

**REPUBLIC OF CROATIA
CROATIAN MINE ACTION CENTRE -
CENTER FOR TESTING, DEVELOPMENT AND TRAINING**

**"MINI MINE WOLF " DEMINING MACHINE
TESTING REPORT**



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1. TECHNICAL DATA FOR THE “MINI MINE WOLF” MACHINE

1.1 Demining machine description

“MINI MINE WOLF” demining machine is used by “TORNADO d.o.o.” demining company from Lepoglava. The machine was designed and manufactured by “Mine Wolf Systems” GmbH, Koblenz, Germany. It was manufactured in 2006, and so far it has worked in Bosnia and Herzegovina, where it achieved good results in mechanical treatment of MSA and AP mines destruction. The machine is categorized as a medium size demining machine, weighing 7.9 metric tons. It is operated via remote control. The working tool is a tiller. The machine is on caterpillars. It has a DEUTZ BF6 M engine with a power of 176 kW (240 HP). Working tool operates hydrostatically.

“TORNADO d.o.o.” demining company from Lepoglava has delivered documentation of machine’s work performed so far in Bosnia and Herzegovina. This documentation is in Croatian.

Based on request for testing and mentioned documentation, The CROMAC Committee for testing of demining machines had decided on 16th of October 2006 to test the machine.

The Testing Plan and Programme was elaborated on the basis of “*Programme of Testing and Usability Evaluation of Machines used in Humanitarian Demining Operations*”.



Figure 1 – Transport of “MINI MINE WOLF”

Technical data

- Machine dimensions
 - Length 2.650 mm
 - Length with tiller 4.687 mm
 - Width 1.600 mm
 - Width with tiller 2.292 mm
 - Height 1.918 mm
 - Weight (with tiller) 7.900 kg
 - Tiller weight 2.000 kg

- Engine type DEUTZ BF06M
- Engine power 176 kW (240 HP)
- Engine volume 7,146 cm³
- Engine fuel type D-2
- Fuel tank capacity 210 liters
- Chassis number 811.02.09.06
- Tiller number 720.02.09.06
- Working tool tiller
- Working tool width 1.850 mm
- Flail diameter 1.400 mm
- Number of striking heads 48
- RPM 500-700
- Armored protection of the machine ARMOX-500T
- Protective glass type HARDOX 400, 10 mm
- Movement caterpillars
- Tiller drive hydrostatic, 2 hydraulic pumps
- Speed
 - Transport 0 – 5 km/h
 - Operation 0 – 2 km/h



Figure 2 – “MINI MINE WOLF” demining machine

- Soil treatment depth 20-30 cm
- Tiller movement back and forth
- Machine operation remote control device

- ❑ Longitudinal slope surmounting 30⁰
- ❑ Transversal slope surmounting 30⁰
- ❑ Self recovery winch yes



Figure 3 – Working tool - tiller

Servicing equipment for maintenance and minor repairs of the machine, as well as spare disposable parts, are placed in the servicing vehicle situated on the demining site. A trailer is used for transportation at smaller distances and longer distances.



Figure 4 – Fire extinguisher and self recovery winch

2. Testing plan

2.1. Acceptance testing plan

- The acceptance testing will not be conducted since the machine was used in 2006 in Bosnia and Herzegovina, where it operated for 177 hours in MSA. The Documentation was delivered to HCR-CTRO.

2.2. Performance and Survivability Testing Plan

2.2.1. Goal and tasks of testing

The testing goal is to acquire knowledge and results about operational capabilities of the machine, its endurance and quality in test site conditions.

The following **tasks** should be accomplished during the tests:

- to determine **general technical characteristics of the machine and of the working tool**
- to determine **the soil processing depth for different types of soil and the speed of motion of the machine**
- to determine **machine endurance in the moment of antipersonnel (AP) mine activation**
- to determine the **efficiency and effectiveness of the remote control device**
- to determine **possibilities of using the machine in mine-suspected areas**
- to determine **possibilities of the machine use in different types of soil, terrain slopes (horizontal and vertical slope) as well as for vegetation clearing**
- to determine the **level and scope of deminer's inspection** after mechanical treatment
- to determine **required machine logistics, servicing and regular maintenance**

2.2.2. Testing criteria

Evaluation criteria are defined in accordance with the proposed *Programme of Testing and Usability Evaluation of Machines used in Humanitarian Demining Operations*, as well as with *Standard Operating Procedures for Humanitarian Demining in the Republic of Croatia* contained in the *Regulation on Performing Demining Operations*.

