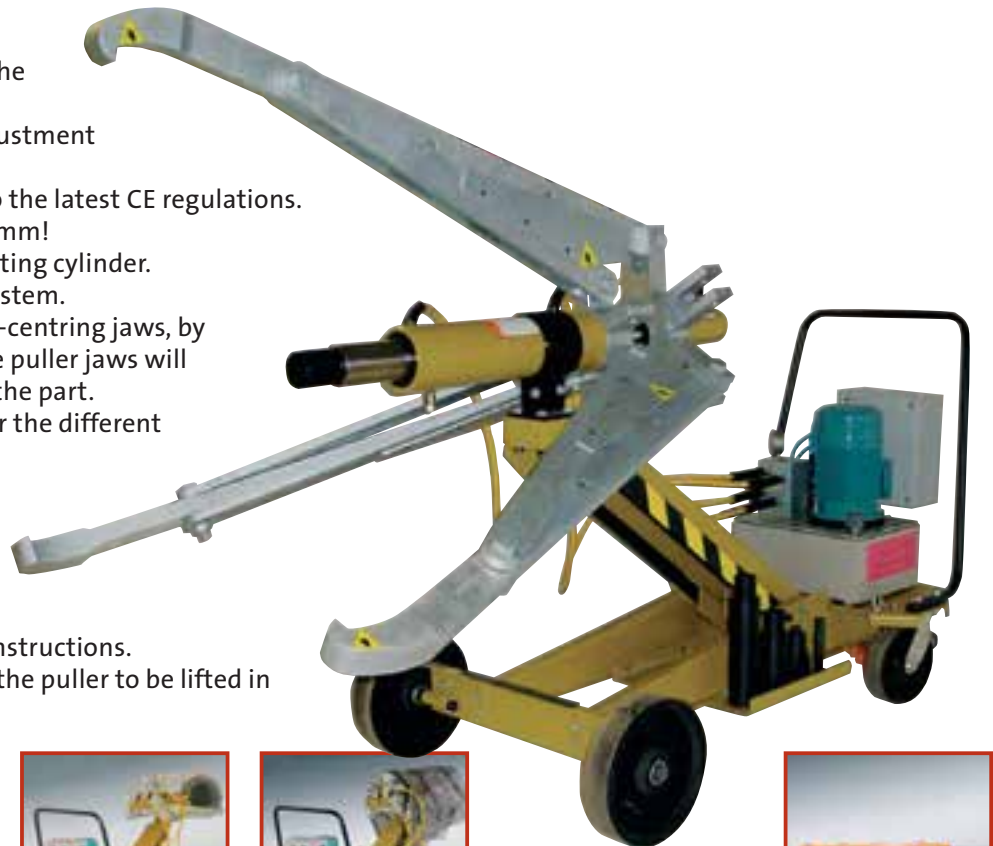
For bearings it is important that during mechanical mounting the bearing is supported on its inner- and outer ring to avoid unnecessary damage. In this way mounting forces are not transmitted via balls or rollers of the bearing. Through the use of impact resistant synthetic collets metal to metal contact is avoided.

Easy puller 50

Mobile, hydraulic 50 ton puller

to dismantle bearings, couplings and other large sized parts.

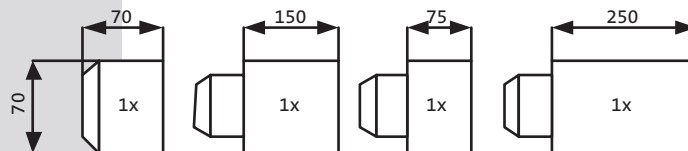
- Efficient; one man can do the job.
- Ergonomic: No manual adjustment necessary.
- Manufactured according to the latest CE regulations.
- Big reach: from 65 to 1150mm!
- 50 ton Hydraulic double-acting cylinder.
- Hydraulically vertical lift system.
- Hydraulically-actuated self-centring jaws, by one push on the button the puller jaws will automatically grip behind the part.
- Only one remote control for the different handlings.
- Puller can be assembled in 2- or 3 jaw configuration.
- Safety; the puller is delivered with a special safety blanket and safety instructions.
- The lifting brackets allows the puller to be lifted in a crane.
- Robust castors makes it easily movable.



