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Machine Assisted Demining

Mine Action Information Center Journal

The Swedish Mine Fighter: The Ultimate Mine-Clearance for Anti-Personnel Mines

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Every 22nd minute a mine detonates . . .

New Swede Construction AB, NSC, AB, has since 1996, developed a mechanical mine clearance machine which can operate in areas where already existing machines cannot operate. The Swedish Mine Fighter is also an environmentally friendly machine since it does not destroy the ground where it operates. In initial tests using live mines placed in the ground, all mines were either destroyed or detonated.



Name: Swedish Mine Fighter (SMF)

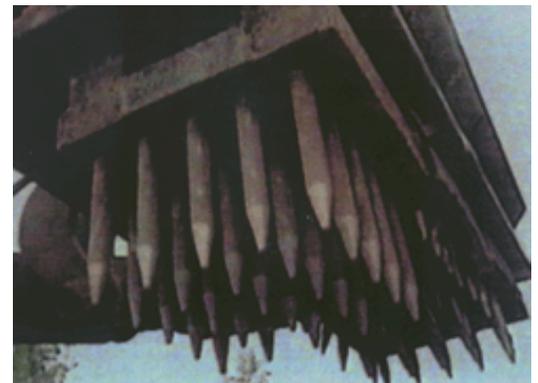
Country of origin: Sweden

Manufacturer:

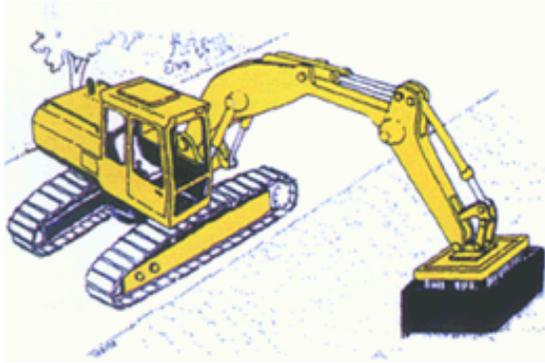
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- Sweden

Description:

The SMF is a mine clearance equipment consisting of modules of spikes. These spikes are made of specially hardened steel and are closely fitted to each other. This means that no mine can escape the spikes, not even if the mine is on end. The SMF mine clearance equipment consists of a system of modules which can be fitted together or work as separate units. The modules can be fitted to most working machines and they can be produced in small or large sizes. The small size version is 1 x 0,3m and the full size version is 3x1m. The weight varies from 400kg – 4000kg, depending on the size of the module.



Demining Equipment NSD 2001



The picture to the left shows the demining equipment fitted to an excavator which has centre steering system. The excavator makes it possible to pass through areas with fluctuating passability.

The flexibility, shown in the left version of the demining equipment, is enormously great since the excavator can rotate around its own axle. While standing in position, the range and rotation of the excavator makes it

possible to clear areas comprising 75 square meters.

The demining equipment can be fitted to most working machines. E.g. the picture to the right shows the demining equipment fitted to a bulldozer.

The demining equipment can be produced in small or large sizes. The picture to the left shows a small demining equipment fitted to a mine clearance robot. The robot can then easily be remote-controlled into areas which are extremely dangerous or narrow.

The Three-step mine clearance equipment

The adjoining picture shows a prototype of the SMF – the Swedish Mine Fighter

The Swedish Mine Fighter works in three steps which makes it possible to disperse and lead off explosive forces which occur when a mine detonates.

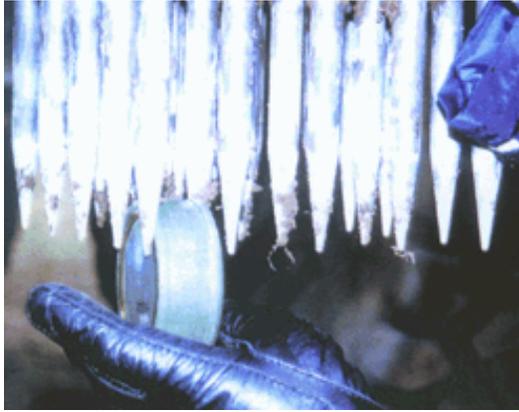
Because of its three-step function, the SMF does not cause any damage to the ground when clearing areas from mines. It rather improves the fertility of the soil when leaving small holes in the ground after the area has been cleared.



The spikes make it possible

The spikes fitted to the Swedish Mine Fighter are closely fitted to each other which makes it possible to destroy or detonate even the smallest mine and it does not matter if the mine is on

- end the mine can still be destroyed or detonated.



Successful test with the SMF

During a test performed and inspected at the Swedish Army Mine Clearance Centre, antipersonnel mines of type DM11 were used. The DM11 mine is a small plastic mine which is very hard to discover. The mines used at the test were placed at various depths (0-30 cm) and they had no possibility to escape the spikes which penetrated the ground and either destroyed the mines or caused them to detonate.

Small mines – terrible power

Small plastic mines have a tremendous explosive force. Despite damage to the ground when a mine detonates, there is no damage to the Swedish Mine Fighter since the construction of the Swedish Mine Fighter is made to disperse the explosive forces of a detonation.



Characteristics:

The SMF works in three steps in order to disperse and lead off explosive forces caused by a detonation. It does not destroy the ground where it operates. It rather improves the fertility of the soil when leaving small holes in the ground when the area has been cleared. The SMF is easy to handle and it operates on broken ground as well as on flat ground. The SMF is also easy to assemble, no special tools are required.

Demining width: Depends on the carrier

Demining depth: 0-30 cm

Road speed: Depends on the carrier.

Demining performance: Light soil Medium soil Heavy soil

Demining speed: 180 M²/h 120 m²/h go M² /h

Costs of acquisition: 600 000 SEK- 2 000 000 SEK, depending on the size.

Operational costs: Depends on the carrier.

Service intervals: The full size version is constructed to clear 500 anti-personnel mines before

full service is required.

Limitations: Constructed for anti-personnel mines only.

Protection of the crew: Splinter-protecting cover.

Completed field tests

Location: Eksjo, Sweden **Period:** June 17-18,1997

Report available: Swedish Army Mine Clearance Centre Eksjo, Sweden

Lessons learned: The test was performed on grass, sand and gravel - all mines were either detonated or destroyed.

Company information

Owners: Jan Bengtsson Leif Nyfelt

CEO & innovator: Leif Nyfelt

Product planning: Mattias Willersjo

Test & development: Benny Andersson

Adm. & coordination: Petra Willersjo-Nyfelt

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Organisation number: 556447-1885

Seat/Founded: Skovde/1992

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Number of employees: 4

Premises: Specially designed premises in the centre of Skovde.

Area of premises: 600 M2

Production: Mostly in England, but also a small-scale production of our own.

Administration and bookkeeping maintained by Revisorscentrum in Skovde.



Board and accountant

Jan Bengtsson, President

Bengt Gamner, Member

Leif Nyfelt Member, CEO

Ingemar Wenemyr, Chartered accountant

Business activity

To supply defence forces with mostly electronic training material, such as training- and identification equipment, within the subject of mines. Marketing and development of equipment for humanitarian clearance of anti-personnel mines.