2.2.3. Testing location and time period

The testing will be conducted at the **Cerovac test site for demining machines near Karlovac**.

Period of testing – October 2006, divided into stages in respect to the set criteria:

1. **stage: 1 day – preparation of the Cerovac test site for the testing**
2. **stage: 1 day – testing on test lanes containing different kinds of soil**
3. **stage: 1 day – testing on antipersonnel mines**

TOTAL: 3 days

After preparing the test site and the machine, the testing of the machine and the working tool is performed on test lanes with different soil types, while measuring the depth of the soil processing and the speed of motion. Then, the testing of vegetation removing and testing with AP mines is conducted.



Figure 5 – “MINI MINE WOLF“

2.2.4. Testing structure

a) First stage – PREPARATION OF THE TEST SITE AND THE MACHINE

- **Preparing the test site for machine testing**
 - Preparing the test lanes
 - Placing a fiberboard panel at a depth corresponding to the predicted soil processing depth of the machine
 - Preparing the site for the machine testing with AP
 - **Preparation of the machine**
 - Transportation of the machine to the Cerovac test site
 - Inspection and preparation of the machine
- ❖ **duration: 1 day**

b) Second stage – TESTING ON TEST LANES CONTAINING VARIOUS SOIL TYPES

a. Testing on the topsoil lane

- b. **Testing on the sand lane**
- c. **Testing on the gravel lane**
 - i. **Measuring the soil processing depth**
 - ii. **Measuring the motion speed while in operation**
- d. **Duration: 1 working day**

c) Third stage – TESTING ON AP MINES

- **Five PMA-1A** mines are placed in front of the working tool in a linear layout with 4 m spacing, at depths of 5, 10, 10, 15 and 20 cm, and they are armed with appropriate fuses. The placed mines should be destroyed by the machine and the results should be analyzed.
 - **Five PMA-2** mines are placed in front of the working tool in a linear layout with 4 m spacing, at depths of 5, 10, 10, 15 and 20 cm, and they are armed with the appropriate fuses. The placed mines should be destroyed by the machine and the results should be analyzed.
 - **Five PMA-3** mines are placed in front of the working tool in a linear layout with 4 m spacing, at depths of 5, 10, 10, 15 and 20 cm, and they are armed with the appropriate fuses. The placed mines should be destroyed by the machine and the results should be analyzed.
 - **Two PMR-2A mines are placed, of which:** **one PMR-2A** mine is placed in front of the working tool and equipped with the corresponding fuse while the tripwire is tightened towards the machine.
 - **another PMR-2A** mine is placed in the same way as the first one, but only after the first mine has been destroyed
 - the placed mines should be destroyed by the machine, and the results should be analyzed
 - **Two PROM-1 mines are placed, of which:**
 - **One PROM-1** mine is placed in front of the working tool at the distance of around 5 m, equipped with the corresponding fuse and **prepared for activation by pressure**
 - **One PROM-1** mine is placed in front of the working tool at the distance of around 15 m, equipped with the corresponding fuse and **prepared for activation by tripwire**, where the tripwire is tightened from the mine to the machine.
 - The placed mines should be destroyed by the machine, and the results should be analyzed.
- ❖ **Duration: 1 working day**



Figure 6 – remote control

2.2.5. Testing participants list

The following persons will participate in the preparation, organization and implementation of the testing:

- a) **First stage – preparation of the test site and the machine**
 - testing leader, machine operator, mechanics, workers
- b) **Second stage – testing on test lanes**
 - Testing leader
 - Machine operator
 - CROMAC Machine Testing Committee
 - “TORNADO“ company representative
 - 4 WORKERS
- c) **Third stage – testing with AP mines**
 - Testing leader
 - Machine operator
 - “TORNADO“ company representative
 - 3 deminers, “TORNADO“ company
 - Demining site security personnel, TORNADO “” company
 - “TORNADO “ company representative
 - CROMAC Machine Testing Committee
 - Medical team, “TORNADO “ company
 - Security personnel, “TORNADO” company

2.2.6. List of equipment and supplies

- 7.1. “Mini Mine Wolf“ demining machine 1 item
- 7.2. Servicing set for the machine and for the working tool 1 set

