

Electric Condenser Discharge Blasting Machine Type 944/3

with two independent firing circuits with hand-cranked generator and electro-magnetic ignition current control

Not approved for use in permitted areas!

BAM-approval ID: BAM-ZM-461



This Condenser Discharge Blasting Machine is manufactured and distributed by Messrs. VSV-Engineering Produktions- u. Handels GmbH at the same high technical level and safety standards as the other well known SCHAFFLER-blasting machines, testing instruments and other blasting accessories. All products are manufactured at the highest technical level and fulfil all safety standards.

Technical data:

Voltage: 3000 V
 Firing condenser: 2 x 80 μ F = 160 μ F
 Energy: total 720 Ws
 Weight: 30 kg

Dimensions:

Length: 300 mm
 Height: 350 mm
 Width: 310 mm

The twin-circuit condenser discharge blasting machine 944/3 is used for the ignition of very large numbers of shots, especially the high-sensitive HU-detonators, with a relatively low firing tension and without the need of balance the resistance of the two firing circuits. It can fire up to 300 HU-detonators. The mechanical concept is similar to the basic design of type 932/3000, apart from the number of terminals.

This machine has 3 terminals, one for each of the firing circuits and one for common return, to reduce leading line resistance and consequent consumption of firing energy. Each circuit can contain as many detonators as desired, up to the given limit. For blasting operations such as benching, harbour and channel deepening etc., this method is easy and economical.

About 40 turns of the generator crank charge the firing condenser switch from the position "CHARGE" to the position "FIRE". At the instant of firing the capacity (80 μ F) of each condenser is charged to 3000 V.

	Standard sensitive electric detonators A (not approved anymore, only igniters A) 5 Ω				Insensitive electric U-detonators 3,5 Ω				Highly insensitive electric HU-detonators 0,5 Ω	
	in series		2xn		in series		2xn		in series	2xn
Leading line	10 Ω				20 Ω				5 Ω	
Shot numbers	500		1000		350		700		150 300	
Limit resistance	2510 Ω				1250 Ω				80 Ω	
Connection	Parallel series				Parallel series					
Leading line	10 Ω				10 Ω					
	n_p	n_s	n	2xn	n_p	n_s	n	2xn		
	2	400	800	1600	2	270	540	1080		
	5	400	2000	4000	3	250	750	1500		
	10	350	3500	7000	4	250	1000	2000		
	15	280	4200	8400	5	240	1200	2400		
	20	220	4400	8800	10	200	2000	4000		

SAFETY FIRST

Handle the blasting machine with care and keep it clean.

Never activate the blasting machine with short-circuited terminals or plug sockets. Do not store the blasting machine for long periods in damp quarters underground and expose it as little as possible to wide fluctuations of temperature, in order to avoid condensation inside the machine.

Wear insulating clothing and shoes and take care that you do not knee on wet floor while activating the blasting machine.

Do not use damaged or defective machines and return them for repair to the manufacturer. Repairs which necessitate the opening of the machine should in no case be attempted, because special tools and "know-how" are required.

ANNUAL CHECKING IS RECOMMENDED.

SAFETY FIRST

OPERATING INSTRUCTIONS FOR TYPE 944/3

PLEASE NOTE: The resistance of the firing circuit must not exceed the maximum resistance indicated on the identification plate of the blasting machine.

After the firing circuit is set up as usual (connection of detonators, resistance measurement, insulation test):

1. Set the switch to position "CHARGING" with the aid of the crank-handle-key. Otherwise the charging circuit will remain open and generator will idle when it is being operated.
2. Connect the firing circuits.
3. Operate the generator with the crank until pilot lamp glows, and turn crank about 3 additional times. The blasting machine remains ready to fire only for 25 seconds. The pilot lamp glows after 40 turns within about 30 seconds. After the pilot lamp has extinguished, the switch is locked again. To make the blasting machine ready to fire again, follow instruction point 1 to 3.
4. Fire by setting the switch to position "IGNITING". When firing lines are not connected the condenser will be discharged over built-in resistors.

MECHANICAL TEST OF THE BLASTING MACHINE BEFORE USE

- The connecting terminals must be able to be turned easily; their threads must be in good order, so that the leading lines can be connected firmly.
- The connections must be clean and dry.
- The drive of the winding and firing mechanism must be operated easily.
- Machines with direct manual drive need a properly working free-wheel device.
- The housing must be free of major damages; this is of great importance with firedamp proof blasting machines.
- When shaking the blasting machine no noise from inside may occur.

BLASTING MACHINE TESTER TYPE SOLUS

The electrical efficiency of the blasting machines have to be tested by the appropriate type of SOLUS tester. According to the EC-regulations the blasting machines have to be tested at least once a month. If the blasting machine has not been used during the last month, it has to be tested before being operated.



SAFETY INSTRUCTIONS

If the blasting machine is not used according to the regulations and safety instructions or when the terminals (or the connecting wires) are touched this may result in severe injuries. The energy of a discharging blasting machine can be compared with a small flash. The electric shock can cause high grade burns (blisters to the skin) and may occur danger of life (e.g. cardiac arrest).