The safety blanket assures a safe dismantling procedure

Remote control with 8 mtr cable for 6 different functions

- Vertical adjustment
- Adjustment of self-centring arm
- Operate 50 tons double acting cylinder



The Easy puller 50 is delivered with 4 different kind of Pushing adapters

Dimensions:

Maximum spread	reach at minimum Spread	Maximum spread	Reach at maximum spread	vertical height adjustment	Cylinder stroke	Weight puller	Measurements puller
64mm	651mm	1150mm	559mm	450 to 1120mm	337mm	481kg	3015x963x1276mm

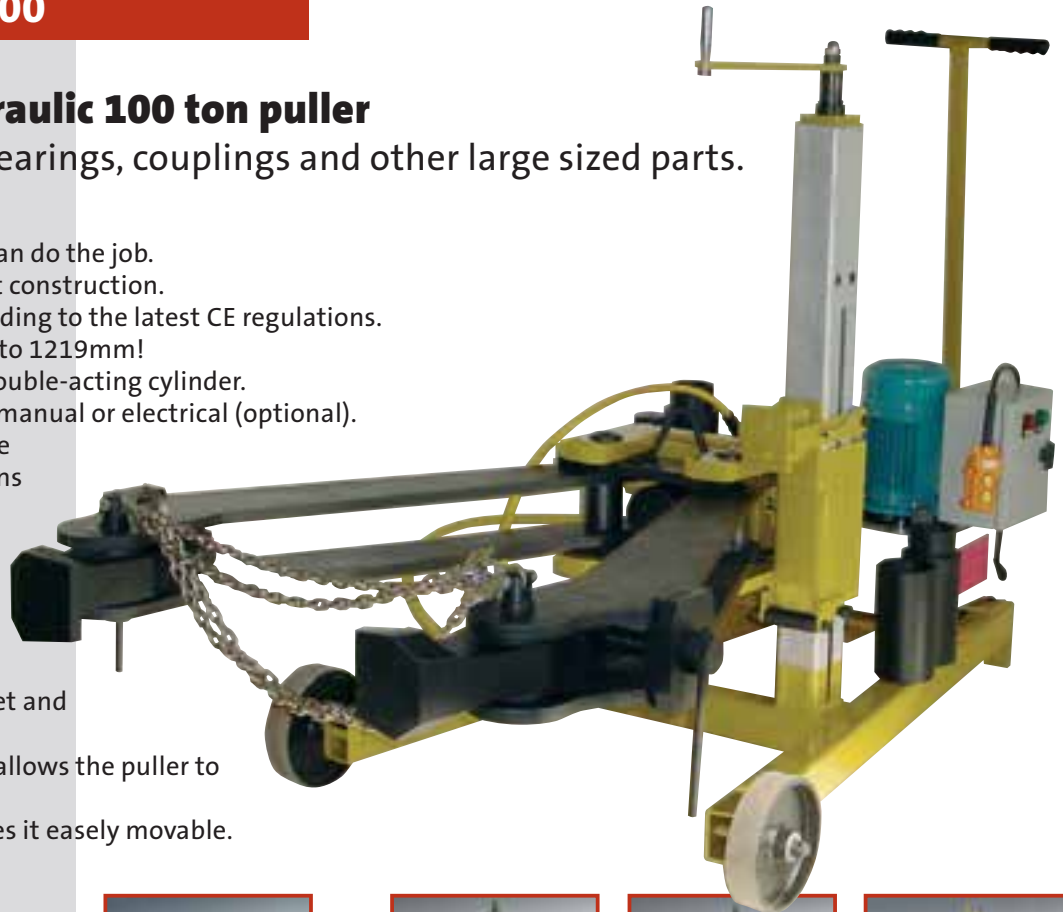
Power hydraulic pump 230V, other voltages on request

Easy puller 100

Mobile, hydraulic 100 ton puller

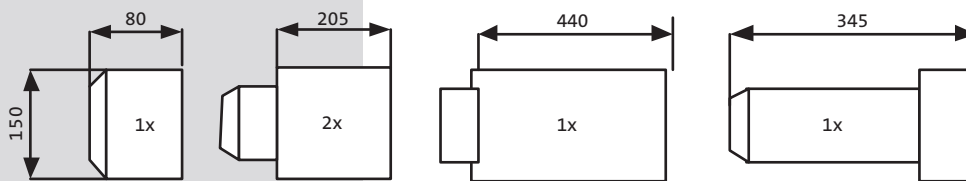
to dismantle bearings, couplings and other large sized parts.

- Efficient; one man can do the job.
- Robust and compact construction.
- Manufactured according to the latest CE regulations.
- Big reach: from 380 to 1219mm!
- 100 ton Hydraulic double-acting cylinder.
- Vertical adjustable, manual or electrical (optional).
- High quality jaws are adjustable this means they always pull on a flat surface.
- Remote control with 8 mtr cable.
- Safety; the puller is delivered with a special safety blanket and safety instructions.
- The lifting brackets allows the puller to be lifted in a crane.
- Robust castors makes it easily movable.



Remote control with 8 mtr cable

The safety blanket assures a safe dismantling procedure.



The Easy puller 100 is delivered with 5 different kind of Pushing adapters.

Dimensions:

Maximum spread	reach at minimum Spread	Maximum spread	Reach at maximum spread	vertical height adjustment	Cylinder stroke	Weight puller	Measurements puller
380mm	1066mm	1219mm	863mm	305 to 915mm	250mm	433kg	3015x963x1276mm

Power hydraulic pump 230V, other voltages on request