7.3. Set of spare parts for the machine and for the working tool	1 set
7.4. Ambulance with appropriate equipment	1 item
7.5. Personal protective equipment for deminers, machine operators and assistants.....	1 set
7.6. Metal detectors	3 items
7.7. Set of demining tools	3 sets
7.8. Set of tools for destroying mines and UXOs	1 set
7.9. Set of tools and material for temporary marking	1 set
7.10. Short range communication devices (Motorola).....	10 items
7.11. Explosive (TNT or plastic).....	1 kg
7.12. Electric detonator cap.....	5 items
7.13. Miner's cable	1, .200 m
7.14. Isolation tape	1 item
7.15. Slow-burning fuse	10 m
7.16. Detonator cap no.8	5 items
7.17. 4 WD vehicle.....	1 item
7.18. Protective equipment for the test leader	1 set
7.19. Digital photo camera	1 item
7.20. Stop-watch.....	1 item
7.21. Binoculars.....	1 item
7.22. Lap-top	1 item
7.23. Mobile phone.....	(098) 1 item
7.24. Meter	1 item
7.25. Measuring tape (50 m)	1 item
7.26. PMA-1A	5 items
7.27. PMA-2	5 items
7.28. PMA-3	5 items
7.29. PMR-2A	2 items
7.30. PROM - 1	2 items

NOTE:

- ❖ **“TORNADO“company provides items listed under 7.1. to 7.16.**
- ❖ **HCR-CTRO provides items listed under 7.17. to 7.330.**
- ❖ **HCR-CTRO will provide and transport the mines to the test site**

2.2.7. Safety and protective measures

a) Safety measures for deminers

- Obligatory protective equipment at the work site (protective helmet with visor, bullet-proof vest)
- During work the minimum distance between deminers is 25 m and from a deminer to the machine 300 m
- Metal detectors should be inspected and checked before use; only those detectors which work properly can be used in the testing
- It is only allowed to use correct and complete devices and equipment
- During AP and AT mine laying and arming operations, it is obligatory to comply with the safety measures relevant to the types of mines used
- While destroying the remaining mines and explosive devices, it is obligatory to comply with the relevant safety procedures and measures

b) Safety measures during the machine operation

- Before using the machine, the operator is obliged to inspect the machine, to correct the observed deficiencies and to inform the test leader
- When the machine hits a mine or an explosive device, the engine should be switched off and the test leader should be informed using a radio device. **No action should be undertaken on the machine without the permission of the test leader.**
- The machine operator is always located in the supporting vehicle or inside the cabin, and he operates the machine from there. If there is no supporting vehicle, the operator may be out in the open with the protective equipment, no less than 300 m away from the machine. The supporting vehicle is located outside the demining site, outside the mine suspected area, on the land which has been inspected by deminers and proclaimed to be safe. The machine can be operated from the cabin as well.
- During a break, the machine should be returned to a safe terrain and should be inspected while in operation; the observed deficiencies should be corrected, and the test leader should be informed.
- After completion of daily work, the machine should be moved to a safe terrain, it should be inspected, fuel and oil should be filled in, the observed deficiencies should be corrected and the test leader should be informed
- **Any activity with the demining machine without the permission of the test leader is forbidden**
- During the machine work the minimum distance between testing participants and the machine is 300 m
- During work, the SOP for the „MINI MINE WOLF“ machine should be obeyed

c) Safety measures at the test site

- The test site should be marked in accordance with the Croatian Humanitarian Demining SOP.
- All the activities and procedures in the preparation of and during the “MINI MINE WOLF“ machine testing must be conducted in accordance with the *Law on Demining* (National Gazette 19/96 and 86/98), with *Rules and Regulations on Conducting Demining Activities* and with *Standard Operating Procedures in Humanitarian Demining in the Republic of Croatia*.
- all the testing participants shall obey the procedure and the testing leader's instructions
- the machine may work for one 5-hour shift a day
- deminers work for 5 working hours a day with a 30 minutes break
- the medical team must be ready to provide medical assistance at any time
- the communication system must function flawlessly during the testing
- the work site leader must organize all the work site elements in accordance with the rules

3. TESTING PROCESS

3.1. Testing with AP mines

3.1.1 Testing with AP mines

On 26 October 2006, from 09.00 to 14.00 hours, testing was conducted with antipersonnel mines at the test site for demining machines. The following results were achieved:

- a) **PMA-1A** – 5 mines were placed at the planned depth (5, 10, 10, 15 and 20 cm) at 4 m distance and armed with appropriate fuses. The machine activated **all mines. Neither the working tool nor the machine was damaged**
- b) **PMA-2** – 5 mines were placed at the planned depth (5, 10, 10, 15 and 20 cm) at 4 m distance and armed with appropriate fuses. The machine activated **all mines. Neither the working tool nor the machine was damaged.**



Figure 7 – AP mines PMA-1A and PMA-2 prepared for testing of “MINI MINE WOLF“

- c) **PMA-3** –5 mines were placed at the planned depth (5, 10, 10, 15 and 20 cm) at 4 m distance and armed with appropriate fuses. The machine activated **all mines**. **Neither the working tool nor the machine was damaged**



Figure 8 – AP mines PMA-3 and PMR-2A prepared for testing of “MINI MINE WOLF“

d) PMR-2A:

- **First mine** – was placed in front of the machine at around 8 m distance and armed with appropriate fuse. The tiller **activated the mine**. **There were shrapnel marks on the machines and work tool, but these do not effect operation of the machine.**
- **Second mine** – was placed in the same manner. The tiller **activated the mine**. **Neither the working tool nor the machine was damaged**



Figure 9 – Shrapnel marks of PMR-2A on “MINI MINE WOLF“

e) PROM-1:

- **First mine** was placed and prepared for tripwire activation. **The mine was activated** by the machine. **There were shrapnel marks on the machines and work tool, but these do not effect operation of the machine.**
- **Second mine** was placed and prepared for pressure activation. **The mine was activated** by the machine. **Neither the working tool nor the machine was damaged**



Figure 10 – PROM-1 prepared for testing of “MINI MINE WOLF“

3.2. Testing at test lanes

On 25.11.2004 the testing was conducted at the Cerovac test site for demining machines. The testing was conducted on three different soil types. Soil treatment depth was measured as well as the machine movement speed. The following persons were present: Ivan Šteker, M.A., dr.Nikola Gambiroža, and on behalf of “TORNADO”; Dražen Novak, Dražen Jakopec and Zdravko Mikulčić (operator).

TESTING OF EFFICIENCY OF DEMINING MACHINES – THE DEMINING DEPTH

TEST No.: 055/06 **PLACE:** test-site CEROVAC

COMPANY: «TORNADO» d.o.o.-Lepoglava

MACHINE: MINI MINE WOLF

MACHINE CATEGORY: medium machine

WORK TOOL: *tiller* **WIDTH:** 1,85 m

REG. CHASSIS No.: 811-02-09-06

USABILITY No.: 105-01-16/06-01

TEST-SITE CONDITIONS:

Weather conditions: sunny

Temperature: 20⁰ C

COMMITTEE MEMBERS:

1. *dr. Nikola Gambiroža*

2. *Ivan Šteker; M.A.*

COMPANY REPRESENTATIVES: *Dražen Novak, Dražen Jakopec, Predrag Kušić,*

Zdravko Mikulčić (operator)

LANE 1 – TOP SOIL

DURATION OF MACHINE OPERATION: 9 min 50 sec

The rest of fiberboard (cm)

FIBERBOARD No.1

Depth of fiberboard burial: 5, 00 cm

Fiberboard width: 25, 00 cm

Average depth: 22, 10 cm

1.	11,00	11.	6,00
2.	7,00	12.	6,50
3.	7,00	13.	7,00
4.	7,50	14.	7,00
5.	7,50	15.	8,50
6.	7,00	16.	9,00
7.	7,00	17.	8,00
8.	7,00	18.	10,00
9.	7,00	19.	10,00
10.	8,00	20.	10,00

FIBERBOARD No.2

Depth of fiberboard burial: 4, 50 cm

Fiberboard width: 25, 00 cm

Average depth: 23, 79 cm

1.	10,00	11.	4,00
2.	5,50	12.	5,50
3.	6,50	13.	5,00
4.	6,50	14.	6,00
5.	6,50	15.	5,00
6.	5,50	16.	6,50
7.	5,50	17.	7,00
8.	5,00	18.	7,00
9.	3,50	19.	8,00
10.	3,50	20.	8,00

FIBERBOARD No.3

Depth of fiberboard burial: 4, 50 cm

Fiberboard width: 25, 00 cm

Average depth: 20, 14 cm

1.	12,00	11.	9,50
2.	8,00	12.	9,50
3.	8,00	13.	9,50
4.	8,50	14.	9,50
5.	8,50	15.	10,00
6.	8,50	16.	10,00
7.	9,00	17.	9,50
8.	10,00	18.	9,00
9.	10,00	19.	9,00
10.	9,50	20.	9,00

AVERAGE DEPTH IN LANE: b 22, 01 cm

SPEED OF MACHINE'S MOVEMENT: 0,305 km/h

MACHINE CAPACITY: 564, 41 m²/h



Figure 11 – machine on topsoil lane



Figure 12 – damage on board 1, topsoil lane



Figure13 - damage on board 2, topsoil lane

Figure 14 - damage on board 3, topsoil lane



Figure 15 – machine on sand lane



Figure 16 – damage on board 1, sand lane

LANE 2 – SAND

DURATION OF MACHINE OPEARTION: 7 min 30 sec

The rest of fiberboard (cm)

FIBERBOARD No.1

Depth of fiberboard burial: 5, 00 cm

Fiberboard width: 25, 00 cm

Average depth: 26, 18 cm

1.	10,00	11.	0,00
2.	6,00	12.	0,00
3.	6,50	13.	0,00
4.	6,00	14.	0,00
5.	6,00	15.	0,00
6.	6,00	16.	0,00
7.	7,00	17.	0,00
8.	6,00	18.	0,00
9.	6,50	19.	0,00
10.	7,00	20.	9,00

FIBERBOARD No.2

Depth of fiberboard burial: 6, 00 cm

Fiberboard width: 25, 00 cm

Average depth: 21, 90 cm

1.	11,00	11.	10,00
2.	7,00	12.	9,00
3.	8,50	13.	9,00
4.	8,50	14.	9,00
5.	8,50	15.	9,50
6.	9,00	16.	8,50
7.	9,50	17.	8,50
8.	10,00	18.	9,00
9.	9,50	19.	8,50
10.	10,00	20.	9,50

FIBERBOARD No.3

Depth of fiberboard burial: 8, 00 cm

Fiberboard width: 25, 00 cm

Average depth: 23, 83 cm

1.	12,00	11.	9,00
2.	8,00	12.	9,00
3.	8,00	13.	9,50
4.	8,50	14.	9,50
5.	8,50	15.	9,50
6.	9,00	16.	10,00
7.	9,00	17.	9,50
8.	8,50	18.	9,00
9.	9,00	19.	10,00
10.	9,00	20.	9,00

AVERAGE DEPTH IN LANE: 23, 97 cm

SPEED OF MACHINE'S MOVEMENT: 0,400 km/h

MACHINE CAPACITY:

740, 00 m²/h



Figure 17 - damage on board 2, sand lane

Figure 18 - damage on board 3, sand lane

LANE 2 – GRAVEL

DURATION OF MACHINE OPEARTION: 5 min 37 sec

The rest of fiberboard (cm)

FIBERBOARD No.1

Depth of fiberboard burial: 4, 00 cm

Fiberboard width: 25, 00 cm

Average depth: 29, 00 cm

1.	0,00	11.	0,00
2.	0,00	12.	0,00
3.	0,00	13.	0,00
4.	0,00	14.	0,00
5.	0,00	15.	0,00
6.	0,00	16.	0,00
7.	0,00	17.	0,00
8.	0,00	18.	0,00
9.	0,00	19.	0,00
10.	0,00	20.	0,00

FIBERBOARD No.2

Depth of fiberboard burial: 8, 50 cm

Fiberboard width: 25, 00 cm

Average depth: 33, 50 cm

1.	0,00	11.	0,00
2.	0,00	12.	0,00
3.	0,00	13.	0,00
4.	0,00	14.	0,00
5.	0,00	15.	0,00
6.	0,00	16.	0,00
7.	0,00	17.	0,00
8.	0,00	18.	0,00
9.	0,00	19.	0,00
10.	0,00	20.	0,00

FIBERBOARD No.3

Depth of fiberboard burial: 4, 50 cm

Fiberboard width: 25, 00 cm

Average depth: 29, 50 cm

1.	0,00	11.	0,00
2.	0,00	12.	0,00
3.	0,00	13.	0,00
4.	0,00	14.	0,00
5.	0,00	15.	0,00
6.	0,00	16.	0,00
7.	0,00	17.	0,00
8.	0,00	18.	0,00
9.	0,00	19.	0,00
10.	0,00	20.	0,00

AVERAGE DEPTH IN LANE: 30, 67 cm

SPEED OF MACHINE'S MOVEMENT: 0,534 km/h

MACHINE CAPACITY: 988, 13 m²/h

Figure 19 – machine on gravel lane

1. Testing results at test lanes:

SOIL TYPES	average depth (cm)	time (minutes, seconds)	speed (km/h)	efficiency (m²/5h)
TOP-SOIL	22,01	9 min 50 sec	0,305	564,41
SAND	23,97	7 min 30 sec	0,400	740,00
GRAVEL	30,67	5 min 37 sec	0,534	988,13

Table 1 – Testing results for “MINI MINE WOLF”



Figure 20 “MINI MINE WOLF“ in vegetation



Figure 21 – vegetation before

Figure 22 – vegetation after

Testing of vegetation cutting was conducted at the test-site Cerovac. It was concluded that “MINI MINE WOLF” successfully destroys low, medium and high vegetation and individual trees of 15 cm diameter in average.

c) List of participants

1. **Ivan Šteker**, HCR-CTRO
2. **Nikola Gambiroža**, HCR

3. **Dražen Šimunović**, HCR
4. **Danijela Džimbeg**, MUP RH
5. **Dražen Novak**, “TORNADO”
6. **Dražen Jakopec**, “TORNADO”
7. **Predrag Kušić**, “TORNADO”
8. **Nenad Kušić**, “TORNADO”
9. **Josip Pavčo**, “TORNADO”
10. **Bonino Cerovečki**, “TORNADO”
11. **Zdravko Mikulčić**, “TORNADO”
12. **Dijana Cvitković**, “TORNADO”
13. **Marko Majcenović**, “TORNADO”
14. **Marjan Kemenović**, “TORNADO”
15. **Željko Hrenka**, “Mine Wolf Systems AG“
16. **Chris Hughes**, “Mine Wolf Systems AG“
17. **Ingo Streicher**, “Mine Wolf Systems AG“

• ACHIEVED RESULTS

4.1. Results with AP mines

The following results were achieved:

a) AP blast mines

TYPE of MINE	DEPTH (cm)				
	5	10	10	15	20
PMA-1A	A	A	A	A	A
PMA-2	A	A	A	A	A
PMA-3	A	A	A	A	A

Table 2- test results with AP pressure activated mines

A= activated
R= shattered

- 15 mines were buried
- **15 mines were activated**
- neither machine nor tiller was damaged

b) AP fragmentation mines

TYPE	1	2
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of MINE	mine	mine
PMR- 2A	A	A
PROM- 1	A	A

Table 3- test results with AP blast mines

- 4 mines were set
- **4 mines were activated**
- There were slight dotted damages on the tiller which did not effect the functioning of the machine or work tool

4.2. Test lane results

a) tiller

TYPE OF SOIL	Average depth (cm)	Possible capacity (m ² /5h)
TOPSOIL	22,01	564,41
SAND	23,97	740,00
GRAVEL	30,67	988,13

Table 4 - test lane results

5 Draft usability evaluation

On the basis of this Testing report and on Article 5.6 of the “*Programme of Testing and Usability Evaluation of Machines used in Humanitarian Demining Operations*”, **we propose:**

THE USABILITY EVALUATION OF THE “MINI MINE WOLF” DEMINING MACHINE

1. It is well-suited for the mechanical processing of a mine suspected area
2. It can be used on a terrain with a soil class ranging from I to V
3. It removes low, medium and high vegetation successfully
4. It destroys all types of antipersonnel mines successfully
5. The machine operator works from outside (remote controls operation). The operator should wear protective equipment and should be standing at a minimum distance of 200 m to the machine or in an armored vehicle at a minimum distance of 50 m to the machine.
6. The machine operator is not allowed to walk on the terrain processed by the tiller until the deminer’s inspection of the terrain is performed.

7. The results on the test lanes are the following:

TYPE OF SOIL	Average depth (cm)	Possible capacity (m²/5h)
TOPSOIL	22,01	564,41
SAND	23,97	740,00
GRAVEL	30,67	988,13

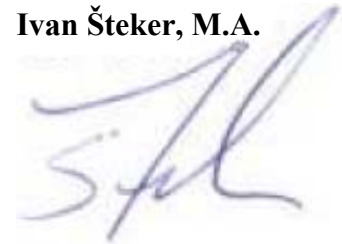
8. Once a mined area is processed mechanically using the “MINI MINE WOLF” machine, application of a second method of deminer’s inspection is obligatory.

Given the current technical solutions, and based on the testing results as well as on the criteria of the “Programme of Testing and Usability Evaluation of Machines used in Humanitarian Demining Operations”, the machine may be used, with its tiller, for performing humanitarian demining tasks in the Republic of Croatia.

Zagreb, 6th of November 2006

Testing leader

Ivan Šteker, M.A.



This Report was translated by Mr. Tomislav Vladimir Blašković Vondraček. The translator guarantees that the translation is identical to the original.

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